

Effect of Al and Fe doping in ZnO on magnetic and magneto-transport properties



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ABSTRACT

The structural, magnetic and magneto-transport of undoped ZnO, Zn_{0.97}Al_{0.03}O, Zn_{0.95}Fe_{0.05}O and Zn_{0.92}Al_{0.03}Fe_{0.05}O thin films grown on Si(100) substrate using pulsed laser deposition were investigated. The single phase nature of the films is confirmed by X-ray diffraction and Raman spectroscopy measurements. The possibility of Fe metal cluster in Fe doped/co-doped films is ruled out by Fe 2p core level photoelectron spectra. From O 1s core level spectra it is observed that oxygen vacancy is present in all the films. The undoped ZnO film shows magnetic ordering below ~175 K, whereas Fe doped/codoped samples show magnetic ordering even at 300 K. The Al doped sample reveals paramagnetic behavior. The magneto-transport measurements suggest that the mobile carriers undergo exchange interaction with local magnetic moments.

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1. Introduction

Most of the contemporary technologies highly rely on the semiconductors, whose properties are guided by the charge nature of the carriers. Over the last few years, efforts are on to induce a coupling between the charge nature of the carrier with its another associated intrinsic property namely “spin” [1,2]. Despite being intrinsically associated with any carrier, its coupling to the charge property vis a vis contribution towards electrical transport measurements is rather not easily available, which is due to random nature of the charge transport making a net contribution due to spin towards current zero. The urge for increased data processing speed, non-volatile memory, more storage capacity etc have led to inventive methods of engineering spintronic materials coalescing the spin as well as the charge nature of these carriers. In spintronics one can interplay the magnetic, electronic as well as the optical property of the system. One methodology to realize the blend of charge as well as the spin degree of freedoms is to dope some transition metal element having magnetic moment in an otherwise non-magnetic semiconductor matrix and expect that the resulting material will yield a magnetic field controlled electric

current as well as an induced magnetic ordering in the system. In this context several systems have been exploited such as II–VI semiconductor based system, wherein an element of II group and an element of VI group form a semiconductor (eg. CdTe), and a magnetic impurity such as Mn is doped or Mn doped III–V based semiconductor such as GaAs [3,4]. However, the maximum Curie temperature observed for these systems are between 100–200 K. Indeed, one may rather desire a system with Curie temperature around room temperature or higher making it accessible for futuristic applications. In order to bring about this milestone, the area of exploration for the materials was extended to oxide systems as well due to wide range of rich properties that these oxide systems are endowed with [5–15]. The discovery of room temperature ferromagnetism in Mn doped ZnO thin film by Dietl et al. attracted tremendous attention in ZnO based materials [5]. Since then several studies have been carried out in ZnO based materials with different combinations of TM ions [6–8]. It has also been observed that optical, ferromagnetic and electrical properties for these systems strongly depend on the carrier density and hence there have been reports of Al codoping in co-doped ZnO thin film too [9].

Though the room temperature ferromagnetism in TM doped ZnO based system has been realized, there have been controversies regarding the cause of origin of ferromagnetism in the system. Some of the reports suggest it to be due to TM clusters or secondary phase formation while some reports put it to be

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charge carrier mediated ferromagnetism [1,10]. Interestingly Sundaresan et al., reported on the occurrence of ferromagnetism in nano particles of ZnO [11]. The wide range of reported magnetic nature of the samples, magnetic ordering temperature and saturation magnetization are attributed to the different nature of defects in the system, which are found to be a crucial parameter in setting up a magnetic ordering in a system. It is also perceived that with TM doping or introducing defects, carrier density is varied, which acts as a mediator for magnetic interaction among magnetic impurities and hence magnetic properties strongly depend on the carrier density [12]. Though there are several models proposed to explain the origin of magnetism, the bound polaron model proposed by Coey and coworker seems to address most of the issues in such materials [16,17]. In the present work, we report the effect of Fe and Al doping and Fe–Al co-doping on the structural, electrical and magnetic properties of ZnO thin films grown on Si substrate. We have chosen Si substrate due to its demand in contemporary semiconducting based industry and a compatible growth of ZnO on Si substrates. The present work has been performed on thin films, which is driven by the incentive that for the realization of any device, thin film holds the ultimate efficacy.

2. Experimental techniques

Bulk pellets of ZnO, $\text{Zn}_{0.97}\text{Al}_{0.03}\text{O}$, $\text{Zn}_{0.95}\text{Fe}_{0.05}\text{O}$ and $\text{Zn}_{0.92}\text{Al}_{0.03}\text{Fe}_{0.05}\text{O}$ (hereafter, they are named as ZnO, ZAO, ZFO and ZAFO respectively) were prepared by solid state reaction technique. For this Al_2O_3 and Fe_2O_3 powders were mixed with ZnO powder in proportional ratio, which was grinded for several hours in acetone. The grinded powder was pelletized using hydraulic pressure and sintered at 950°C for 15 h. These well sintered pellets were used as targets for the film deposition using pulsed laser deposition (PLD). Before starting deposition, the deposition chamber was evacuated to achieve base pressure of 2×10^{-6} Torr. The films were deposited on Si (100) substrate at an oxygen partial pressure (OPP) of 1 mTorr at substrate temperature of 600°C . The substrate was mounted on a heater placed opposite to the target with the help of silver paste. The laser beam was focused before allowing it to incident on the target surface at an angle of 45° . During deposition substrate to target distance was kept at ~ 5 cm and laser energy density at the target surface was ~ 2 J/cm². To avoid crater formation on the target surface, the target was rotated at 10 rpm. The deposition was carried out at 10 Hz for 20 min, which resulted into film thickness of ~ 150 nm as measured using thickness profilometer (AMBIOS XP-1 stylus profiler). After deposition, the thin films were cooled to room temperature in the same OPP. The deposited films were characterized using x-ray diffraction (Bruker AXE D8 X-ray Diffractometer with Cu K α radiation). The Raman spectra were recorded in backscattering configuration using an HR800 Jobin-Yvon spectrometer equipped with a 50x objective, Peltier cooled charge coupled device detector and an Ar⁺ ion laser (wavelength 488 nm) was used as an excitation source. The valence state of Fe ion in Fe doped samples was probed using X-ray photoelectron spectroscopy (XPS). XPS was performed using Al-K α (1486.6 eV) lab-source. Before recording the spectra, surface of the sample was cleaned using 0.5 keV Ar⁺ ions for 5 min. The spectra were recorded using Omicron energy analyzer (EA 125, Germany). The magneto-resistance measurements were also carried out employing four probe resistivity method at different temperature values as a function of magnetic field using Oxford He-cryostat in the magnetic field range of 0 to 7 T. Magnetic properties of the films as a function of temperature and magnetic field were measured by Quantum Design's MPMS SQUID VSM-7Tesla.

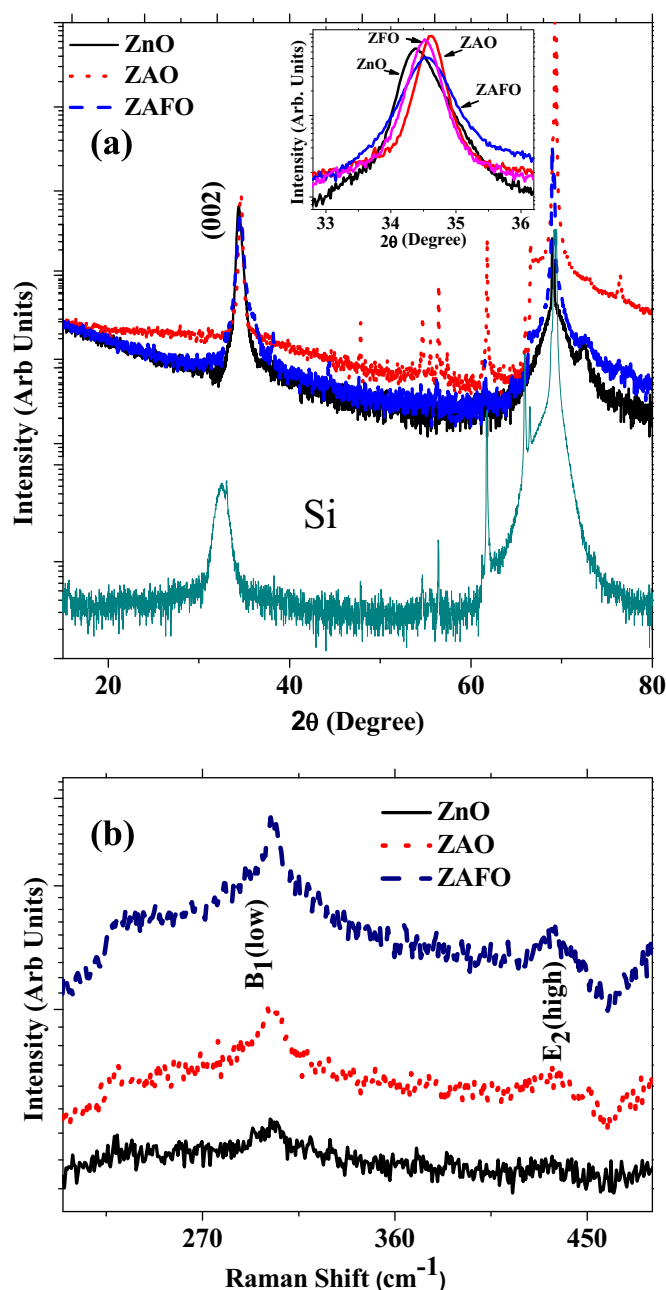


Fig. 1. (a) X-ray diffraction pattern of ZnO, ZAO and ZAFO thin films along with Si (100) substrate, inset in Fig. (a) is the zoomed scale of (002) peak of all the films including ZFO film; (b) Raman spectra of the grown films.

3. Results and discussion

The XRD pattern of the grown films along with Si (100) substrate are shown in Fig. 1(a). It is evident from the pattern that the films are grown along *c*-axis direction, since only the Bragg reflection corresponding to the (002) plane of wurtzite ZnO phase is observed in the pattern appearing from film [18]. Other peaks in the XRD pattern are due to substrate, as can be seen when compared with that of the substrate. Please note that the XRD patterns are plotted in log scale so that presence of secondary/impurity phase, if any, can be easily discerned. After Al doping or Fe doping, structure remains somewhat similar to undoped ZnO, no extra peak or feature is observed in the XRD pattern, suggesting that the films remain in single phase of wurtzite ZnO structure. Using the peak position of (002) in these patterns, we calculate the out of

plane lattice parameter c , which comes out to be 0.5217 nm for ZnO, 0.5182 nm for ZAO and 0.5193 nm for ZAFO films. The lattice parameters of ZFO is same as ZAFO film. It is evident from c parameter of the grown films that with Al doping, the out of plane lattice parameter decreases, which slightly increases after Fe doping/co-doping, but yet lower than undoped ZnO. This is not surprising, if we look at the ionic radii of Al^{3+} (67.5 pm), Fe^{2+} (92 pm), Fe^{3+} (78.5 pm), and Zn^{2+} (88 pm). It is clear that with Al doping lattice parameters of ZnO should shrink, as observed. With Fe doping, lattice parameter should increase if it is in $2+$ ionic state and decrease if the ionic state is $3+$. Therefore, if Fe happens to be in mixed state, an average effect would emerge from the XRD pattern, depending on which ionic state dominates. Indeed, the variation in c parameter of the grown films as observed from XRD pattern points out towards the substitutional nature of Al and Fe ions in the grown films.

To further confirm the structure of the grown films we performed Raman spectroscopy measurements. It should be recalled here that space group of hexagonal wurtzite ZnO is $P63mc$, with two formula units per primitive cell suggesting that the primitive cell of ZnO has basic unit of 4 atoms. Therefore, one would expect 12 number of phonons, out of which 3 modes are acoustic phonons and 9 modes are optical phonons. According to group theory, the Raman active zone-center optical phonons are $A_1 + 2E_2 + E_1$. A_1 and E_1 phonon modes are polar phonons and are split into transverse optical (TO) and longitudinal optical (LO) phonons. The two E_2 modes are non polar modes, oxygen atoms are responsible for higher frequency mode Zn sublattice for lower phonon mode [19]. The vibrational spectra of our films are shown in Fig. 1(b). Mostly the contribution of Si substrate is observed. We primarily observe two Raman modes only from ZnO wurtzite structure at $\sim 290 \text{ cm}^{-1}$ and 436 cm^{-1} , which are attributed to B_1 (low) and E_2 (high) modes respectively. Other Raman modes are suppressed due to huge contribution from Si substrate. Similar observation is observed in all the films, further suggesting that with Al and Fe doping also structure remains wurtzite hexagonal.

One of the major concerns in TM doped ZnO system is related to the valence state of the dopant ion. To get an insight into the electronic state of Fe in ZnO matrix, we performed XPS measurements. It should be recalled here that electronic state of Fe in any compound can be distinguished by probing the binding energy of Fe 2p core level electrons [20]. In Fig. 2(a) and (b), we show the Fe 2p core level spectra of ZFO film and ZAFO film respectively. Primarily two features are observed namely Fe $2p_{3/2}$ and $2p_{1/2}$ appearing at around 711 and 724 eV respectively, due to spin orbit coupling. It should be recalled here that in case of Fe metallic state, the binding energy position of Fe $2p_{3/2}$ feature is at $\sim 706 \text{ eV}$, and in the presented spectra, we do not find any signature corresponding to the Fe metallic state. This rules out the possibility of formation of Fe metallic clusters in these deposited films. Since the binding energy positions of Fe^{2+} and Fe^{3+} states are very close, therefore, only based on the binding energy position it is not easy to distinguish $\text{Fe}^{2+}/\text{Fe}^{3+}$ states. However, the binding energy of the satellite structures of Fe $2p_{3/2}$ for Fe^{2+} and Fe^{3+} being 715 and 719 eV respectively, the corresponding satellite structure can be employed to probe their presence [21]. In case of Fe existing in the mixed states, one would observe a smeared out structure in this energy range. The spectra were fitted with Gaussian and Lorentzian functions (as shown in Fig. 2(a)). It is observed that the features corresponding to Fe $2p_{3/2}$ and Fe $2p_{1/2}$ are broadened due to the existence of the both Fe^{2+} and Fe^{3+} ions. The spectra could be fitted properly when we accounted for both the ionic states of Fe and the fitted Fe $2p_{3/2}$ (Fe $2p_{1/2}$) binding energy is 709.4 (722.6 eV) for Fe^{2+} and 711.3 eV (724.6 eV) for Fe^{3+} . In Fig. 2(c) we show the O 1s core level spectra fitted with Gaussian and Lorentzian functions. It is evident that two features are observed in

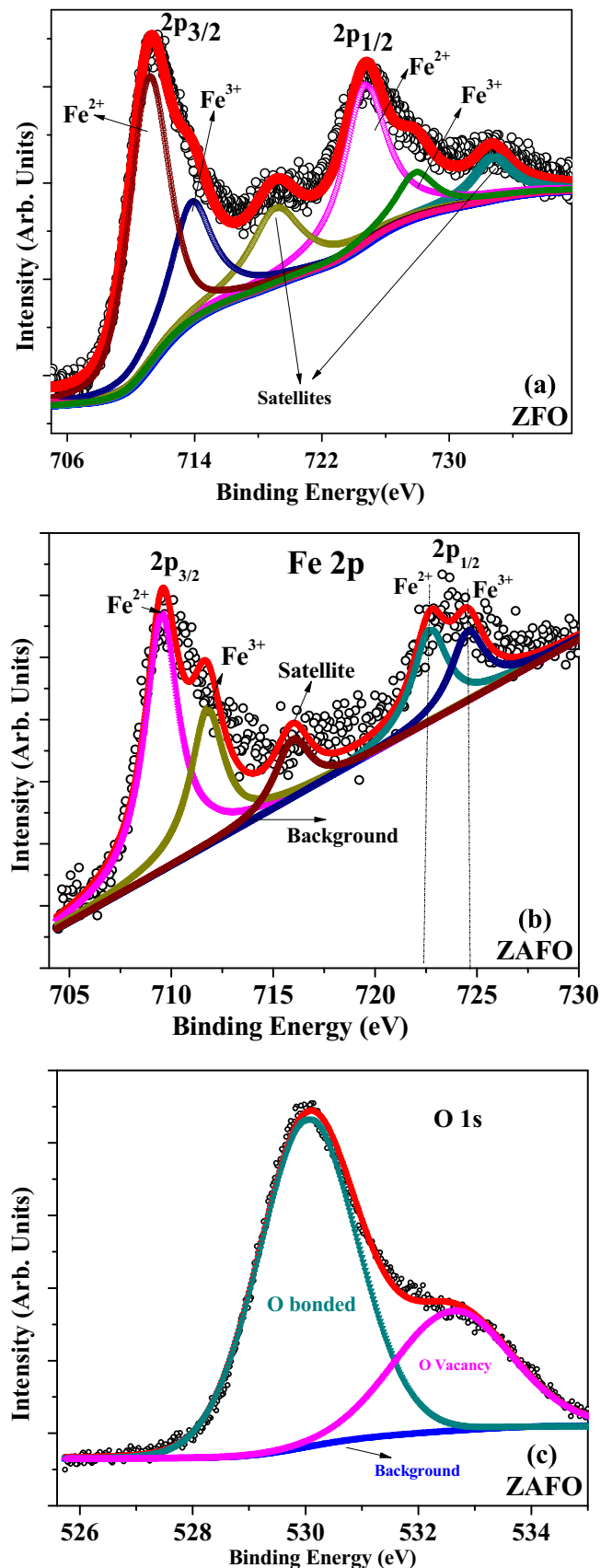


Fig. 2. Fe 2p core level spectra of (a) ZFO and (b) ZAFO thin films and (c) O 1s core level spectra of ZAFO thin film.

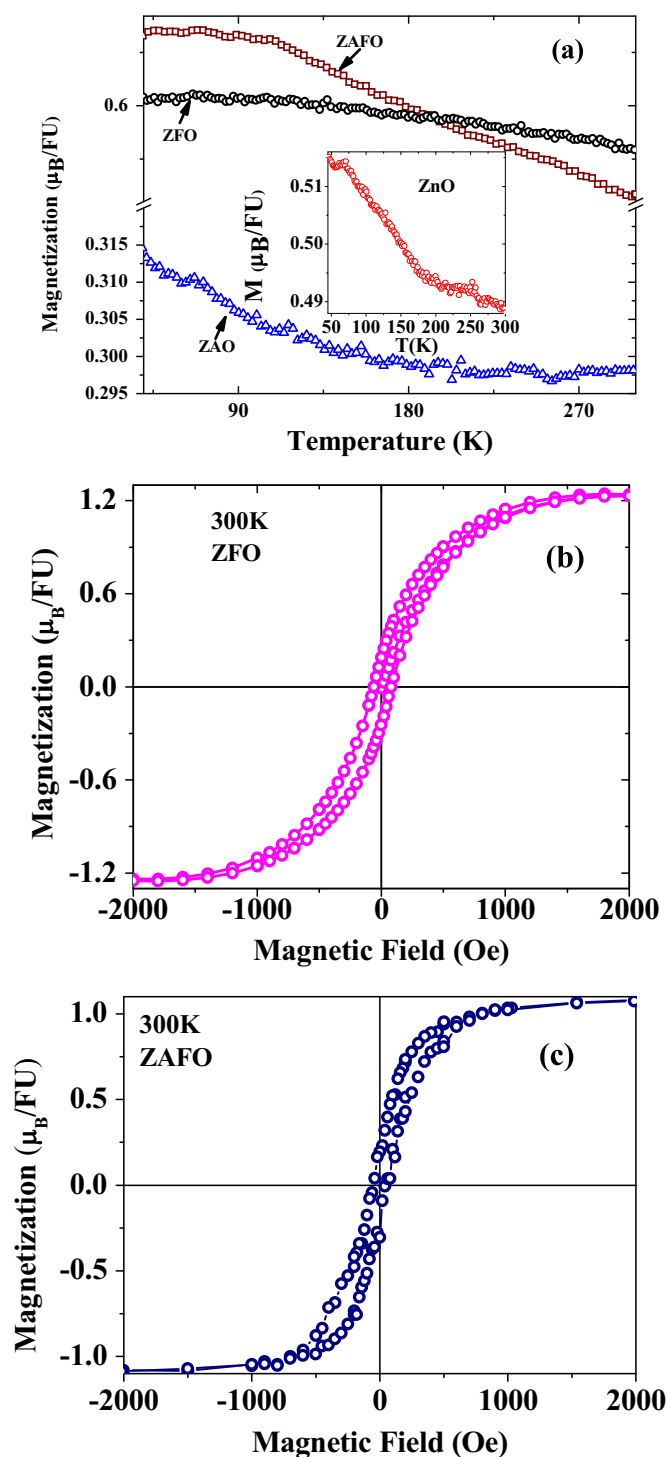


Fig. 3. (a) Magnetization versus temperature plot for ZFO, ZAO and ZAFO films. Inset shows the magnetization versus temperature behavior of ZnO thin film. Magnetization versus magnetic field hysteresis behavior of (b) ZFO film and (c) ZAFO film at room temperature.

the O 1s core level spectra. One prominent feature at ~ 530 eV corresponds to oxygen bonded with Zn and a shoulder feature at ~ 531.7 eV corresponds to oxygen vacancy. Similar spectra are observed for other films also, suggesting that these films contain oxygen vacancy.

After establishing the single phase nature of the grown films and that Fe atoms are not forming a metallic cluster, we performed their magnetization measurements. In Fig. 3(a) we show the magnetization versus temperature behavior of different films

measured in magnetic field value of 200 Oe. It is interesting to note that undoped ZnO, ZFO and ZAFO films reveal convex like magnetization versus temperature ($M-T$), as normally expected for ferromagnetic materials within the Weiss mean field theory. Whereas, ZAO does not show such behavior, rather it reveals concave like behavior, normally attributed to the paramagnetic nature of the sample. It is also observed that undoped ZnO film shows an onset of magnetic ordering below ~ 175 K [inset of Fig. 3 (a)], whereas the Fe doped as well as Fe, Al codoped sample does not show any magnetic transition in the measured temperature range up to 300 K, suggesting its Curie temperature to be higher than 300 K. It is also noted that slope of the $M-T$ behavior of ZFO film is different from the ZAFO film, suggesting the different exchange interaction coefficient values among the magnetic impurities in the two films as well as different carrier concentration in the two films, which are supposed to be the vital parameters in mediating the interaction among the magnetic impurities. This would also lead to different magnetic transition temperature values in the two films.

To further get an insight of the magnetic properties of these samples, magnetization versus magnetic field hysteresis plot is recorded at room temperature as shown in Fig. 3(b) and (c). The contribution of Si substrate towards MH behavior is subtracted after considering linear diamagnetic signal of the substrate at higher magnetic field values. It is apparent that ZFO film as well as ZAFO film exhibits a clear magnetic hysteresis behavior and both the films reveal coercivity value ~ 70 Oe at room temperature. This is consistent with the $M-T$ behavior, which is indicative of its magnetically ordered state at room temperature. It is also observed that saturation magnetization in Fe doped sample is higher than the co-doped sample. The undoped ZnO film shows a paramagnetic like behavior (not shown here), since its magnetic transition temperature is ~ 175 K, much lower than room temperature. As expected, ZAO film also does not reveal any hysteresis due to its paramagnetic nature as evident from the $M-T$ behavior. The magnetization versus temperature behavior along with magnetic hysteresis behavior point out towards the possible magnetic ordering in ZnO, ZFO and ZAFO samples, whereas its absence in ZAO sample.

It is known that ZnO thin films contain defects like oxygen vacancy (as also shown by O-1s core level XPS spectra) and Zn interstitial. These defect states are supposed to be source of n-type charge carriers in ZnO, despite it having a band gap of 3.4 eV. The Al^{3+} doping is known to enhance carrier density in ZnO. The occurrence of magnetic ordering in ZAFO sample can be understood by charge carrier mediated magnetic interaction among Fe ions. However, it is surprising to see setting of magnetic ordering in undoped ZnO film. Sundaresan et al. [11] in their report suggested that the electrons trapped in the oxygen vacancy forming F center are polarized and are responsible for magnetic ordering the system, even without TM doping. In the present study on thin films the possibility of oxygen vacancy, Zn interstitial as well as Zn vacancy is quite likely to be present. These defect states can modify the electronic energy levels in a way to induce local magnetic moment responsible for magnetic ordering. Depending on the defect density and induced magnetic moment, the exchange interaction will govern the magnetic ordering temperature, which in the present study is ~ 175 K in ZnO undoped film.

In order to further confirm that the charge carriers mediate the magnetic interactions among the magnetic impurities, we carried out the magneto-transport properties. The resistance of Fe doped ZnO film was too high to be able to measure with the available instruments. In Fig. 4(a) we show the resistivity versus temperature behavior of ZnO, ZAO and ZAFO films. It is clearly evident that the resistivity value of ZAFO film was comparatively much lesser than ZFO film because of carrier doping due to Al, whereas in

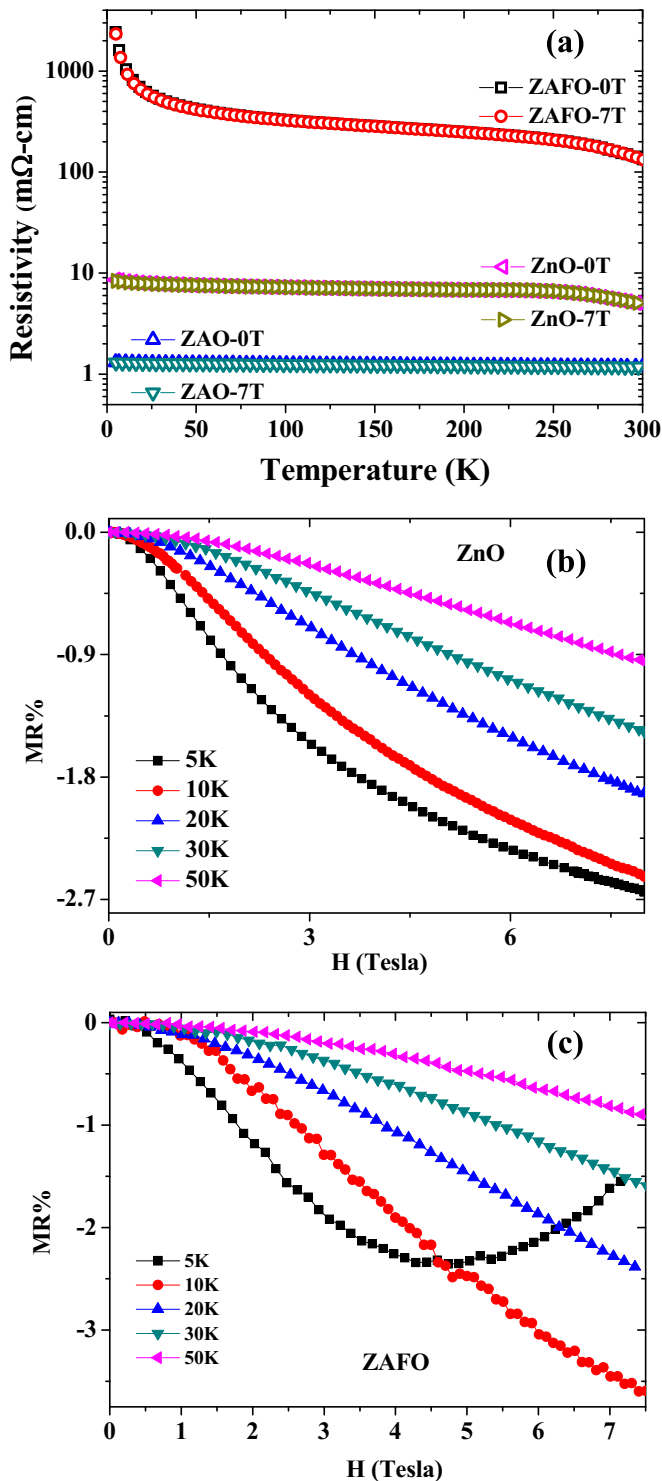


Fig. 4. (a) Resistivity versus temperature plot for ZnO, ZAO and ZAFO films. (b) and (c) are the magneto-resistance versus magnetic field plot for ZnO and ZAFO films respectively.

undoped ZnO film, oxygen vacancy acts as n-type carrier source. Therefore, magneto-resistance measurements could be performed on undoped and Fe, Al codoped films. Resistance versus magnetic field measurements at different temperature values in the range of 5–50 K are shown in Fig. 4(b) and (c). Both the films show a finite negative magneto-resistance $\{MR\% = (R_H - R_0) \cdot 100 / R_0\}$ behavior at all the measured temperature values, however, the magnitude drops with increase in temperature. The magneto-resistance effect

can also arise due to Lorentz force on the mobile carriers, however, this effect should give rise to positive magneto-resistance. The occurrence of negative MR% in the present case are indicative of role of spin scattering and carrier mediated exchange interaction among local magnetic moment in the system. When there is no applied magnetic field, the charge carriers are scattered due to randomly aligned magnetic moments. However, in the presence of magnetic field, the localized magnetic moments are aligned, reducing the scattering of the carriers and leading to negative MR. In undoped ZnO film, Xu et al. proposed the lack of s–d exchange interaction to be responsible for negative MR at low temperatures [22]. It is interesting to note that Al, Fe codoped sample shows non monotonic variation in MR% with magnetic field at 5 K. Such field dependent MR% behavior suggest that charge carriers trapped at some energy state between the valence band and conduction band is interacting with local magnetic moment. Under the influence of magnetic field these energy levels undergo Zeeman type splitting yielding spin polarized excitation of carriers into the conduction band [23]. This observation is a clear manifestation of a strong coupling between the local magnetic moment and the charge carriers.

In conclusion we have deposited thin films of undoped ZnO, Al doped ZnO, Fe doped ZnO and Al, Fe co-doped ZnO on Si(100) substrate using pulsed laser deposition. XRD and Raman spectroscopy measurements confirm the single phase nature of the films. The analysis of out of plane lattice parameter *c* suggests that Al and Fe substitute in ZnO matrix. XPS studies also suggest that Fe is not in metallic cluster form, rather they are in mixed Fe^{2+} and Fe^{3+} states. The Fe doped ZnO and Al, Fe codoped samples show magnetic ordering in the system with Curie temperature beyond room temperature. These films reveal a clear magnetic hysteresis behavior at room temperature with a finite coercivity value. The undoped ZnO film also reveals magnetically ordered state below 175 K. From magneto-transport measurements it appears that the charge carriers are strongly coupled to the local magnetic moments. Thus it seems that the magnetic ordering among local magnetic moments is set by mediation of charge carriers. Further work is underway to estimate the carrier density, type of charge carrier and its variation with temperature.

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Restricted cascade and wreath products of fuzzy finite switchboard state machines

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Abstract

A finite switchboard state machine is a specialized finite state machine. It is built by binding the concepts of switching state machines and commutative state machines. The main purpose of this paper is to give a specific algorithm for fuzzy finite switchboard state machine and also, investigates the concepts of switching relation, covering, restricted cascade products and wreath products of fuzzy finite switchboard state machines. More precisely, we study that the direct products/Cartesian compositions of two such fuzzy finite switchboard state machines is again a fuzzy finite switchboard state machine. In addition, we introduce the perfect switchboard machine and establish its Cartesian composition. The relations among the products also been examined. Finally, we introduce asynchronous fuzzy finite switchboard state machine and study the switching homomorphic image of asynchronous fuzzy finite switchboard state machine. We illustrate the definition of a restricted product of fuzzy finite switchboard state machine with the single pattern example.

Keywords: Fuzzy finite state machine, Switchboard, Direct product, Cascade product, Wreath product, Asynchronous.

1 Introduction

Automata theory is one of the topics from the general system theory which provides mechanisms for the formulation and solution of general problems which can be applied to real-world problems in the future. A different class of switching mechanisms has been used for controlling more complex systems. It is necessary to understand the significance of the modeling of switching mechanisms as a control device for any electronic system. In 2002, according to Inagaki [10], Genetic algorithms (GAs), an evolutionary computation method, was used for generating more complex deterministic finite automata (DFA) through the use of a switching device to make correct predictions on the next input symbol. Within the context of a Design Pattern, Ramnath and Dathan [33] studied the switchboard behavior which is similar to a mediator in a finite state machine (FSM) and also highlighted that FSM events allow anyone to design and modify the two subsystems independently. An FSM model exhibits a behavior where responses to future events depend on previous events. A classical problem of the finite state machine is to navigate or to predict the flow of the next input information into a designated output when it receives a given input information from a sequence of integers. The purpose of the switchboard in a finite state machine is that a direct flow of information from one state to another is able to be controlled and any sudden failure will not cause the information to be entirely lost. However, the switchboard



Interval type-2 fuzzy automata and Interval type-2 fuzzy grammar

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Abstract

The purpose of the present work is to introduce and study the concept of interval type-2 (IT2) fuzzy grammar which recognizes the given IT2 fuzzy languages. The relationship between IT2 fuzzy automata and IT2 fuzzy (weak) regular grammars is discussed. Specifically, the results we obtained here are (i) IT2 fuzzy weak regular grammar and IT2 fuzzy regular grammar generate the same classes of IT2 fuzzy languages (ii) for a given IT2 fuzzy regular grammars, there exists an IT2 fuzzy automata such that they accept the same IT2 fuzzy languages, and vice versa. In addition, we define some operations on IT2 fuzzy languages and it is shown that IT2 fuzzy languages recognized by IT2 fuzzy automata are closed under the operations of union, intersection, concatenation and Kleene closure, but are not closed under complement.

Keywords Interval type-2 fuzzy set · Interval type-2 fuzzy automata · Interval type-2 fuzzy grammar · Interval type-2 fuzzy languages

1 Introduction

It is well-known that the simplest and most important type of automata is finite-automata and it is closely related to formal language as finite-automata can be classified by the class of formal languages (cf., [5,6,25]). In finite automaton, the input alphabet consists of a finite number of discrete input symbols. Fuzzy automata proposed by

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Vat Baba

Stage Performance

05 June, 2022 | Kilkari Bihar Bal Bhawan (Patna)

To celebrate World Environment Day the cultural cell of College of Commerce, Arts and Science in Collaboration with **Imagination** performed the play **Vat Baba** (वट बाबा) directed by **Kundan Kumar** and written by one of the most influential writers of modern Hindiliterature **Phanishwar Nath Renu**. The play was performed at Kilkari Bihar Bal Bhawan, Patna, Bihar.





Street Play For IndianOil Corporation

05 June, 2022 | IndianOil Corporation (Patna)

On the occasion of World Environment Day the cultural cell of College of Commerce, Arts and Science in Collaboration with **Imagination (Bihar)** and supported by IndianOil Corporation and Radio City performed the street play 'Dharti Hamari-Zimmedari Hamari'.

The event was inaugurated by Sh.Vibhash Kumar, Executive Director, Indian Oil Corporation, Bihar & Jharkhand.





World Sparrow Day Stage Performance

20 March, 2023 | Patna Zoo

On the occasion of World Sparrow Day the cultural cell of College of Commerce, Arts and Science in Collaboration with **Imagination (Bihar)** supported by **Sanjay Gandhi Botanical Garden (Patna Zoo)** performed the street play '**Gauraiya Bachao-Paryavaran Bachao**'. The street play highlighted the steps to be taken to save sparrow and why they are important part of our ecosystem.





Street Play For B.S.P.C.B

04-06 March, 2023 | Patna (Bihar)

The Cultural cell of College of Commerce, Arts and Science in Collaboration with Imagination Bihar performed Street Play 'Jogira Sara Rara Ra' for the Bihar State Pollution Control Board. The street play was performed to aware the people about the rise of air pollution across city during holika dahan.





Pure and co-doped ZnO nano-sheets thin films as UV detectors

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ABSTRACT

Herein we report the formation of hexagonal nano-sheets of pure and Co-doped ZnO thin films. Both films were deposited using the aerosol-assisted chemical vapor deposition technique. The X-Ray diffraction results revealed that the film is a mixture of two ZnO phases; Wurtzite and Zinc blende. Scanning electron microscope images show hexagonal nano-sheets formation onto the substrate surface. The band gap of the deposited films has been determined using Beer's law. The performance of both films as Ultra-Violet detectors has been investigated. The response/decay time has been determined which shows large values. With doping response time decreases, whereas decay time increased. The response time was recorded a minimum value of 4s for Co-doped ZnO films at 5 V applied voltage. While the gain value of the doped film was found to be lower than the pure one.

1 Introduction

ZnO is one of the most studied semiconductor metal oxides (SMO) materials due to its multifunctional properties. Properties like high band gap value [1], high exciton binding energy [2], high dielectric constant [3], adjustable refractive index [4], and antibacterial activity [5] make ZnO a very attractive material for many applications. It has been used as photodetectors [6], gas sensors [7], optoelectronic devices [8], solar cells [9], and many other applications.

Zinc oxide is known to exist in three phases [10]. These structures are hexagonal Wurtzite (WU), Cubic rock salt (RS), and cubic Zinc blende (ZB). Among these three phases, the hexagonal WU-ZnO structure is the most common one since it is the most thermodynamically stable phase under ambient conditions, while the ZB-ZnO phase is thermodynamically metastable [11]. Also, the zinc blende phase is stable only when a film gets grown onto a cubic substrate and the rock salt structure is stable at high pressure [11]. It is also known that due to high mismatching between the film and substrate, a separated region of ZB phase

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separates the WU grains. The ZB phase has higher crystallographic symmetry which decreases the scattering of charge carriers and enhances the device fabrications [11]. These attractive properties of ZB phase enhance the attempts of preparing single-phase ZB-ZnO films. Ashrafi et al. [12] report the successful deposition of stable ZB-ZnO thin film onto GaAs (001) substrate with ZnS as a buffer layer. In another work by Lee et al. [13], mixed WU and ZB-ZnO films were reported on sapphire (0001) substrate. Kim et al [14] reported the transformation of WU-ZnO to ZB-ZnO upon annealing at temperature above 600 °C onto Pt/Ti/SiO₂/Si substrate. All these published materials reported the existence of the ZB-ZnO phase when a film gets grown onto the cubic structured substrate. Single-phase ZB-ZnO thin films prepared by spray pyrolysis have been reported by Muñoz-Aguirre et al. [15] and Martínez-Pérez et al. [16] which found to be oriented in (004) direction.

Zinc oxide has proven, through many studies over a long period of time, its ability in detecting ultraviolet radiation with high efficiency. The chemical stability and non-toxicity of ZnO has made it superior material in many applications [8]. In 1954, Mollow reported for the first time the UV detection property of ZnO [17]. Since that time, especially in the eighties of the last century, studies have intensified on the use of zinc oxide as a detector of ultraviolet radiation. UV detection has drawn attention due to a wide range of civil and defense applications. Even in the modern time, many studies focused on studying this property for samples of zinc oxide prepared with different technologies and in different nanometer forms and using many tricks such as doping or mixing with other materials such as carbon materials, to improve the performance of the material as ultraviolet radiation detectors. Despite of several efforts, in the case of doped and undoped ZnO nanostructures, it is very much challenging issue to make a simple and low-cost photodetector till now.

Here we report the formation of the ZB-ZnO structure beside WU-ZnO structure onto the amorphous glass substrate. Aerosol Assisted Chemical Vapor Deposition (AACVD) technique has been employed to prepare the deposited films. The structure, microstructure, and optical properties of the deposited films have been investigated and the effect of Co-1wt% has been studied. The performance of deposited films as a UV detector has been also reported.

1.1 Experimental details

A solution for preparation of pure ZnO film was prepared by dissolving 0.5 gm of Zinc Acetate pentahydrate salt in 50 ml of Ethanol. Here Zinc Acetate [Zn(CH₃COO)₂·2H₂O] was used as Zinc precursor. This mixture is kept on a magnetic stirrer for 15 min until it is all clear. The solution was placed in two necked 100 ml round bottom flasks. One neck was connected to the air compressor, to provide air as the gas carrier, and the other was fitted to a glass column where the substrates were placed. The schematic diagram was shown in Fig. 1. The two necked flasks were placed in a water bath above an ultrasonic humidifier to generate the aerosol. The generated aerosol was carried into the reaction zone by air. The glass column containing the substrate was placed into a horizontal tubular furnace where the temperature was fixed at 380 °C. The flow rate of the air was fixed at 5 L/min and the process takes 40–45 min. After the precursor has been consumed, the films were allowed to cool down to room temperature. For cobalt doping, Cobalt acetate [Co(CH₃COO)₂·4H₂O] was added as per required ratio with the zinc precursor. For doping of 1 weight%, with respect to 0.5 g of Zinc acetate, cobalt acetate was weighted and added to the starting precursor.

The as deposited films were characterized by X-ray diffraction with Cu K α radiation ($\lambda = 1.542$) on a DX-2500 diffractometer. Field Emission Scanning Electron Microscopy (FE-SEM) has been used to study the surface morphology of all deposited films. The FESEM instrument used was of Zeiss Sigma 500 VP Analytical FESEM model from Carl Zeiss (Germany). Also, the ratio of each element in the composition has been determined using Energy Dispersive X-Ray Analysis (EDX spectroscopy). The optical properties have been characterized using T70 double-beam spectroscopy in the spectral range of 200–1100 nm.

The properties of the deposited film as a sensor for 365 nm UV light have been investigated. This was done by recording the change in the value of the electrical current passing through the thin film material—when the potential difference was constant (2, 5, and 10 V) and the film was exposed to ultraviolet radiation for a period of time of 5 s. After these 5 s, the light is turned off and the behavior of the electric current is recorded to return to its original value. In this part of the study, we used Corrtest potentiostat to record the current variation with the light on/off.

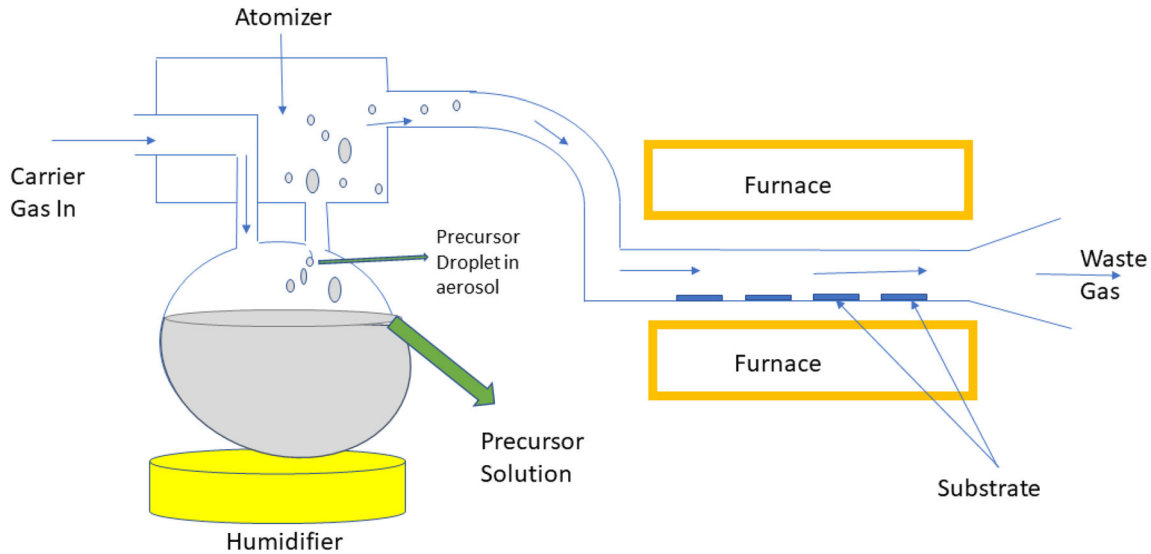


Fig. 1 Schematic diagram of experimental set-up

2 Results and discussion

2.1 XRD results

Figure 2 shows the XRD patterns for pure and Co-1wt.% doped thin films in the range of 2-theta from 5° to 90°. As shown in the figure both films show a crystalline nature by recording diffraction peaks at certain 2-theta values. XRD study shows the formation of mixed phases of ZnO. In pure film, the recorded peak at 33.76° matches the main diffraction peak of (111) plane for cubic ZnO. Zinc blende phase with space group F43m (ICDD 065-2880). Other peaks match the hexagonal phase with space group of P63mc (ICDD 075-1533). Upon doping, the intensity of ZB-ZnO (111) peak was found to decrease in a significant fashion with generating a new diffraction peak at 67.02° which is indexed by (311) plane for ZB-ZnO phase. This decrease in the (111) plane intensity could be attributed to the lower scattering factor of Co compared to Zn [18] and the formation of a new phase of Co_2ZnO_4 . The peak generated at 55.56° well matches the (422) diffraction peak of Co_2ZnO_4 phase (ICDD 002-1069). While WU-ZnO phase peaks do not suffer same type of reduction and remain approximately the same as that in pure film. Such a result implied that Co ions prefer to interact with ZB-ZnO than WU-ZnO. It also shows that the low solubility of Co into ZB-ZnO since it is separated in a new phase as shown in Fig. 2. Salah et al. [18] studied the effect of Co doping concentration on the physical properties of ZnO thin films prepared using spray pyrolysis.

They recorded the formation of WU-ZnO single phase at all doping concentrations of Co up to 10 wt%. In another work by Basit et al. [19] Co was found to be soluble in hexagonal ZnO phase up to 20%.

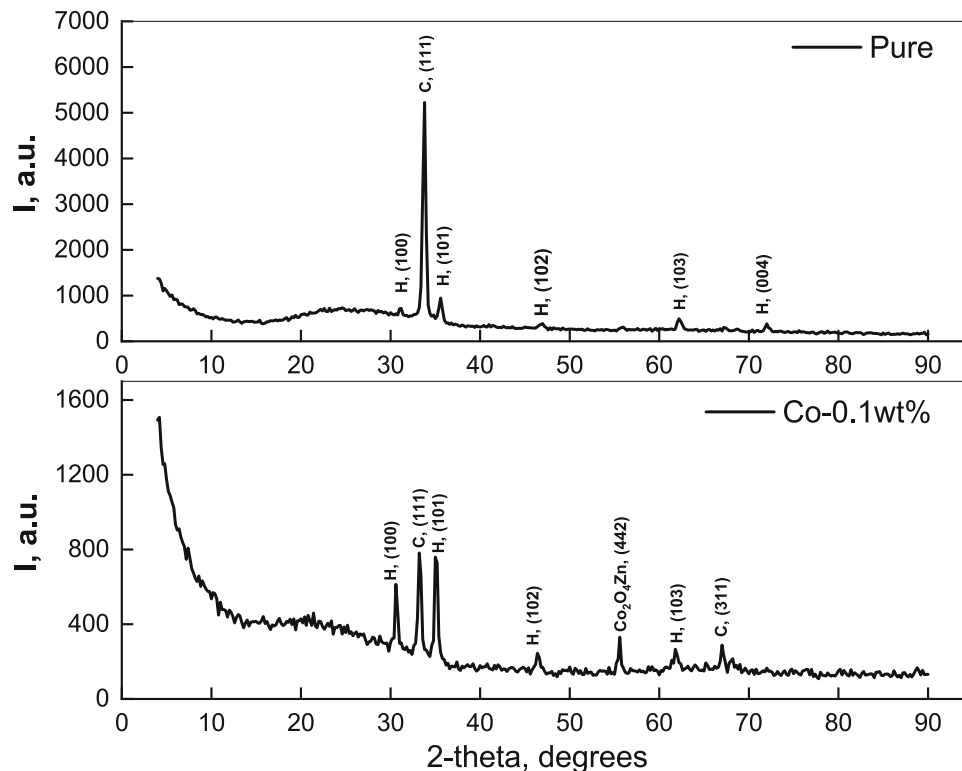
The crystallite size of the deposited films was estimated using Scherer's equation [20];

$$D = \frac{0.9\lambda}{\beta \cos\theta}$$

where λ is the X-ray beam wavelength (1.54 Å), β is the full width at half maximum for the diffraction peaks in radians and θ is the center of the diffraction peak also in radians. The crystallite size has been estimated for each phase from the value of the FWHM for each recorded diffraction peak. Table 1 lists the obtained values for each phase. As listed in Table 1, the crystallite size of ZB-ZnO is constant after Co doping while WU-ZnO crystallite size decreased upon doping.

2.2 Microstructure results

Figure 3 shows the FE-SEM images of deposited film surfaces at two different magnifications powers. As shown for pure and Co-1wt% films, irregular hexagonal-shaped sheets are formed. This irregularity in the hexagonal sheets increases upon Co doping. The crystallite size was estimated from FESEM images by using ImageJ software. The observed sheets are found to cover the whole surface of the substrate

Fig. 2 XRD patterns of pure and Co-doped ZnO films**Table 1** The corresponding crystallite size of each recorded phase in pure and Co-doped films

Film	Phase	D (nm)	Planes
Pure	ZB	14.68	111
	WU	16.54	101
Co-1wt%	ZB	14.66	111
	WU	15.24	101
	Co ₂ ZnO ₄	15.88	422

in uniform distribution. Although the observed uniform distribution, the hexagonal sheets are found to have different side lengths. Figure 4 shows the distribution of the side lengths of the apparent sheets in both films. As shown in the figure, the pure film shows wide distribution of the hexagonal size with a mean value of 200 nm. Upon Co doping, wider distribution of the hexagonal nanosheets' side length is found with a smaller mean value at 148 nm. This implies that Co doping results in shrinking in the size of the hexagonal sheets. This size reduction denotes better crystallinity in the films.

Ikhmayies et al. [21] reported the formation of WU-ZnO hexagonal micro discs onto the amorphous substrate. This explained the formation of a hexagonal structure as a result of suppression of the growth along the [0001] direction due to the stress in the deposited film and capping effect of the byproduct of HCl vapor produced from zinc chloride which had been used as the source of ZnO.

This could be attributed to the lower mobility of the chemical species upon doping on the substrate surface which diminishes the size of the formed sheets. Also, the high surface tension of Co-doped sheets could be a reason for the observed shrinking in the size of the sheet. So cobalt doping has a critical effect on phase structure, crystallinity, and morphology. The close look in the FESEM magnified images clarifies that the irregular length of the sides of the hexagonal nanostructures have generated some porosity in the material which may have some effect on its properties. Figure 5 shows the EDX spectra for both deposited films. The O/Zn ratio in the pure film was found to be 1.96. This ratio is higher than the stoichiometric ratio of ZnO which is 1. This means the deposited films show higher oxygen content than what it is supposed to be. This may be due to changes in surface stoichiometry which may convert the

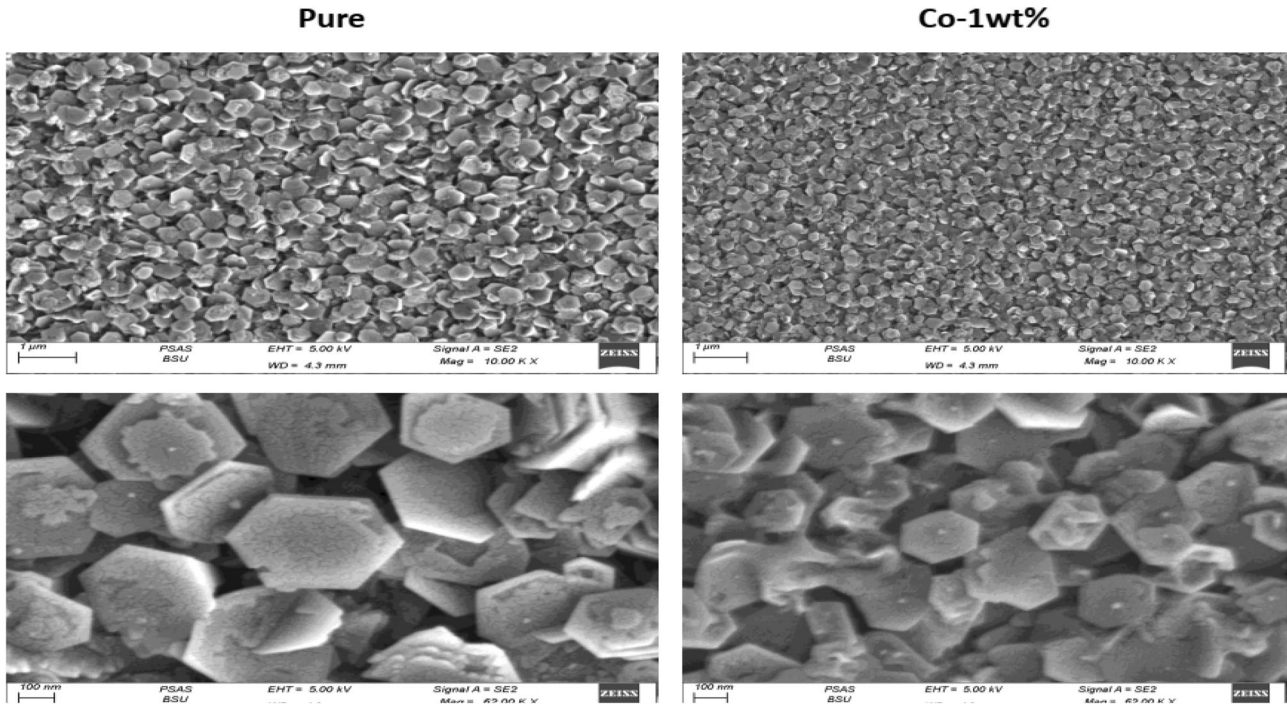
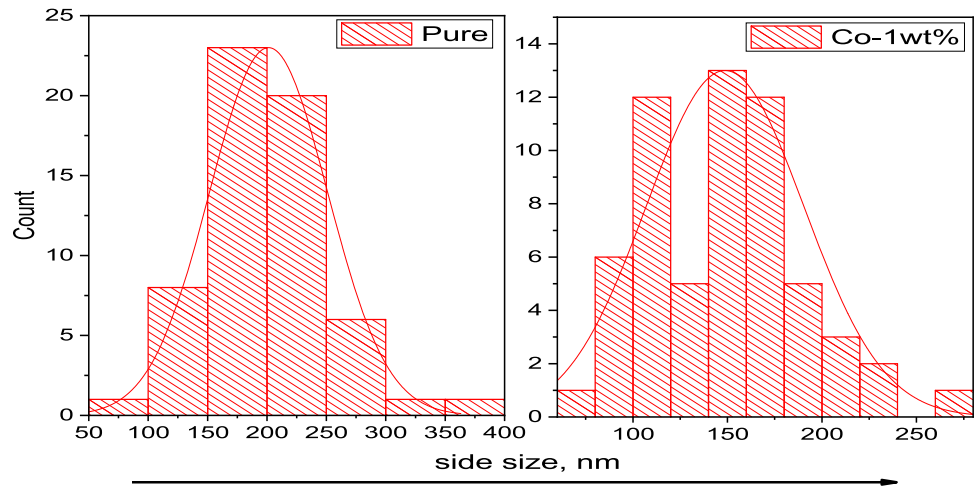


Fig. 3 FE-SEM images for deposited films

Fig. 4 Sides lengths distribution of hexagonal sheets



oxygen deficient state to oxygen excess state as well as reduction of Zn ion. Such a result has been reported in another study [22]. The ratio O/Zn suggests high oxygen content which can be attributed from native defects of ZnO. This may be due to an O atom occupying a Zn lattice. This native defects are responsible for changes in the electrical as well as optical properties in ZnO [23].

2.3 Optical properties

Figure 6 shows the transmission spectra of pure and Co-doped ZnO thin films deposited over substrates. As shown in the figure, both films show high transmission levels with values between 70 and 80% in the wavelength range greater than 500 nm. The observed interference fringes have been used to estimate the thickness of the deposited films. The thickness has been estimated using PARAV software [18]. Pure

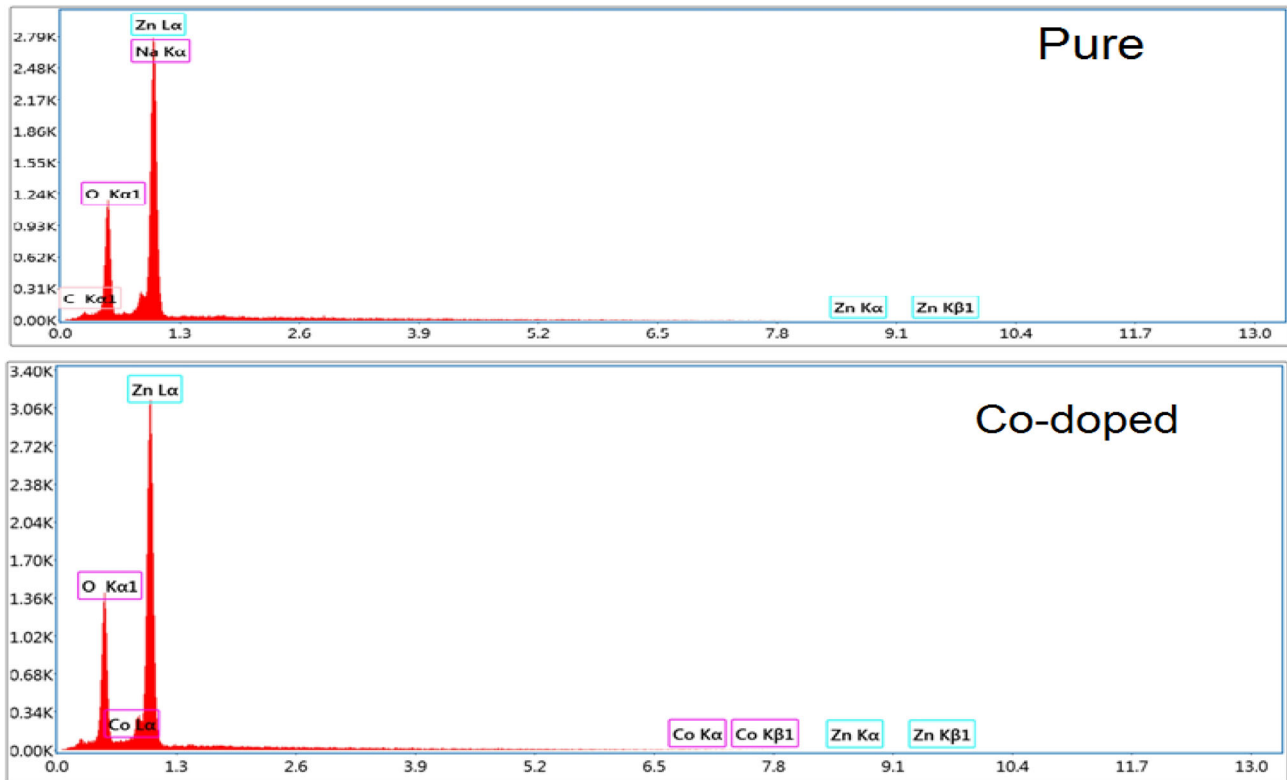


Fig. 5 EDX spectra of pure and Co-doped ZnO thin films

films show a thickness of 1168 nm, whereas 1 wt% Co-doped film shows 508 nm. Such reduction in the thickness of ZnO films upon a low amount of Co doping has been recorded by other authors also [18]. As shown in Fig. 4, no absorption bands can be attributed to the cobalt ions as a result of the crystal field as recorded by others [24–26]. This could be ascribed to the small content of Co in the deposited films. Such absence of Co absorption bands at low Co concentration levels is recorded in the work of Salah et al [18].

The band gap value of deposited films is estimated from Tauc's equation;

$$\alpha = A \frac{(h\nu - E_g)^n}{h\nu}$$

where A is a constant, $h\nu$ is the energy of the incident photons, E_g is the band gap value and n is an exponent depending on the transition nature. It is well known that ZnO is a direct band gap semiconductor with $n = 0.5$. Figure 7 shows the variation of $(\alpha h\nu)^2$ against $h\nu$. The extrapolation of the straight line intersects the $h\nu$ axis at the band gap value. The estimated band gap values were found to be 3.26 eV for pure ZnO, whereas for Co doping it is 3.24 eV.

This revealed no significant change in the band gap value upon Co doping even after the significant reduction in the film thickness. In another way, we can state that the amount of change is neutralized by the reduction of thickness.

2.4 UV detection

Figure 8 shows the time-dependent photocurrent of Ag/ZnO/Ag upon UV illumination in the air at room temperature. The behavior of the pure and Co-doped films is similar where fast increase during light ON state and slow exponential decrease at light OFF state. In bulk materials, the photo generation of charge carriers (electrons and holes) occurs with light illumination and annihilates by recombination after the light is turned off. But in thin films and nano-materials, due to their high surface-to-volume ratio, the adsorbed species onto the surface of the materials play an essential role. For ZnO thin films, the process is highly affected by the adsorption/desorption of oxygen or water molecules onto the surface. The adsorption species on the film surface reduce the available free electrons which decrease the conductivity of the film [27]. Also, adsorbed ions on the

Fig. 6 Optical transmission spectra of pure and Co-doped ZnO thin films

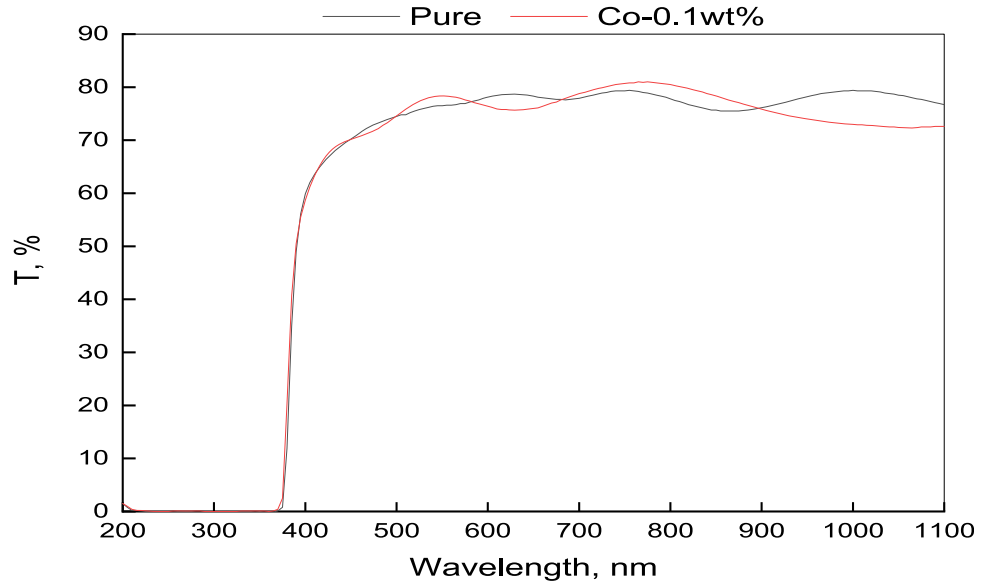
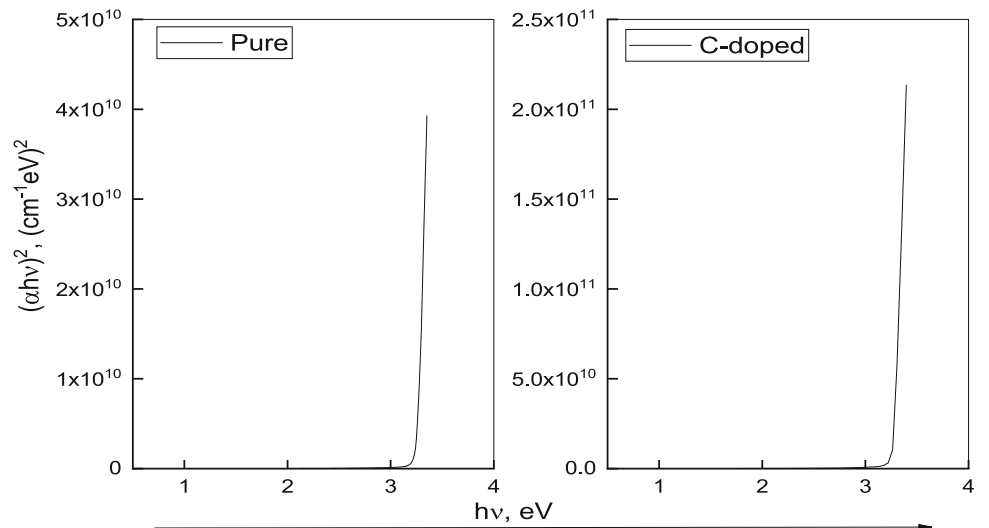


Fig. 7 Tauc's plot for deposited films



surface of ZnO reduce the mobility of the remaining electrons creating a depletion layer near the surface of the film [28]. Upon illumination with photo energy higher than the band gap value, the photo-generated holes migrate to the film surface which neutralizes the charged adsorbed ions onto the surface liberating the bound electron which increases the conductivity and the passing current. It is also observed that the dark current of the Co-doped film is lower than the pure film which indicated the decrease in film conductivity upon doping [29, 30].

Figure 9 shows the incremented part of the photocurrent at an applied voltage of 2 V for pure and Co-doped films. As shown in the figure the pure film shows an exponential increase in the photocurrent which indicates a single mechanism responsible for the photodetection process. While for the Co-doped film, a fast increase in the current is observed followed by a slower linear increase. Such two different mechanisms in the doped film could be attributed to the significant difference in the mobilities of electrons and holes. The fast increase could be attributed to the

Fig. 8 Photocurrent variation against time with light on and off

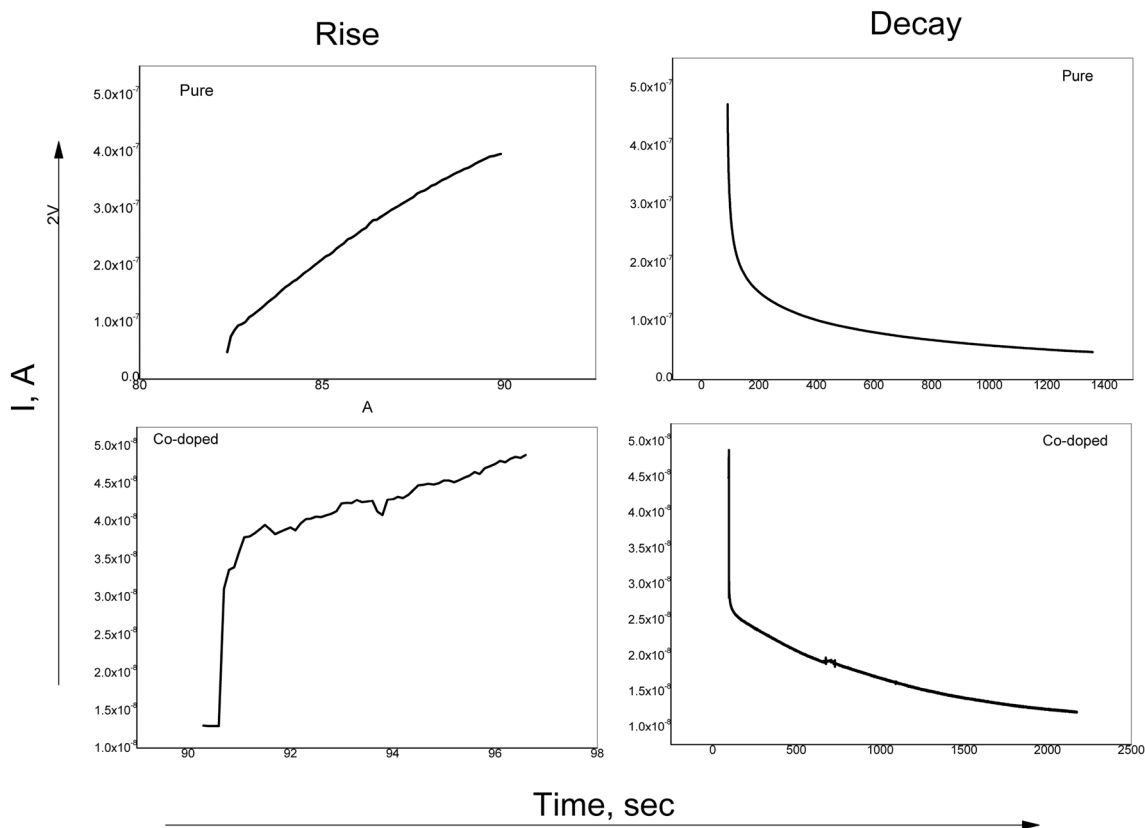
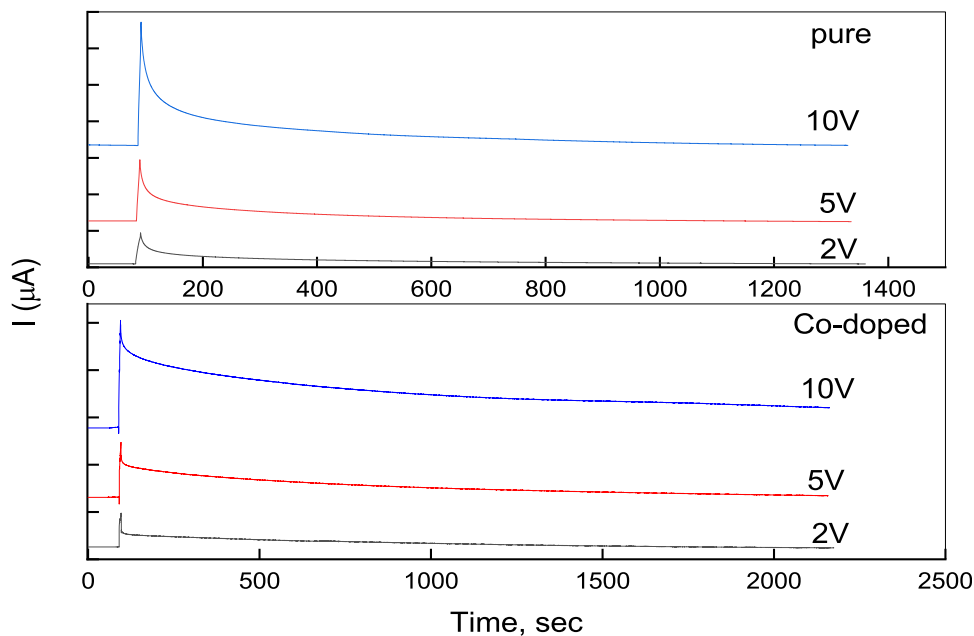


Fig. 9 Response and decay of photocurrent for pure and co-doped films at applied voltage 2 V

electron-hole pair generated upon absorption of UV light and the slow increase in current could be attributed to the interaction of the generated holes

with the adsorbed species onto the surface of the film. For pure film at all applied voltages, the raised behavior can be fitted with an exponential associated

function $[I = K + I_1(1 - e^{-\frac{t}{\tau_1}}) + I_2(1 - e^{-\frac{t}{\tau_2}})]$. Such behavior was recorded by Panda et al. [31]. But in the report of Law et al. [32], the rising behavior was found to follow a single-order exponential function. While Co-doped films are not fitted with the same function. Figure 10, shows the decay behavior of the current after the light is turned off. As shown in the figure, the pure film shows a single decay behavior which can be fitted with second-order exponential function $[I = K + I_1e^{-\frac{t}{\tau_1}} + I_2e^{-\frac{t}{\tau_2}}]$ [31]. But the Co-doped film shows a fast decrease in the current followed by an exponential decay which can be expressed by the same second-order function. The fast decay could be attributed to the fast recombination of the electron-hole pair, and the trapping of the free electrons at the Co trap centers formed upon doping or adsorption of water molecules onto the surface. The adsorption of water onto the film surface is known to shorten the current decay process which results in reducing the decay time [31]. The exponential decrease in the photocurrent is a result of the re-adsorption of the oxygen molecules on the surface.

The response time is known to be the time taken by the photocurrent to increase from 10 to 90% of its maximum value while the decay time is known to be the time taken by the photocurrent to reduce from 90 to 10%. These two times are estimated based on recorded data shown in Fig. 6. Figure 9 shows the variation of the response time and decay time at different applied voltages for both films. As shown in

figure, pure film exhibits a reduction in the response time from 7.8 at the applied voltage of 2 V to 5.3 and 4.7 s at 5 and 10 V, respectively. Response time of ZnO photodetectors has been recorded in many studies which show different values depending on the structure of the films (phase, defect concentration) and the design of the device itself. Table 2 shows recorded values of response/decay time from published materials.

Upon doping the response is faster for raise time with value recorded as 4.17 s, 4 s, and 4.5 s at 2 V, 5 V, and 10 V applied voltages, respectively. Thus, despite the reduction in the electric current value, the raise time has been reduced which means a faster response of the doped films compared to pure ones. On the other side, the decay time shows much longer time values. The pure ZnO film recorded 412 s decay time at applied voltage 2 V which decreases at higher applied voltage values. However, upon doping, the decay time was found to increase significantly to record 936 s, 1357 s, and 4904 s at applied voltages 2, 5, and 10 V. This means that the lifetime of free-charge carriers in doped films is longer than in pure films [41].

Besides the response and decay times, gain (G) is an important factor that can characterize the properties of photodetectors. It can be estimated using the following Eqs. [42, 43];

$$G = \frac{I_{ph}}{I_d}$$

Fig. 10 Raise and decay time for pure and co-doped ZnO films at different applied voltages

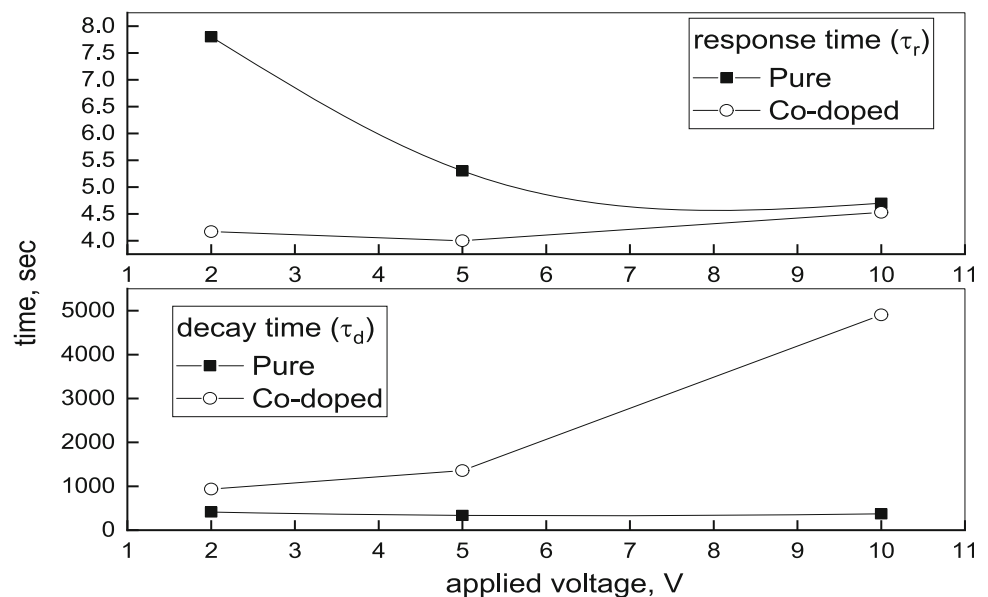
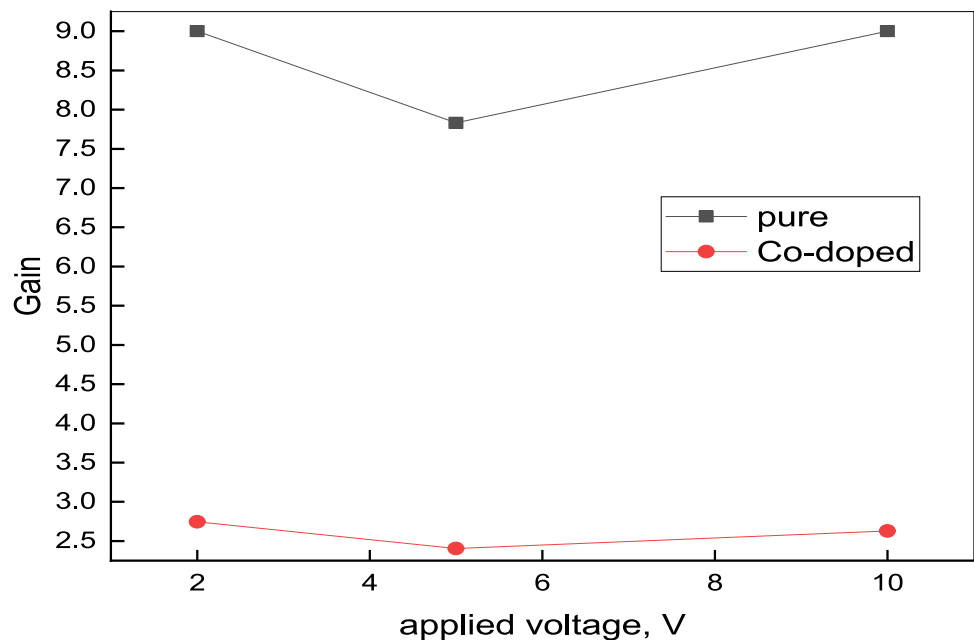


Table 2 Response and Decay time as recorded in published materials

Film	Response time	Decay time	References
Cd doped ZnO	22 s	37 s	[33]
Na: Cd co doped ZnO	16.1 s	46 s	
ZnO	24.6 s	46.2 s	[34]
Graphene (25%):ZnO	15.8 s	36.6 s	
Al/ZnO	–	700 s	[35]
Mn:ZnO	160 s	–	[36]
ZnO	4 ms	6 ms	[37]
ZnO	20 ns	250 ns	[38]
ZnO	10 ms	Several hours	[39]
ZnO	–	> 12.9 ks	[40]

Fig. 11 Gain value for pure and co-doped films at all applied voltages

where I_{ph} is the photocurrent and I_d is the dark current. Gain describes the photocurrent to dark current ratio. Figure 11 shows dependency of gain value on applied voltage for both deposited films. The reduction in the gain upon Co doping could be attributed to the smaller photocurrent in doped film than pure one. This could be attributed to the mechanism of electron excitation in Co-doped ZnO. The photoconductivity in Co-doped ZnO is a result of ${}^4A_2 \rightarrow {}^4T_1$ transition d-d excitation state as stated by Johnson et al. [44]. Upon Co doping the conduction band edge which raises the $Co^{2+/3+}$ ionization energy relative to the ${}^4T_1(P)$ state [44, 45] which become more localized. This makes electron transfer from Co^{2+} to the conduction band less favorable and reduces the photocurrent significantly.

As shown in the figure the gain value in each film decreases at applied voltage 5 V and are nearly constant at 2 and 10 V, in both films. The gain also can be defined as the ratio of the hole (minority charge carrier) lifetime (τ_p) and transit time (τ_t), $G = \frac{\tau_p}{\tau_t}$ [38]. As shown in Fig. 10, the gain of the pure film is higher than Co-doped one. This could be attributed to smaller electron mobility (μ_n) and the hole lifetime (τ_p) upon increasing the applied voltage. This conclusion is based on the relation between the gain and the other parameters according to the relation [46];

$$G = \tau_p \mu_n V / L^2$$

where L is the electrode separation distance and V is the applied voltage. In this work the applied voltage is maximum at 10 V value. This lead to a small electric field inside the film material and results no

change in the mobility value. Sato et al. [47] studied the dependency between electron mobility and the electric field, they found a significant increase in the electron mobility value upon applying a high electric potential/electric field. The used potential difference in this study is 300 V and higher. In another study, the variation of the electron mobility was found to change at high applied voltages in the range of kilo volt as studied by K. ALFARAMAWI [48]. As the used potentials in this study are very small compared to these studies, we consider the electron mobility to be constant in each deposited film. Accordingly, the observed reduction in the current gain factor upon increasing the applied voltage could be attributed to the reduction in the hole lifetime value.

3 Conclusion

In the present study, we successfully prepared hexagonal nano-sheet thin films of pure and Co-doped ZnO thin films. Mixed ZB and Hexagonal phases were recorded based on XRD results with almost constant crystallite size between 14 and 16 nm. Film thickness was estimated from the interference fringes recorded in the transmission spectra. Upon doping the thickness was found to decrease by half value compared to the pure film. The irregular hexagonal formed may create some porosity in the material. Optical measurement show no significant change in the band gap value which changes from 3.26 to 3.24 upon Co doping. The response time was found to reduce upon Co doping which recorded a minimum value of 4 s for Co-doped ZnO films at 5 V applied voltage. On the other hand, the decay time for Co-doped film is much larger than for pure film. The gain value of all films was found to reduced upon co doping which attributed to the possible reduction in the carrier mobility or their life time.

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Author contributions

All authors contributed to the study conception and design. AAA involved in experimental design, methodology, analysis and manuscript writing. AM and AM Saad performed data analysis and drafting. MA-Do and NSAE-G involved in drafting and research funding. All authors read and approved the final manuscript.

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Data availability

The data used in research is obtained from experiments as mentioned in Experimental Section. Data will provide data if proper request is received. Graph in the manuscript also represents the data.

Declarations

Competing interests The authors have no relevant financial or non-financial interests to disclose.

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PAPER

Physical properties of Ni: Co₃O₄ thin films and their electrochemical performanceRECEIVED
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22 March 2023Mahmoud El-Araby¹, Moatasem Mostafa Khalefa², Ayan Mukherjee³, M A Mohaseb⁴ and Ahmed A Aboud^{1,*} ¹ Department of Physics, Faculty of Science, Beni-Suef University, Beni-Suef, Egypt² Mining, Metallurgy and Petroleum Engineering Department, Faculty of Engineering, Al-Azhar University, Qena – 83511, Egypt³ Dept of Physics, College of Commerce, Arts & Science, Patliputra University, Patna, 800020, India⁴ Department of physics, Faculty of Applied Science, Umm-Al-Qura University, Mecca, Saudi Arabia

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Keywords: cobalt oxide, thin film, Ni-doping, electrochemical properties

Abstract

In this research work, we have deposited cobalt oxide as pure and Ni-doped thin films using spray pyrolysis. The concentration of Ni has been changed from 0 to 6 wt% in all films while other deposition parameters are fixed. The characterization of deposited films has been done using X-ray diffraction (XRD), energy dispersive x-ray spectroscopy (EDX), x-ray photoelectron microscope (XPS), scanning electron microscope (SEM), and optical spectroscopy. The XRD results confirm the formation of Co₃O₄ as the low-temperature stable phase of cobalt oxide and the successful doping with nickel. The XRD also shows the preferred orientation of growth of film is along the (1 1 1) plane and the crystallite size was found to decrease with increasing Ni content. The SEM micrograph of the deposited film surfaces revealed that the samples are porous and in some parts of the sample, the particles are agglomerated due to doping. The Ni doping was confirmed by both EDX and XPS. The Ni concentration was found to increase according to dopant concentration. The XPS data of the 4 wt% film has been recorded which confirms the existence of Ni⁺² in the deposited films. Both optical transmission and reflection spectra have been recorded using a spectrophotometer. The band gap values have been found to decrease upon Ni-doping. The electrochemical properties of the pure and nickel-doped cobalt oxide films were measured by cyclic voltammetry (CV), galvanostatic charge-discharge (GCD), and electrochemical impedance spectroscopy (EIS) in 0.3 M KOH electrolyte. The specific capacitance of 4 wt% Ni doped Co₃O₄ was found to be 804 Fg⁻¹ at a 2 mVs⁻¹ scan rate which is 90% higher than pure films. The important property of this material is that it shows excellent retention of 96% and remains almost constant for 10000 cycles. The impedance analysis reveals that 4 wt% Ni doped cobalt oxide film has the lowest R_s value of 0.2 Ω cm⁻² and lowest R_{CT} value of 0.05 Ω cm⁻² in comparison to other films which have excellent super-capacitive nature. These outstanding electrochemical properties of 4 wt % Ni-doped Co₃O₄ thin film have made it a potential candidate for anode material in supercapacitor devices.

1. Introduction

With the increasing demand for energy due to the increase in world population, the sources of conventional energy will not be able to meet this in near future. So, interest in green technology is growing among every stakeholder. But we cannot make it popularize until a low-cost non-conventional energy system is developed. The main challenge for this is its storage capacity. A renewable energy source with an excellent storage system can be a game changer once a decent storage material is fabricated [1, 2]. Batteries have led the sector for a few decades but batteries alone cannot provide a total solution to the limitation of energy storage systems. Nowadays, electrochemical supercapacitors are gaining interest among energy storage systems as a result of their different advantages including high power density, good energy density, longer cycle life, excellent reversibility, and rapid

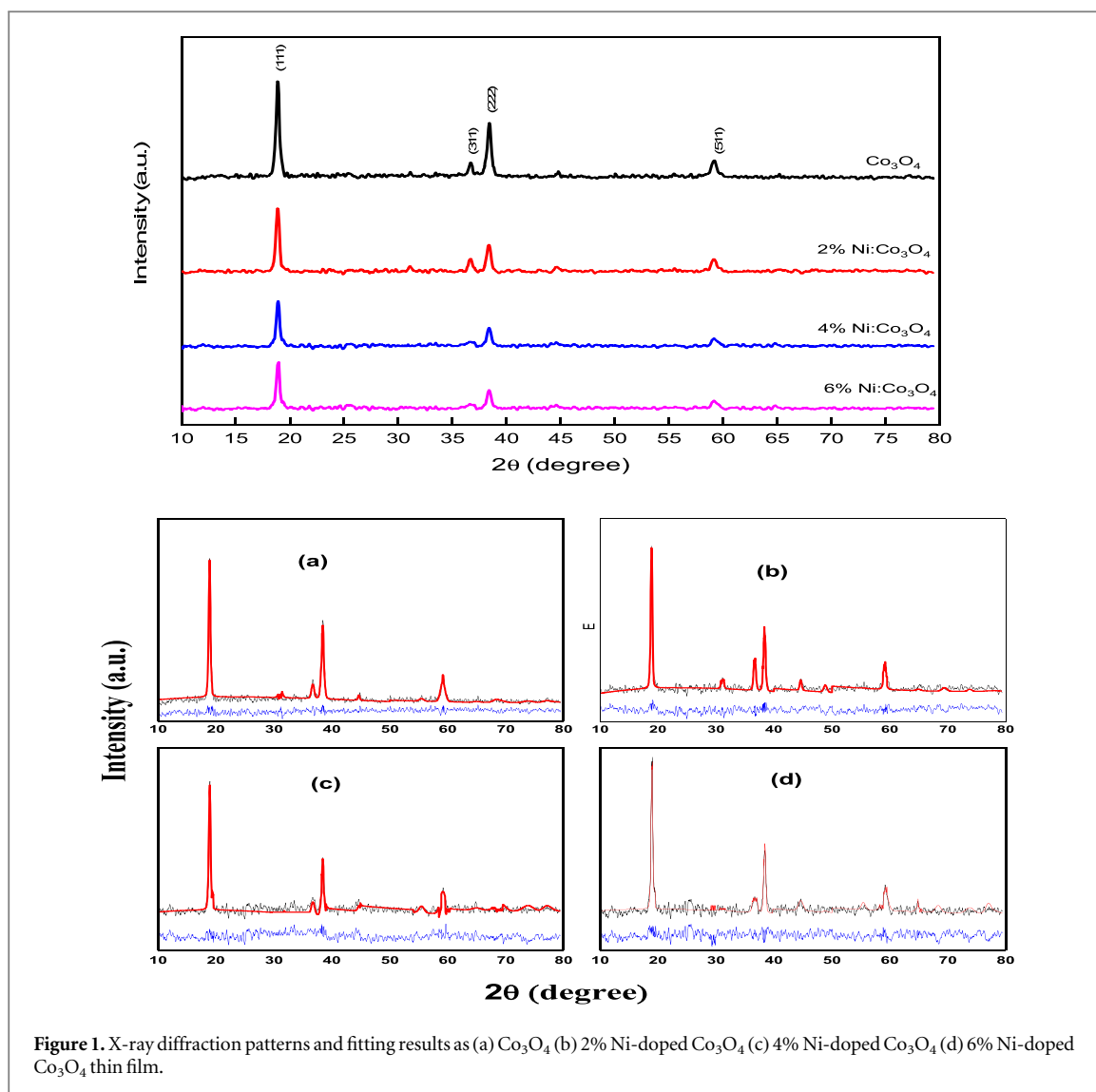
charge-discharge capability. It is widely used by the consumer in hybrid or electric vehicles, electronics systems, memory backup systems, aircraft, and smart grids [3, 4]. Supercapacitors are classified into two categories based on their storage mechanism, electrochemical double-layer capacitors (EDLC) and pseudocapacitors. The EDLCs store charges via an electric double layer also known as the non-redox process whereas pseudocapacitors store charges with help of the redox process. At electric double-layer charge storage arises from the accumulation of electronic and ionic charges at the electrode/electrolyte interface and no charge transfer takes place. Mainly carbon-based materials with a large effective surface area such as activated carbon, graphene, CNT, etc are used largely as the electrode for EDLCs. Metal oxides such as RuO_2 , NiO , Fe_2O_3 , MnO_2 , Co_3O_4 , TiO_2 , ZnSe/FeS_2 and conducting polymers are used as electrode materials in pseudocapacitors [5–12].

But still, now there are a lot of challenges to developing energy storage systems having quite low energy density, stability, capacity retention, and high cost of manufacturing [13, 14]. Great research effort has been intended to exaggerate the energy density of supercapacitors without forfeiting their high-power capability to reach the expected levels of batteries. Therefore, it is very much critical to develop high-performance electrode materials. So, intensive research for efficient energy storage electrode material is in high demand. Transition Metal oxides (TMO) have gained a lot of interest in the previous decades among researchers due to their variable oxidation states originating from the incomplete d sub-shell that permits them to show an outstanding blend of structural, electrical, and electrochemical properties [15].

The variable oxidation states of TMOs help them to transfer multiple electrons which leads to extending their discharge profile by fast faradaic redox reactions. This further enhances its energy density. TMO-based composites have excellent electronic conductivity, efficient charge storage capability, better cyclic stability, and rate capability. Nanosized TMOs show outstanding properties than their bulk counterparts due to an increase in effective surface area for nanoscale morphology and a high surface-to-volume ratio. This also improves the specific capacitance, and energy density and fastens the charge-discharge rate. This has made them attractive for supercapacitor electrode materials. TMOs are widely used in catalysis, semiconducting devices such as energy-storing devices, solar cells, thin film transistors, electrochromic sensors, etc [15–17]. But till now we need to address the major challenges incorporated with TMO materials like poor electrical conductivity, low surface area, effective pore size, comparable low cycle capability, and power density to improve the electrochemical properties.

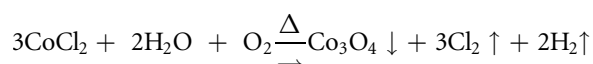
Among different transition metal oxides (TMO), cobalt oxide is one of the most important spinel oxides having cubic structure with two oxidation states of cobalt denoted by Co^{+2} and Co^{+3} which represent tetrahedral and octahedral coordination with oxygen atoms respectively [18]. It has mainly three phases termed cobaltous oxide (Co_3O_4), cobaltic oxide (Co_3O_4), and cobaltous oxide (CoO). The Co_3O_4 and CoO phases have been studied by different researchers widely due to their interesting electronic and unique magnetic structures [19]. Cobalt oxide is known to have a very high theoretical specific capacitance of 3650 F/g, low cost, natural abundance, and ease of synthesis. Co_3O_4 is known to be most stable in the temperature range below 800 °C [20]. It has been intensively studied by researchers due to its electrical conductivity, electro-active sites, specific surface area, and chemical stability. The designing of Co_3O_4 material in terms of its element composition, doping material, the fabrication of different nanostructures, their electroconductivity, and oxygen vacancies have improved its both physical and chemical performances to get excellent electrode material. It can also be used as an electrocatalyst for an efficient hydrogen evolution reaction (HER) [21]. The unique features of doped metal oxides like Co_3O_4 have led to great advances in pseudo-supercapacitor electrodes and have steadily upgraded the energy density of the material to the level of battery without losing the practical capacitor power delivery. So, supercapacitors bridge the gap between batteries and capacitors [22] Co_3O_4 has great potential to replace RuO_2 which is extensively used as pseudocapacitive material. This inexpensive, environment-friendly material has several stable oxidation states and subsequent high theoretical specific capacitance which had made it excellent for energy storage applications. The effective capacitance contribution comes from the formation of transition metal hydroxides in the course of the charging process in alkaline electrolytes. So Co_3O_4 is an important material that exhibits excellent electrochemical properties. In recent work, we have chosen nickel doping because the atomic radius of nickel is nearly equal to that of cobalt. The Ni doping in Co_3O_4 can create many defective sites [23]. A trivial variation in doping concentration can cause very significant changes in different properties. Co_3O_4 has been synthesized through various processes such as spray pyrolysis [24], chemical vapor deposition [25], sol-gel method [26, 27], SILAR [28], and MOCVD [29]. The structural properties along with chemical composition and surface morphology depend on the variation of deposition parameters [30].

In this work, we have synthesized pure Co_3O_4 thin films and doped them with nickel to investigate their various properties. The effect of doping percentage on the properties of cobalt oxide (Co_3O_4) thin films is analyzed using various techniques including electrochemical characterization. For the prepared samples, microstructure, morphology, and electroconductivity play a vital role in their excellent behavior. Thus, the lucid design of cobalt oxides with control porosity and enhanced electroconductivity would help us to achieve the expected performances.



2. Experimental work

In this work, all films were deposited using the spray pyrolysis technique with the local arrangement. The sample films were deposited over glass substrates at a constant temperature of 400°C with variable Ni concentrations. For pure Co_3O_4 films, a solution of 0.2 M has been prepared using cobalt chloride by stirring it for 15 min until it is clear. The expected reaction for Co_3O_4 formation is [31];



For Ni doping a weighted amount of nickel chloride has been added to the starting solution which forms 2, 4, and 6 wt % from the original cobalt chloride salt. Other parameters like air flow rate and nozzle-to-substrate distance were kept constant at 201 min^{-1} and 35 cm, respectively. For electrochemical measurement samples were deposited onto stainless steel substrates which have 1.3 mm thickness. The structural and elemental composition were extensively studied using Joel scanning electron microscope with an attached EDX unit. Phase identification of the deposited films onto glass substrates was performed using Panalatyca x-ray diffractometer in the angle range of 10–80 degrees. T70 spectrophotometer was used to study the optical parameters of the as-deposited films for the spectral range 200–1100 nm. Three electrode cell configurations have been used to measure the supercapacitor performance of the samples for all Ni-concentrations. The measurement took place into 0.3 M NaOH solution with the deposited films deposited over stainless steel substrate which was connected as working electrode, Pt and Ag/AgCl act as counter electrode and reference electrode, respectively.

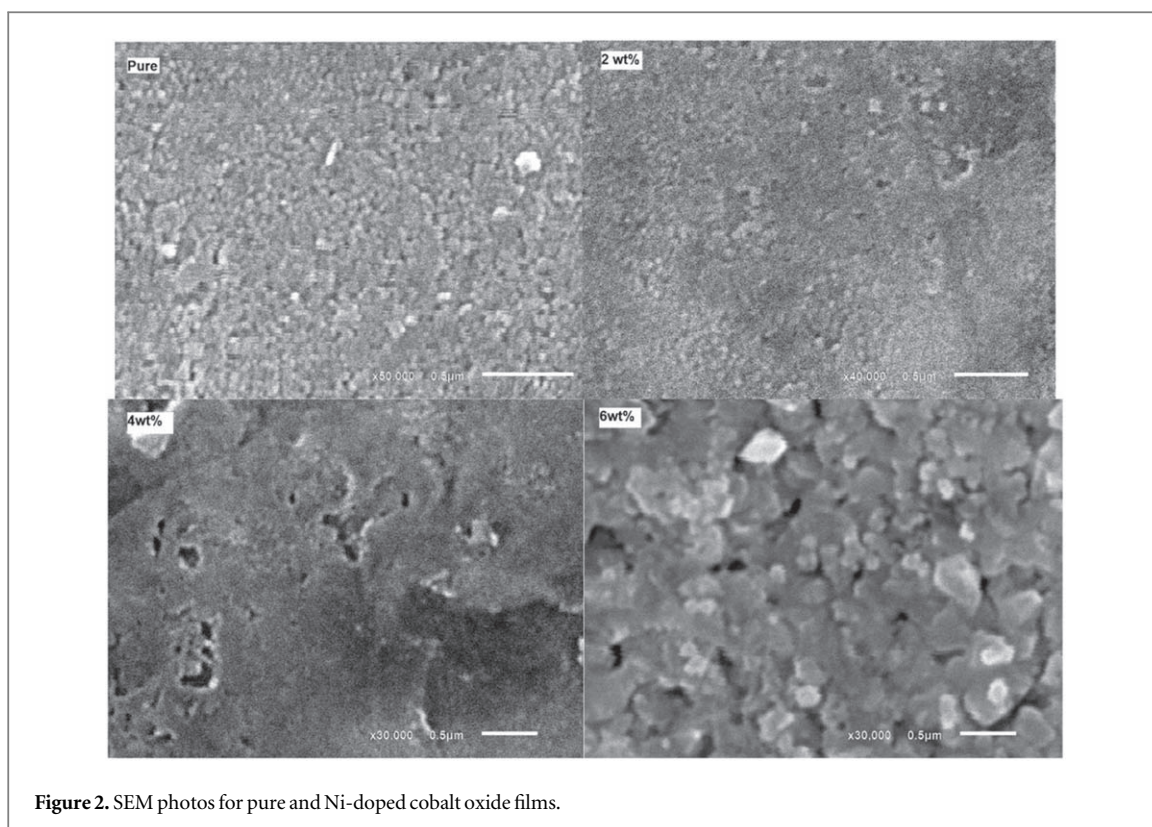


Figure 2. SEM photos for pure and Ni-doped cobalt oxide films.

Table 1. Composition, parameters from Reitveld refinement.

Sample Name	R_{wp} (Weighted Residual error factor)	R_{exp} (expected error factor)	GoF (goodness of fit)	Lattice parameter in Co_3O_4 a	Average Crystallite size (nm)	Microstrain
Co_3O_4	13.25	11.76	1.12	8.121	71.2	0.00016
2% Ni: Co_3O_4	12.24	11.13	1.09	8.101	68.23	0.00052
4% Ni: Co_3O_4	9.652	8.921	1.08	8.065	62.3	0.00076
6% Ni: Co_3O_4	11.23	10.57	1.06	8.162	65.3	0.0006

3. Results and discussion

Structural study was done with help of x-ray diffraction for all samples. Figure 1, shows the diffraction patterns for all deposited films and fitting results. The characteristic diffraction peaks at 19.3° , 31.5° , 37.1° , 39.0° and 59.7° , indicating the films are polycrystalline in nature. The inter-planar spacing (d) corresponding to the diffraction planes (111), (220), (311), (222), and (511), are well matched with the standard JCPDS data card, JCPDS 42–1467 of Co_3O_4 . It is found that the diffraction angle of samples with Ni doping shows no obvious difference except a slight variation at peak intensity. Besides this, there is no trace of any other diffraction planes due to CoO or Co_2O_3 which reveals the formation of highly pure Co_3O_4 . XRD pattern also confirms that the crystallization is of spinel-type cubic structure (Fd3m space group) with preferential orientation along the (111) direction. Many researchers suggested the (311) plane as the preferred one for their Co_3O_4 sample obtained by different synthesis techniques [32, 33].

The XRD data was also used for Rietveld refinement using MAUD software [34]. In figure 1, the measured diffraction patterns are represented by black lines and the calculated data are represented by solid red lines. The blue spectra give the plot of difference between the measured and the calculated diffraction patterns. The estimated crystallite size from the data shows decreasing tendency from 71.2 nm for the pure sample to 62.3 nm for 4 wt% Ni doped Co_3O_4 . Further, it increases to 65.3 nm for 6 wt% Ni doped sample. It is clear from the figure that a trend of broadening of the diffraction peaks with increasing in doping amount is observed up to 4 wt%

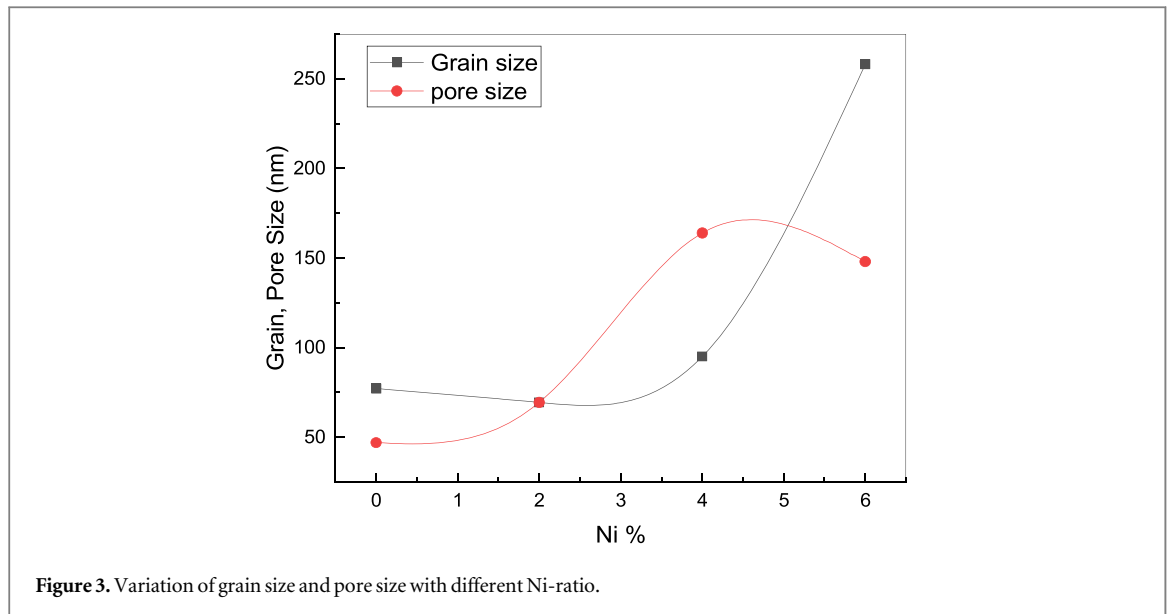


Figure 3. Variation of grain size and pore size with different Ni-ratio.

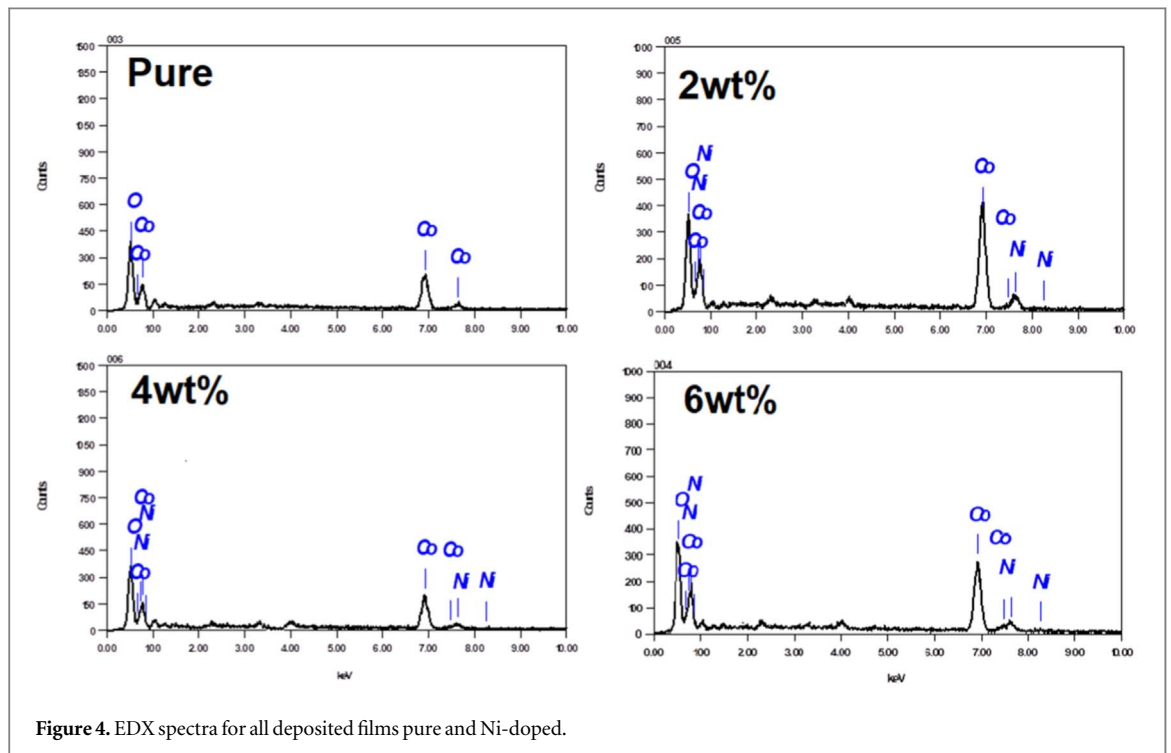
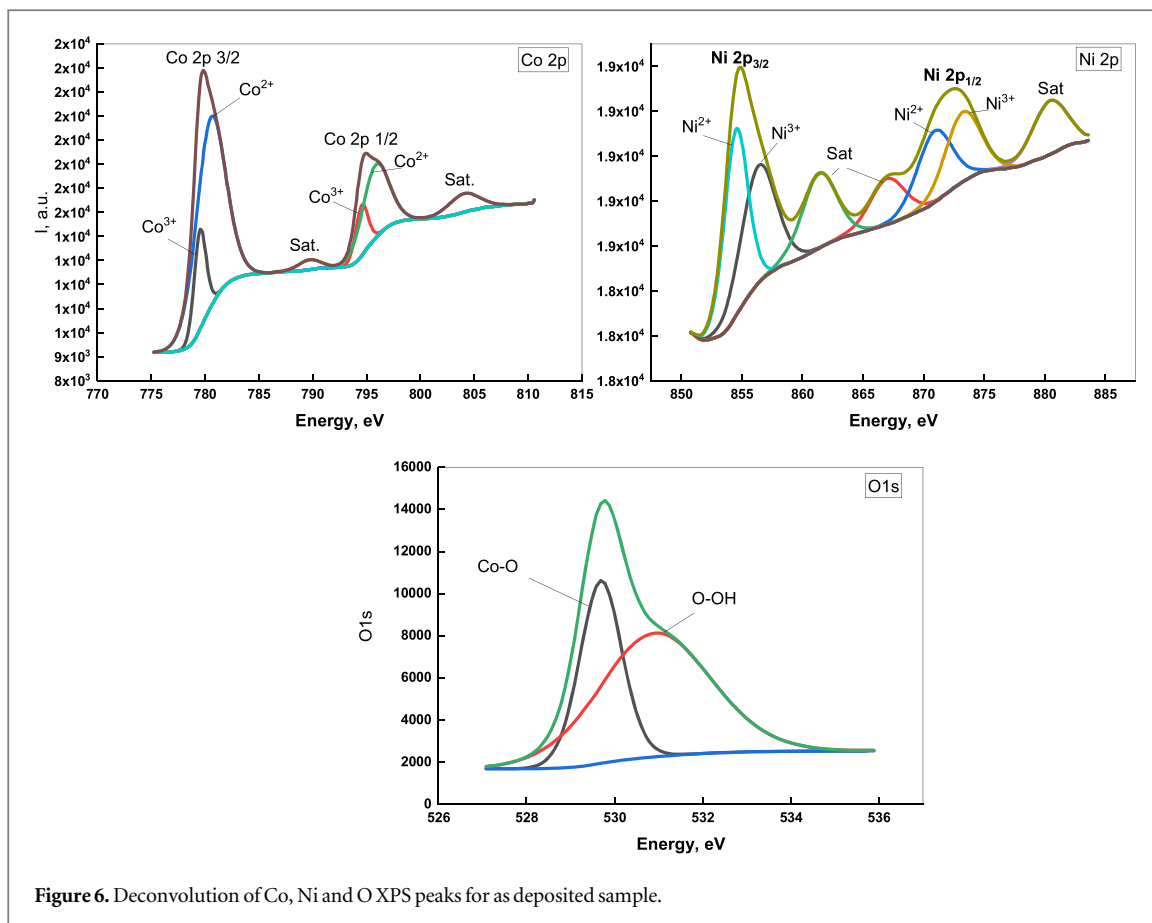
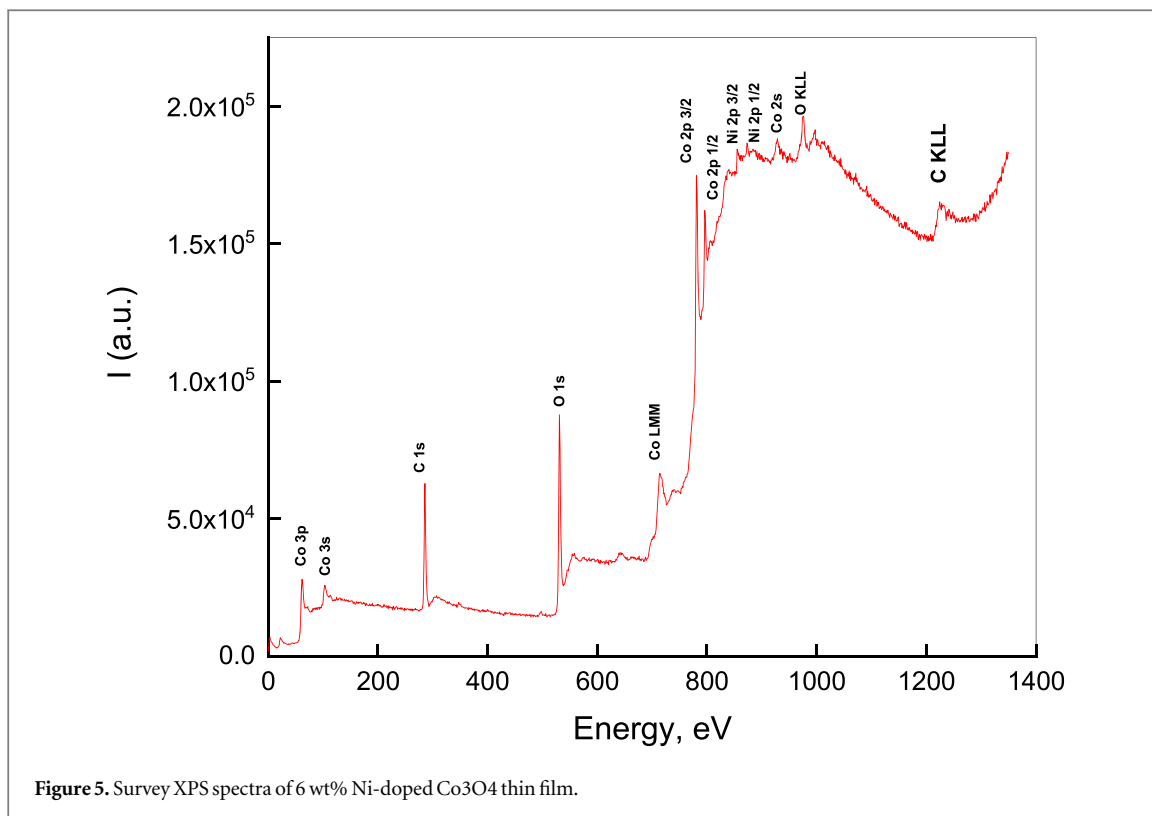


Figure 4. EDX spectra for all deposited films pure and Ni-doped.

doped same, above which the width is reduced. As a consequence, the particle size decreases with the doping percentage up to 4 wt% and then there is an opposite tendency. Similar insight was attributed to particle size decrease due to enhance molecular concentration at the surface. Table 1 shows the change in particle size and average microstrain with doping percentage for this sample. Microstrain was calculated using the formula $\epsilon = \frac{\beta}{4 \tan \theta}$ where $\epsilon = \text{microstrain}$, $\beta = \text{fwhm}$ and $\theta = 0.5 \times \text{angle of peak position}$. It is found to vary in a contrary manner. The maximum allowed percentage of error for Rietveld refinement is limited to $\pm 5\%$. Therefore, the decrease of particle sizes up to 4% doping amount may be due to strain enhancement which further leads to better polycrystallinity in the materials.

As shown in figure 2 surface texture of undoped films surface shows small grains with a little number of big agglomerates formed on the surfaces. ImageJ program has been used to estimate the average size which was found to be 77.2 nm. With 2wt% Ni doping, the film shows finer grain size having more tendencies for agglomerate formation. The average grain size was estimated to be 76.4nm. Further increase in the Ni-doping level increases the average grain size to 94.5 and 258.2 nm for 4wt% and 6wt%, films, respectively, as shown in figure 2. All estimated grain size values are higher than the calculated crystallite size values from the x-ray



diffraction pattern which can be attributed to the agglomeration in the deposited films. As shown in the SEM photo for 6wt% film the formed grains are very big compared to the pure film and all grains have a random shape and size distribution.

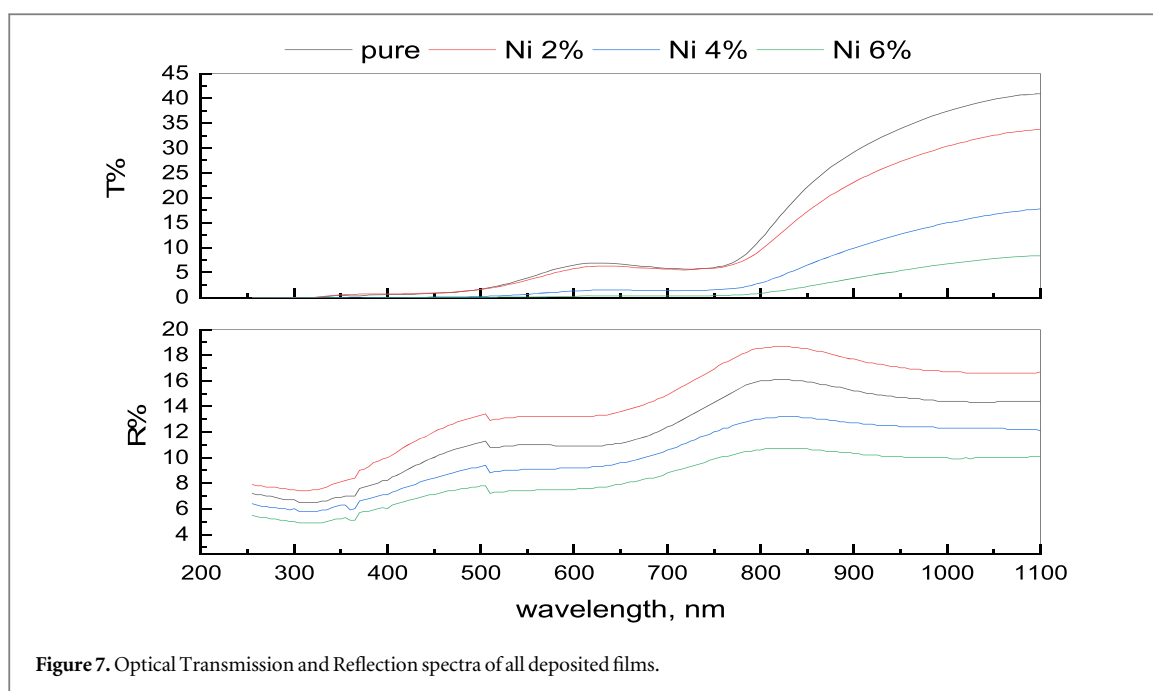


Figure 7. Optical Transmission and Reflection spectra of all deposited films.

Besides this inhomogeneity in the shape and size of the formed grains, all films surface shows pores in the surface. The pore size, which is indicated as the back grooves onto the surface, was analyzed using ImageJ software to determine its average size value. Grain size is the diameter of the grain of nanoparticles whereas porosity is void present per unit material volume. Pore size is the distance between the opposite wall of a pore. As pore size is void space, it is different from grain size. The shape of the pore influences electrochemical behavior. In the case of ideal structure grain size and pore size are independent of each other. But irregular arrangement and shape/size influence pore size. So, both of these parameters are essential to analyze the electrochemical behavior. Figure 3 shows the estimated average grain size and pore size for all films with variable I content. As shown in the figure the pore size continues to increase as Ni-concentration increases up to 4wt% in the starting solution. Then it decreases at Ni-concentration level 6wt%. Such pores nature of Co_3O_4 thin films has been recorded by T. A. Abbas *et al* [35].

EDX spectra of all deposited films are shown in figure 4. As shown elements of Oxygen, cobalt, and Ni has been recorded. Oxygen in all films gives clear peaks around 0.525 KeV. The observed overlap between the Co and Ni peaks can be attributed to the close peaks position of these two elements beside the low content of Ni in the obtained films. Ni mass concentration was varied from 0%, 1%, 2.5%, and 4.6% for pure, 2wt%, 4wt%, and 6wt% films, respectively. This increase in Ni content in the deposited films is a result of increasing nickel chloride weight % in the starting solution.

Figure 5 shows the XPS survey spectra of Ni-6wt% doped Co_3O_4 film in the binding energy range 0 to 1350 eV. As shown in the figure peaks of Co2p, Co3p, Co3s, and Co2s peaks had been recorded. Also, other peaks of Ni 2p, O1s, and C1s were recorded. Other Auger peaks for Co LMM, O KLL, and C KLL are shown in the figure. The existence ratios of different elements are found to be Co (12.43%), Ni (1.83%), O (33.93%), and C (81.81%) on the surface of the prepared films. The existence of carbon could be attributed due to the contamination of the film's surface from the atmosphere [36].

The deconvolution of Co2p, Ni2p, and O1s peaks are shown in figure 6. As shown in figure 6, Cobalt shows two main peaks recognized as Co 2p_{3/2} and Co 2p_{1/2} recorded at 779.87 and 795.05 eV, respectively. The separation between these two peaks is 15.18 eV which is slightly higher than what was recorded in our previous work [37] and lower than what was recorded by Jena *et al* [38]. It is also lower than the separation of Co2p_{2/3} and Co2p_{1/2} peaks in the CoO phase [39, 40]. Also, the separation energy between the Co2p_{2/3} and the satellite shake-up peaks is found to be 9.31 eV. The separation of these two peaks was recorded by other authors to be in the range of 5 eV. These two results confirm the existence of Co_3O_4 as a single phase in the deposited Ni- Co_3O_4 films. In this work, the ratio of $\text{Co}^{2+}/\text{Co}^{3+}$ oxidation states of cobalt was found to be 4.14 which is very high compared to the 0.5 ratios known for the normal Co_3O_4 phase [37]. In the work of Wu *et al* [41], this ratio increases to 1.76 under the action of annealing. This low content of Co^{3+} interprets the disappearance of the low energy band gap in the optical properties. The ratio recorded here is the highest recorded ratio. This small quantity of Co^{3+} in the deposited Ni 6wt% doping level could be the reason for vanishing the low energy gap in this film as we will see in the optical properties. Figure 6 shows the XPS spectrum of Ni ions in the deposited

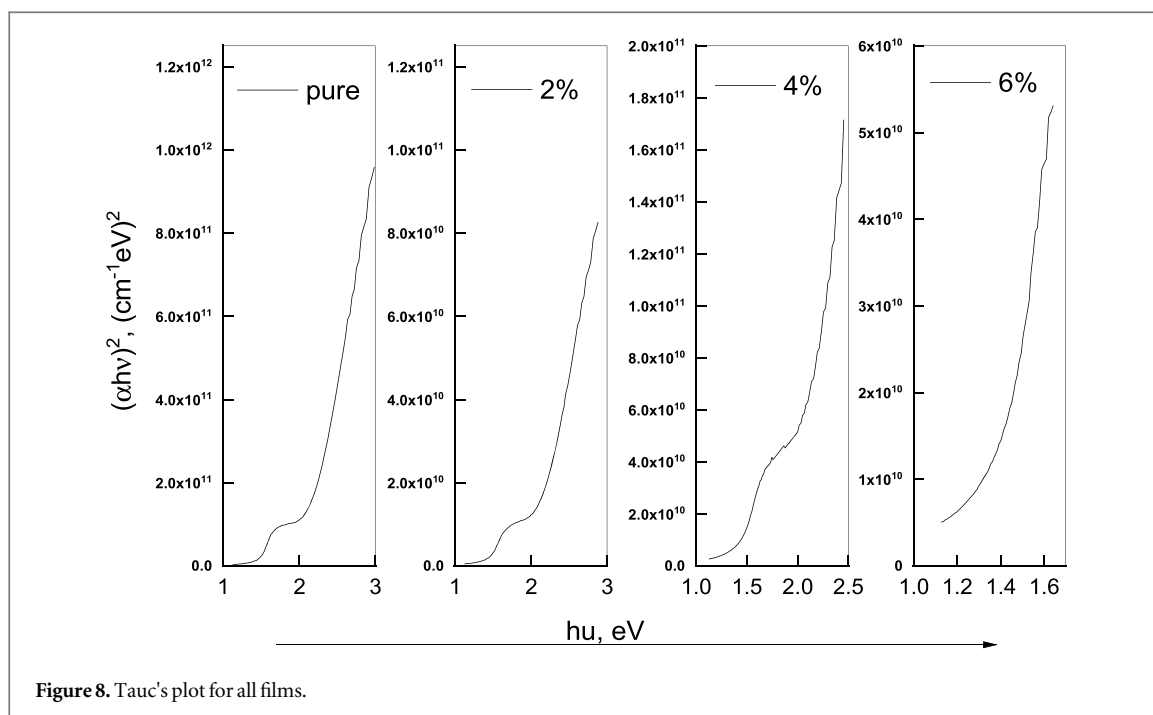


Figure 8. Tauc's plot for all films.

Table 2. Band gap values of all films.

film	High values(eV)	Low values(eV)
Pure	2.13	1.5
2%	2.06	1.42
4%	2.03	1.42
6%	—	1.39

films. As shown, two main peaks centered at 854.85 and 872.45 eV which attributed to Ni2p3/2 and Ni2p1/2, respectively [42]. The analysis of these two peaks shows the existence of Ni²⁺ and Ni³⁺ in the deposited films [43]. Satellite peaks for these two oxidations are also recorded. Two XPS peaks are recorded at 529.7 which is attributed to Co-O and another at 530.9 eV which belongs to adsorbed O-OH bond. Low intense C 1s spectra around 285 eV (figure 5) could be comprised of C=C, C-C, C-O, and O-C=O [33].

Figure 7 illustrates the transmission and reflection spectra of undoped (pure) and Ni-doped Co₃O₄ films onto glass substrates. As shown the transmission decreased as the Ni-content increased in the deposited films. Such a decrease in the transmission spectra pertained to the increase in the thickness of the films due to doping. The transmission of all films shows a continuous increase in the wavelength range above 800 nm. Also, spectra show a broad peak around 600 nm for pure, 2wt%, and 4 wt% Ni-doped films. This peak disappeared in 6 wt% Ni-doped films. This peak is a result of the complex band structures of Co₃O₄, not an interference peak. Such behavior has been recorded by Farhan *et al* [44], Abbas *et al* [45], and Abdelmoneim *et al* [37]. But the reflection of the 2 wt% Ni doped films is higher than the pure one. The other two films show lower reflection than the pure film.

To determine the band gap value, the recorded transmission and reflection spectra had been corrected to eliminate the contribution of the glass substrate. The correction process has taken place by recording the transmission and reflection spectra of the bare glass substrate, then the correct data for the film layer are calculated according to the following equations (1), (2) [46];

$$T_f(\lambda) = \frac{T_{\text{exp}} T_{\text{sub}} (1 - R_{\text{exp}} R_{\text{sub}})}{T_{\text{sub}}^2 - T_{\text{exp}}^2 R_{\text{sub}}^2} \quad (1)$$

$$R_f(\lambda) = \frac{R_{\text{exp}} T_{\text{sub}}^2 - T_{\text{exp}}^2 R_{\text{sub}}}{T_{\text{sub}}^2 - T_{\text{exp}}^2 R_{\text{sub}}^2} \quad (2)$$

where T_{sub} , T_{exp} , R_{sub} , and R_{exp} are the transmission of the bare substrate, the transmission of film on glass, the reflection of the bare substrate, and the reflection of film on the glass. The corrected values T_f and R_f are used to determine the band gap by using Tauc's equation, equation (3) [36];

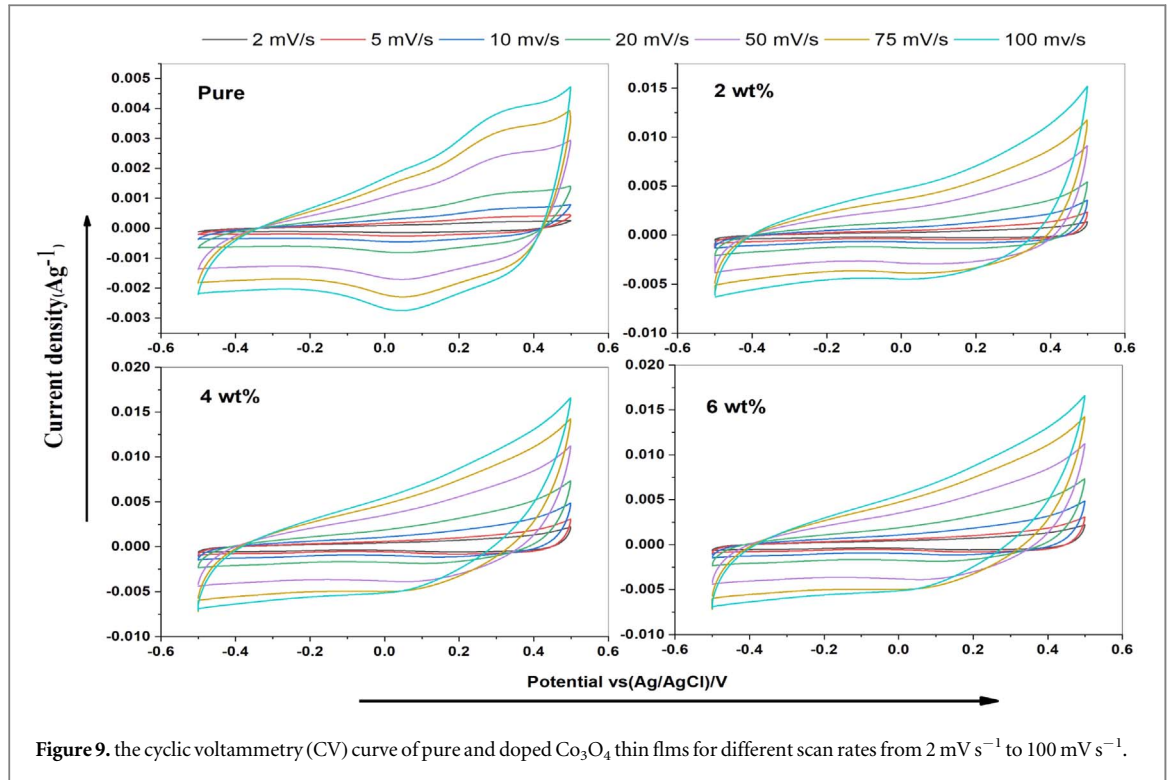


Figure 9. the cyclic voltammetry (CV) curve of pure and doped Co_3O_4 thin films for different scan rates from 2 mV s^{-1} to 100 mV s^{-1} .

$$\alpha = A \frac{(h\nu - E_g)^n}{h\nu} \quad (3)$$

where $h\nu$ gives the energy of incident photons, n denotes the exponent which depends on the transition type and A is a constant. In this work, the exponent n takes the value of 0.5 for direct allowed transition. Co_3O_4 thin films deposited by spray pyrolysis have been investigated for all possible values of exponent n in the work of Patil *et al* [47]. In that work, it was found that all exponent values give straight lines in Tauc's plots which explains the high absorption nature of Co_3O_4 .

Figure 8 shows the plot between $(\alpha h\nu)^2$ with $h\nu$ where the band gap values are estimated by extrapolation of the straight line to intersect with the x -axis. As shown in figure 8 all films, except 6wt%, shows two straight lines one in the low energy range and the other in the high energy range. Table 2 shows the recorded energy gap values for all deposited films.

As recorded in table 2 the band gap values for both regions decrease upon doping which may be due to decreasing $sp-d$ hybridization energy. The values of the pure cobalt oxide films are recorded to be 2.13 and 1.42 eV which decrease to 2.03 and 1.39 eV by doping. The higher band gap values are related to $\text{O}2-(\pi^* \Gamma)$ to $\text{Co}^{2+}(\sigma^* t_2)$ transition while the lower are related to $\text{Co}^{3+}(\pi^2 t_2)$ to $\text{Co}^{2+}(\sigma^* t_2)$ [45].

Cyclic voltammetry (CV) is used for long time as one of the most authentic methods to assess the electrochemical performance of super-capacitive electrode materials. Figure 9 shows the cyclic voltammetry (CV) curve of pure and doped Co_3O_4 electrode in 0.3M NaOH electrolyte solution with potential window -1 to 0.6 V (versus Ag/AgCl) at different values of scan rates from 2 to 100 mV s^{-1} . Both scan rates and operating potential windows play an important role to characterize the charge storage performance of the material. The shapes of the cyclic voltammetry curves are not perfectly rectangular which strongly specifies that capacitance is of pseudo-capacitance nature with a very fast charging-discharging rate. The increase in scan rate results in the increase of current density. This indicates that the redox processes are mostly governed by the insertion and de-insertion of the ions (H^+ and Na^+) in the Co_3O_4 electrodes. The almost symmetrical shape of the obtained CV curves over the entire range of scan rates makes it usable for excellent supercapacitor electrodes. The specific capacitance of all the samples was calculated from the graph using the following equation [48];

$$C_{SC} = \frac{1}{mv(V_b - V_a)} \int_{V_a}^{V_b} I(V) dV \quad (4)$$

where C_{SC} denotes specific capacitance and m gives the mass of the Co_3O_4 used as the surface of the electrode, v indicates the scan rate, $(V_b - V_a)$ is the potential window and I signify the current response of the Co_3O_4 electrode in 0.3 M NaOH electrolyte. It can be confirmed from the observations that the value of specific capacitance increases with the doping percentage up to 4% and thereafter diminishes. This can be encountered with high porosity of Co_3O_4 thin films with 4% doping, showing optimum access of electrode material of the

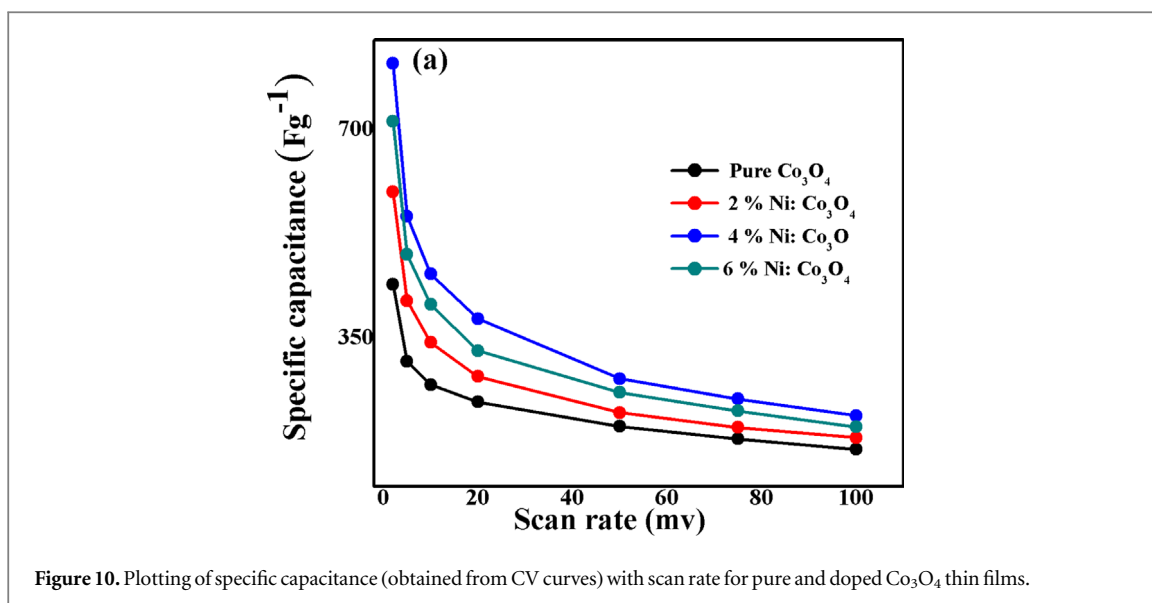


Figure 10. Plotting of specific capacitance (obtained from CV curves) with scan rate for pure and doped Co_3O_4 thin films.

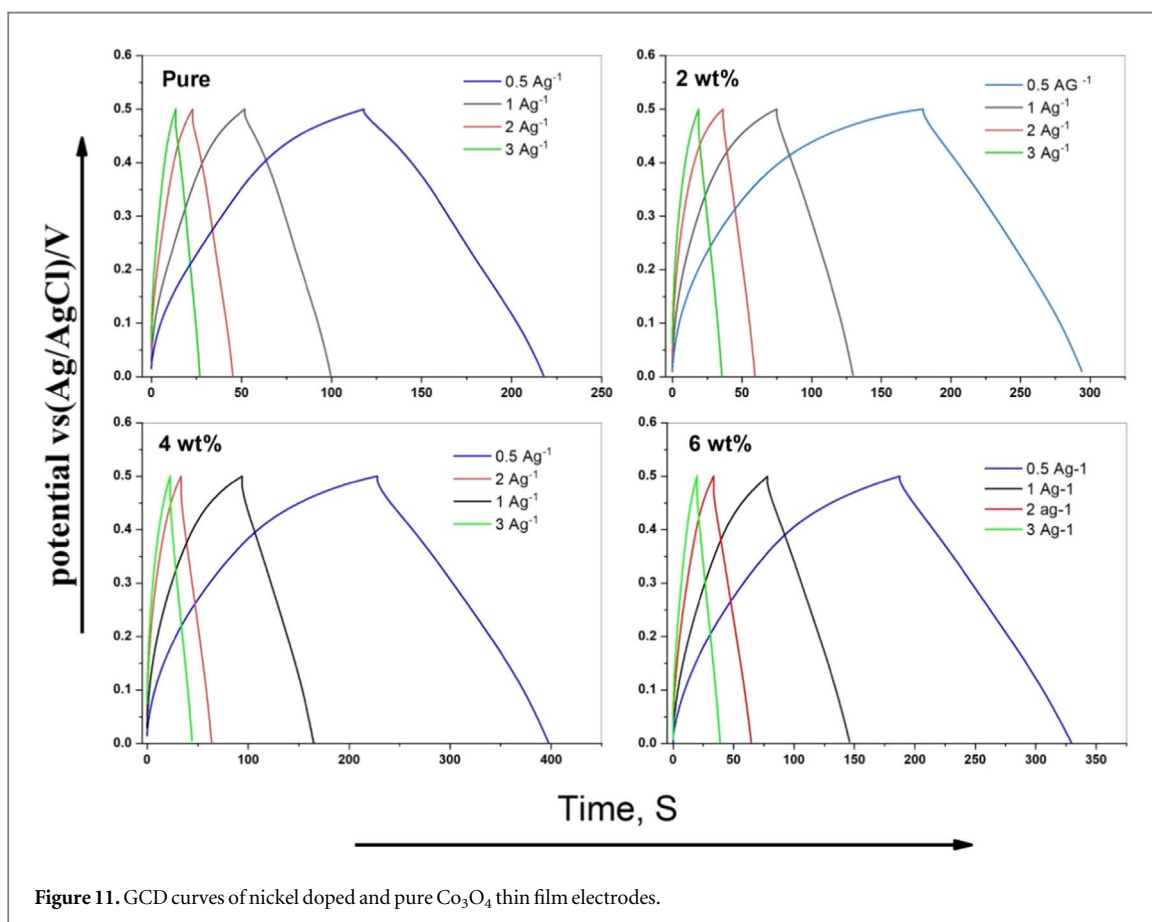


Figure 11. GCD curves of nickel doped and pure Co_3O_4 thin film electrodes.

Co_3O_4 electrode into the NaOH electrolyte. The improvement of charge storage capability with the increase of doping amount may be owing to the creation of more activation sites of Co_3O_4 and also enhanced mobility of electrolyte ions. The obtained maximum value of specific capacitance is about 811 Fg^{-1} at scan rate of 2 mVs^{-1} for 4% Ni-doped Co_3O_4 electrode. This value of specific capacitance is as per the reported literature [49, 50]. For the pure sample, there are some excess peaks. It has been found that nickel substitution improves cobalt-spinel oxide activity by enlarging its specific surface area, conductivity, and its roughness factor, which is also called the electronic and geometric effect [51].

Figure 10 depicts the change of specific capacitance with scan rates for all deposited samples. We can observe value of specific capacitance decreases with increasing scan rates. This may be due to the ion-exchange mechanism [52]. At low scan rate ions get adequate time to diffuse into electrode surface. But for high scan rate,

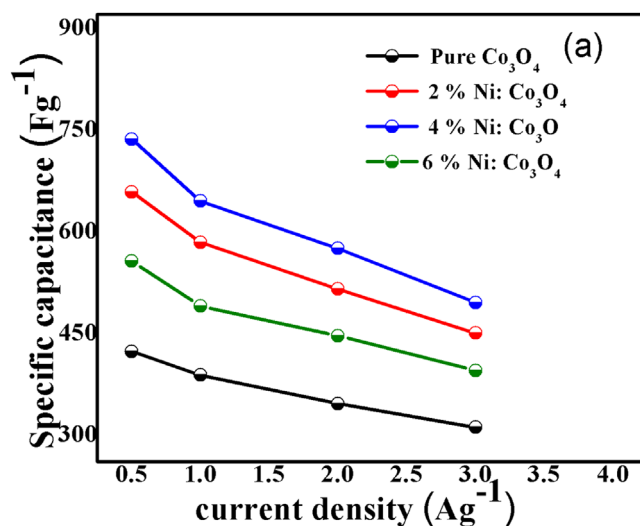


Figure 12. Variation of the specific capacitance with current density for nickel doped and pure Co_3O_4 thin film electrodes.

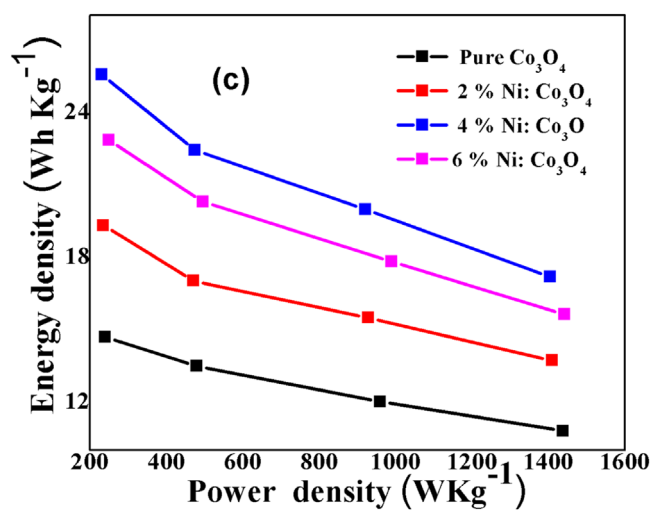


Figure 13. Ragone plot for nickel doped and pure Co_3O_4 thin film electrodes.

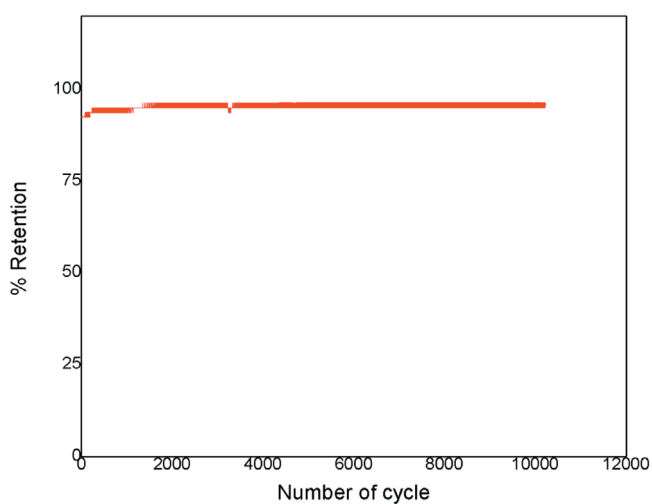
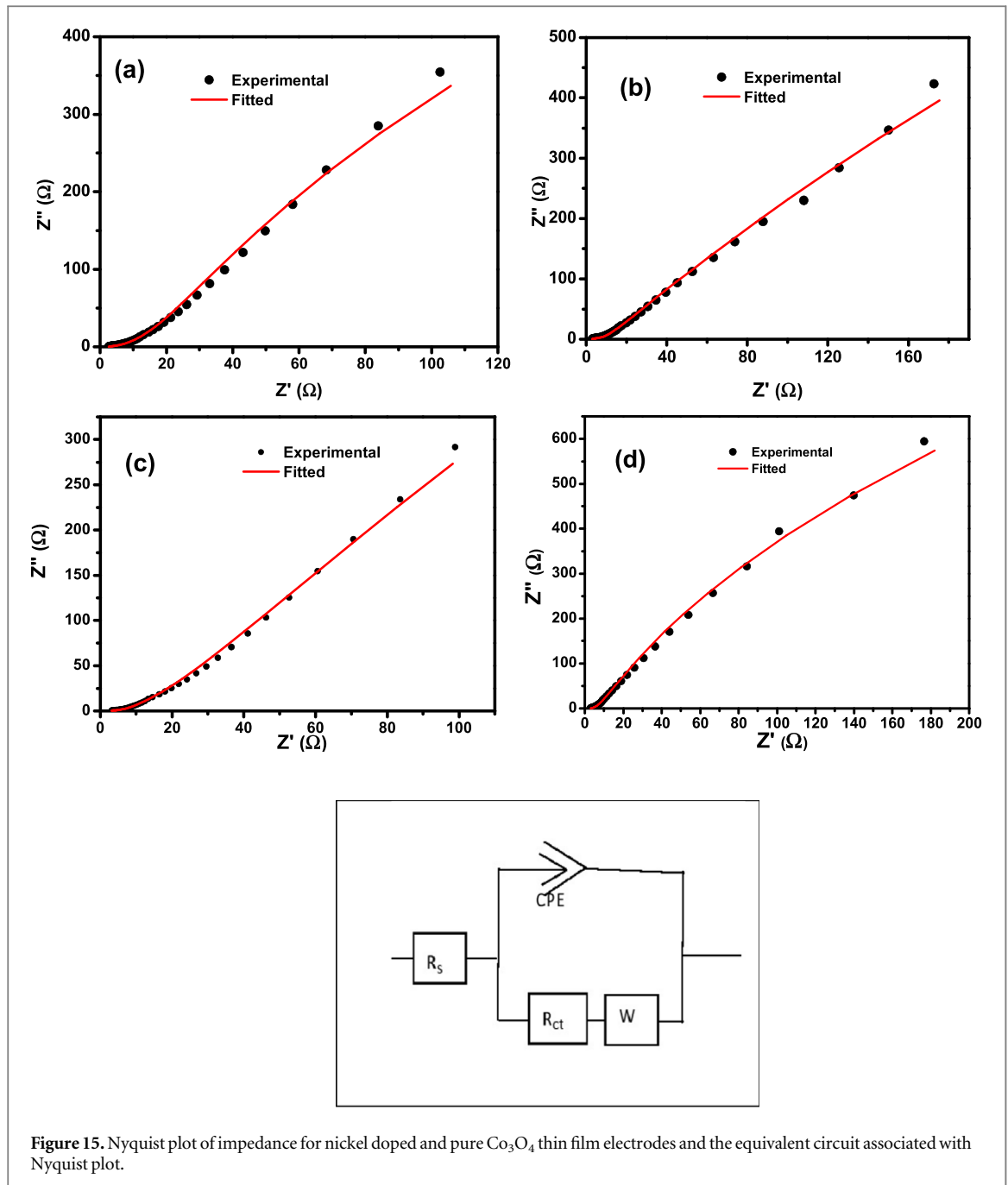


Figure 14. Cyclic stability test for 10000 cycles of 4 wt % Ni doped Co_3O_4 thin film electrodes.



the diffusion of ions is not supported as the ion got fewer time to intercalate into the electrode surface which sequentially decreases the specific capacitance value. Moreover, at high scan rate only outer pore surface are utilized for ions diffusion but at low scan rate, both outer and inner pore-surface of the electrode are effectively utilized for ions diffusion.

The measurement with the help of the Galvanostatic charge/discharge method (GCD) is performed to get detailed characteristics of samples used as supercapacitor electrode material in similar electrode-electrolyte environments as that of CV. Figure 11 shows the charge/discharge curve of nickel-doped and pure Co_3O_4 electrodes at different current densities. It is observed that both charging and discharging curves are nonlinear and all the discharge curves swerve from the straight lines. This may be due to the connection of a faradaic reaction method in the process of charge storage. In general, the discharge curves follow two different slopes. One is due to rapid discharge occurring from IR drop and thereafter a slow decay. The specific capacitance value from the GCD curve is calculated as follows [53];

$$C_s = \frac{I \Delta t}{m \Delta V} \quad (5)$$

where, I symbolizes current intensity, Δt symbolizes discharge time, ΔV gives the potential window and m is the mass of electrode material. The value of specific capacitance is obtained from GCD measurement well matched with the value obtained from CV. Figure 12 shows the variation of the specific capacitance with current density for different percentages of doping material used as the electrode. 4 wt % Ni-doped Co_3O_4 electrode gives the highest SC value of 736 Fg^{-1} at current density 0.5 Ag^{-1} which drops to 495 Fg^{-1} at current density 3 Ag^{-1} . This decrease in the value of specific capacitance with the increase in the current density is due to the contribution of resistive drop and slow kinetics of the redox-based faradic mechanism [54]. The increase of charge mobility with the increase of current density is also responsible for this. The variation of energy density with power density is shown in figure 13. The result is excellent for 4 wt % Ni-doped cobalt oxide. The incorporation of Ni leads to a remarkable increase in the conductivity and density of active sites and better electrocatalytic performance [55].

Cyclic stability is an important factor when we deal with the practical application of synthesized electrodes. The retention curve (figure 14) shows that specific capacity increases with cycle number and remains almost constant for 10000 cycles. This may be due to less agglomeration of the nanoparticles for large cycle numbers.

Electrochemical impedance spectroscopy (EIS) study also known as the dielectric study is an important characteristics tool for assessing the performance of supercapacitor electrode materials. It is used to measure the impedance of electrode material as a function of frequency. We performed the EIS measurement within the frequency range of 0.01 Hz – 100 KHz and it was used to plot the Nyquist's curve (figure 14). Those four curves depict a vertical line in the low-frequency region and for the high-frequency region, they form a semicircular arc. Different equivalent circuits and models are designed to get an idea about the contribution of different components in respect of total impedance. The intercept of the Nyquist curve with the X-axis gives the total internal resistance (R_s). The small arc in the high-frequency region gives the charge transfer resistance (R_{CT}). The 4 wt % Ni-doped cobalt oxide thin film has the least R_s value of $0.2 \Omega \text{ cm}^{-2}$ and the least R_{CT} value of $0.05 \Omega \text{ cm}^{-2}$ comparison to other films. This was an important criterion for improved supercapacitive materials. Furthermore, the low value of R_{CT} agrees about the faster electron transport occurrence during charging-discharging [56]. Figure 15 shows the equivalent circuit associated with the Nyquist plot. The constant phase element (CPE) consists of the double layer capacitance and Warburg (W) element when it is the switch from the high to the low-frequency region [57]. The presence of this Warburg element confirms that the mechanism of charge storage is mainly controlled by the pseudocapacitive process. This element instigates due to the diffusion or transportation of ions at the electrode-electrolyte interface.

4. Conclusion

Pure and Ni-doped nanostructured cobalt oxide thin films were successfully synthesized using the spray pyrolysis technique. Films are deposited on steel substrates directly to use as an improved supercapacitor electrode material. The crystallinity of the film was found to increase with the increase in doping amount up to 4 wt %. Surface morphological studies show pore size increases with dopant concentration and after 4 wt% doping the tendency reverses. The surface of the films is porous which plays an important role in the electrochemical performance of the material. Both EDX and XPS confirm the presence of nickel. Optical properties show band gap decreases with doping content. Nickel incorporation greatly affects the capacitance value. 4 wt% Ni doped Co_3O_4 electrode shows the highest value of specific capacitance of $\sim 811 \text{ Fg}^{-1}$ at scan rate of 2 mVs^{-1} with a better long-term cycle stability (Nearly constant specific capacitance for 10000 cycles). GCD study also confirms that 4 wt% Ni doped Co_3O_4 film shows a maximum SC value of 736 Fg^{-1} at a current density of 0.5 Ag^{-1} . Energy density is also highest for the 4 wt% doping content of nickel. This may be due to fast electron transfer and accessing of electrolyte ions in a much easy way. The porous nanostructure of 4 wt% Ni doped Co_3O_4 electrode has helped to attain all these properties. Electrochemical impedance spectroscopy analysis shows that the 4 wt% Ni doped cobalt oxide film has the least resistance (R_s) value of $0.2 \Omega \text{ cm}^{-2}$ and the least RCT value of $0.05 \Omega \text{ cm}^{-2}$ in comparison with other thin films which suggests good supercapacitive performance of the films. The low value of R_{CT} agrees about the faster electron transport occurrence during charging-discharging. The presence of the Warburg element in an equivalent circuit ensures the charge storage mechanism is mainly controlled by the pseudocapacitive process. Thus, the overall performance of the deposited Ni-doped Co_3O_4 thin films is up to the required level and we can consider this as a possible candidate for improved, state of art energy storage material.

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Data availability statement

The data cannot be made publicly available upon publication because no suitable repository exists for hosting data in this field of study. The data that support the findings of this study are available upon reasonable request from the authors.

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Development of porous Co_3O_4 / NiCo_2O_4 nanostructured thin film for high performance supercapacitor electrode

File Number : CRG/2022/005085

Submitted By : Dr. Ayan Mukherjee

Submission Date : 30-Apr-2022

PROPOSAL DETAILS

(CRG/2022/005085)

Dr. Ayan Mukherjee

ayanmukherjee88@gmail.com

ASSISTANT PROFESSOR (PHYSICS)

College of Commerce, Arts and Science

Opposite rajendra nagar terminal, kankarbagh main rd, Patna, Bihar-800020

Technical Details :

Scheme :	Core Research Grant		
Research Area :	Chemical Engineering (Engineering Sciences)		
Duration :	36 Months	Contact No :	+919732107688
Date of Birth :	23-Sep-1984		
Nationality :	INDIAN	Total Cost (INR) :	32,90,100
Is PI from National Laboratory/Research Institution ?	No		

Project Summary :

The demand of green energy and its storage systems is increasing with world population. Supercapacitors have drawn great attention as a novel energy storage system due to its ultra-high charge-discharge rate, long life cycle, great stability and size. It has potential to bridge the power gap between batteries and capacitors. Metal oxides are considered as good electrode material for supercapacitors. Among them, RuO₂ possess superiority due to high stable specific capacitance, excellent reversibility and long cycle life. Application of RuO₂ is limited as it is expensive, toxic and less abundant. There is a strong motivation to find alternative electrode materials. Among different metal oxides, cobalt oxide-based electrode materials have drawn great attention as a promising material for pseudocapacitors and asymmetrical supercapacitor due to its fast redox reactions, reversibility, relatively high specific surface area, low-toxicity, abundance, stability and a significant theoretical capacity of about 3560 F g⁻¹. Though, its practical capacitance is far away from theoretical value. This wide gap may be due to its slow electron kinetics or poor conductivity, fast capacity decay, ineffective porosity and impaired morphologies during its redox electrochemical reactions. So, it is essential to increase the value of specific capacitance in order to construct excellent supercapacitor. We will try to overcome this problem by preparing porous structure, reducing particle size, increasing the crystallinity and conductivity. The variety within metal oxides create higher electrochemical activity. The synergistic effect between different species would boost the overall performances of diverse metal oxides. NiCo₂O₄ which belong to same spinel structure as Co₃O₄, has been considered as promising ternary metal oxides for energy storage because of the high electrical conductivity with high electrochemical activity, large specific capacitance, and rich sources. So, we planned to develop Co₃O₄ / NiCo₂O₄ heterostructure which will be beneficial than single layer. The drawbacks of metal oxide-based electrodes such as poor conductivity, low cycle life and complexity in the penetration of electrolyte ions into the materials can be tackled by incorporating metal dopant and controlling pore architectures using template during preparation. As our objective is to develop low cost, environment friendly electrode so we have planned to use cost effective biomaterial template. Generally metal oxides show oxidation and reduction peak which leads to gas leakage. We will also optimize the ratio of Co₃O₄ / NiCo₂O₄ as well as metal dopant percentage to minimize the oxidation and reduction peaks with enhancement of specific capacitance, life cycle and capacity retention. Our desire is to fabricate a low-cost asymmetric supercapacitor with Co₃O₄ / NiCo₂O₄ as electrodes with various electrolyte and study their performance along with development of prototype of supercapacitor.

Objectives :

- Preparation of porous Co₃O₄/ NiCo₂O₄ nanostructured thin film by green route using low-cost simple chemical methods having good control over deposition rate. Co₃O₄/ NiCo₂O₄ thin film with different thickness and Co₃O₄/ NiCo₂O₄ ratio will be fabricated to get optimized performance and study the charge storage mechanism. Use of biomaterial template to control the porosity and shape and size of pores. Dependence of electrochemical performance with porosity and geometric tortuosity of pore will be investigated. Doping with Zn, Ni or metal will be done in order to solve the problem of charge transfer mechanism of Co₃O₄. Characterization will be done by XRD, TEM, SEM, AFM, EDX, XPS, FTIR etc. CV, EIS and GCD will be measured for electrochemical performance. We will try to increase the capacity retention as well as decrease the capacitance loss. Impedance spectra will be analyzed by LCR meter/ Source meter to study the ionic conductivity and specific resistance of the electrode material. We shall study the fundamental charge storage mechanism to overcome the technological barrier in developing next-generation energy storage system. Low-cost asymmetric supercapacitor will be designed by using Co₃O₄/ NiCo₂O₄ thin film as supercapacitor electrode and suitable electrolyte material. The prototype of device will be developed and investigated properly to get practical electrochemical performance of the electrode material.

Keywords :

Nanostructured thin film, Metal Oxides, Bio template, Supercapacitor, Electrochemical properties, Energy Storage.

Expected Output and Outcome of the proposal :

The possible outcomes of the proposal are a) Large area, low cost Co₃O₄/ NiCo₂O₄ nanostructured thin film will be fabricated by green route to design high performance supercapacitor electrodes which can be implemented in nanoelectronics and wearable devices in future. b) Advance characterization of the hybrid system will be useful to understand the properties of the other new hybrid heterostructures. It will help to understand the fundamentals of charge storage mechanism and effects of dopant on it. c) It will help to understand in details how charge storage mechanism depends on porosity, geometric tortuosity of the pore volume, on the interactions between the species of the electrolyte and with the element and thickness of the electrode. Also, effectiveness of using biomaterial template to control the pore shape and size can be studied. d) We may develop prototype devices with fabricated electrode with selective parameter to get better understanding of the practical performance. e) Patent and research publications will be aimed to highlight the developments of the proposed research work.

Any other relevant information:

This project is important in respect of renewable energy and storage system development in India.

Suitability of the proposed work in major national initiatives of the Government:

Smart Cities, Innovate India

Theme of Proposed Work:

Energy, Environment

Collaboration Details for last 5 Years :

S.No.	Name	Type of Collaboration
1	Dr. Ahmed A. Aboud Lecturer Beni-Suef University Beni-Suef, Egypt Egypt [04-Aug-2021 to 30-Apr-2022]	Knowledge sharing and working on supercapacitor electrode material. We have published articles jointly and now working on metal oxide nanomaterials. No fund or cost-sharing take place till now.

Planned Collaboration for the proposed work with any foreign scientist/ institution ?

No

THE UNIVERSITY OF BURDWAN
DEPARTMENT OF PHYSICS
GOLAPBAG, BURDWAN 713 104
W.B., INDIA



02.05.2023.

To
Dr. Ayan Mukherjee
Asst Professor, Dept of Physics
College of Commerce, Arts & Science
Patna

Congratulations for being awarded a research grant from SERB-DST, Govt. of India regarding development of electrode material for supercapacitor. You are welcome to use the facilities for material synthesis and characterization existing in our laboratory. You can select your schedule as per your convenience.

Regards

A handwritten signature in blue ink, appearing to read 'Partha Mira'.

Prof. Partha Mira
Email: mitrapartha1@rediffmail.com

Phone : +91-8372098447)
E_mail : ayan@cocaspatna.ac.in
Website : www.cocaspatna.ac.in



DEPARTMENT OF PHYSICS

College of Commerce, Arts & Science

Kankarbagh, Patna – 800 020

(A Constituent Unit of Patliputra University, Patna)

NAAC RE-ACCREDITED 'A' Grade, with CGPA 3.10

Date: 28.04.2023

To
Prof. Partha Mitra
Professor, Dept of Physics,
& Incharge, Facilities of Material Science Division,
The University of Burdwan,
Burdwan.

Sub: Regarding permission for using your facilities for my research project SERB CRG (File No: CRG/2022/005085)

Sir,

This is for your kind information that I was awarded a research grant from SERB-DST, Govt of India (File No: CRG/2022/005085) regarding development of electrode material for supercapacitor. My institution lacks from infrastructure and therefore it will be helpful if you kindly allow me to use your facilities for material synthesis and characterization. Please allow me a slot so that I can make an arrangement to work in your laboratory.

Thanking You

With Regards

Dr. Ayan Mukherjee

Asst Professor, Dept of Physics

College of Commerce, Arts & Science

Patna



Investigation of Fe_3O_4 /NiO /CNT hybrid nanostructured thin films for high performance supercapacitor

File Number : CRG/2021/002864

Submitted By : Dr. Ayan Mukherjee

Submission Date : 08-Mar-2021

PROPOSAL DETAILS

(CRG/2021/002864)

Dr. Ayan Mukherjee

ayanmukherjee88@gmail.com

ASSISTANT PROFESSOR (PHYSICS)

College of Commerce, Arts and Science

Opposite rajendra nagar terminal, kankarbagh main rd, Patna, Bihar-800020

Technical Details :

Scheme :	Core Research Grant		
Research Area :	Chemical Engineering (Engineering Sciences)		
Duration :	36 Months	Contact No :	+919732107688
Date of Birth :	23-Sep-1984		
Nationality :	INDIAN	Total Cost (INR) :	35,39,800
Is PI from National Laboratory/Research Institution ?	No		

Project Summary :

The demand for cost-effective, eco-friendly energy storage systems is increasing gradually with growth of world population. Supercapacitors have attracted significant attention as a novel energy storage system due to their high charge-discharge rate, great stability, long life cycle, smart size and extremely high power density. Metal oxides are considered as good electrode material for supercapacitors. Among them, RuO₂ is the best material due to its high specific capacitance, excellent reversibility, stable capacitance and long cycle life. But its wide application is limited as it is expensive, toxic and less abundant. So, there is a strong motivation to find alternative electrode materials. Scientists are working on different hybrid metal-oxide and their composites with CNT, graphene, and conducting polymer. Fe₃O₄ based electrode materials have drawn great attention due to its high thermal stability, presence of different valence states, high theoretical specific capacitance [~ 2299 F/g], large potential window (-1.2 to 0.25V), low-toxicity, abundant in nature. So far the maximum specific capacitance achieved by Fe₃O₄ based electrode is 510 F/g. The wide gap between theoretical and experimental data is due to poor conductivity, nature of anion, effective surface area of the electrode etc. So it is necessary to increase the specific capacitance value nearer to the theoretical value in order to construct excellent supercapacitor. So, we will try to overcome this problem by preparing nanoscale porous structure, increasing the crystallinity and conductivity. The variety within metal oxides create higher electrochemical activity. The synergistic effect between different species would boost the overall performances of diverse metal oxides by smoothing such activities as ion adsorption, diffusion and transport compared with single metal oxides. So, we planned to include layer of Nickel Oxide over Fe₃O₄ layer. NiO has high theoretical capacitance [~ 2584 F/g], large surface area, non-toxic and low material cost. Metal oxide based electrodes show poor conductivity, low cycle life and complexity in the penetration of electrolyte ions into the materials. Those drawbacks can be tackled by incorporating CNT and making metal oxide/ CNT hybrid nanocomposite. Generally metal oxides (except RuO₂ and MnO₂ and few others) show oxidation and reduction peak which leads to gas leakage. Our aim will be to optimize the ratio of Fe₃O₄ / NiO/ CNT to minimize the oxidation and reduction peaks as well as the enhancement of specific capacitance, life cycle and capacity retention of the electrode. Thus Fe₃O₄ / NiO/ CNT will be used as negative electrode of the asymmetric supercapacitor. Using CNT as positive electrode will increase the potential range which will further increase the power density. So our desire is to fabricate a low-cost supercapacitor with those two-electrode and gel-based electrolyte materials and study their electrochemical behavior.

Objectives :

Preparation of porous Fe₃O₄ thin film by SILAR method which is a simple, low-cost, less utilized chemical process with good control over deposition rate at low temperature. Fe₃O₄/ NiO layer of different thickness will be fabricated. Layer by layer deposition of Fe₃O₄/ NiO/CNT will be made by chemical method on conducting electrode. We will grow ordered CNT to reduce the resistivity of the electrode materials as well as to increase its cyclic stability. To increase the adhesion of CNT over Fe₃O₄/ NiO layer, we will functionalize CNT. Characterization will be done by XRD, TEM, SEM, AFM, FTIR spectrometer etc. CV and GCD will be measured to investigate the electrochemical performance. We will try to increase the capacity retention as well as decrease the capacitance loss. Impedance spectra will be measured by LCR meter to study the ionic conductivity and specific resistance of the electrode material. Details study of electrochemical properties will be done along with dependence of storage capacity with film thickness. We shall study the fundamental charge storage mechanism and overcome the technological barrier in developing next-generation energy storage system. Low cost asymmetric supercapacitor will be designed by using Fe₃O₄/ NiO/CNT as negative electrode and ordered CNT layer as positive electrode with gel based electrolyte material. The device will be designed and investigated properly to get excellent electrochemical performance.

Keywords :

Nanostructured thin film, Metal Oxides, CNT, Supercapacitor, Electrochemical properties, Energy Storage.

Expected Output and Outcome of the proposal :

The possible outcomes of the proposal are a) Large area, low-cost Fe₃O₄/ NiO / CNT thin film will be fabricated to design asymmetric supercapacitor which can be implemented in nanoelectronics and wearable devices in the future. b) Advance characterization of the hybrid system will be useful to understand the properties of the other new hybrid heterostructures. It will help to understand the fundamentals of the charge storage mechanism. c) Charge transfer between CNT and Fe₃O₄/ NiO layer, and between Fe₃O₄ and NiO will be studied further. d) If we can succeed in our work then the dimension of the supercapacitor or any energy storage devices can be reduced in future. e) Development of devices with selective parameters can give a better understanding of the performance. f) Patent and research publications will be aimed to highlight the developments of the proposed research work.

Any other relevant information:

This project is important in respect of renewable energy development in India.

Suitability of the proposed work in major national initiatives of the Government:

Innovate India


Theme of Proposed Work:

Energy, Materials

Collaboration Details for last 5 Years :

Planned Collaboration for the proposed work with any foreign scientist/ institution ?

No

SNo.	CO-PI Details
1	 <p>PARTHA MITRA mitrapartha1@rediffmail.com Professor(Physics)</p> <p>Burdwan University DDE Complex,Golapbag, Post: Rajbati, Dist: Burdwan, WEST BENGAL, BARDHAMAN</p> <p>D.O.B : 01 Jan, 1970</p>

Other Technical Details

Name: Dr. Ayan Mukherjee, College of Commerce, Arts & Science, Patna-20

Title of the Project: Investigation of Fe₃O₄ /NiO /CNT hybrid nanostructured thin films for high performance supercapacitor

1. Origin of the proposal

The demand of cost-effective, eco-friendly energy system is increasing gradually with growth of world population. The striking challenge for most renewable energy system is its storage capacity. High energy, high power density and availability of materials are the major criteria for a good storage device. A good combination of renewable energy technologies and improved energy storage devices play a key role in energy distribution of developing countries, especially in rural area. This also helps us to protect our planet from environmental hazards. So, intensive research for efficient energy storage system is in high demand. Currently supercapacitors have attracted significant attention as a novel energy storage system due to their ultra high charge-discharge rate, great stability, long life cycle, smart size and extremely high power density [1-2]. Thus, development of eco-friendly, light weight, low cost supercapacitors with high performance are of prime interest for scientific community.

Metal oxides (e.g. RuO₂, Fe₂O₃, Fe₃O₄, MnO₂, NiO, V₂O₅, TiO₂, etc.) are considered as good electrode material for supercapacitors [3]. Among them, RuO₂ is the best material due to its high specific capacitance (experimentally achieved value ~ 1300 F/g) [1], excellent reversibility, stable capacitance and long cycle life. But the wide use of RuO₂ is limited as it is expensive, very much toxic, and less abundant [3-4]. So, there is a strong motivation to find alternative inexpensive eco-friendly electrode materials which exhibit stable pseudo-capacitance similar or greater to that of RuO₂. Among different metal oxides, Fe₃O₄ based electrode materials have drawn great attention due to its high thermal stability, presence of different valence states, high theoretical specific capacitance [~ 2299 F/g], large potential window (-1.2 to 0.25V), low-toxicity, abundant in nature [1]. So far as reported by different researcher the maximum specific capacitance achieved by Fe₃O₄ based electrode is 510 F/g in Na₂SO₃ electrolyte with an operating voltage of 1.2 V [1]. But the wide difference between theoretical and experimental data is mainly due to poor conductivity, nature of anion, effective surface area of the electrode etc. So, it is necessary to increase the specific capacitance value nearer to the theoretical value in order to construct excellent supercapacitor. On the other hand, Nickel Oxide (NiO) has also possess high theoretical capacitance (2584 Fg⁻¹). It is a low-cost material with excellent chemical/thermal stability. The important thing is that due to limitation of diffusion distance of electrolytes into NiO electrodes, only the surface portion



KARO
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Closing material loops




CERTIFICATE OF RECOGNITION

AWARDED TO

College of Commerce Arts and Science
for joining the **circular economy** movement.

Thank you for recycling 400 kg of e-waste in FY 2023-24,
saving 800.0 kg of CO₂ emissions

 CO₂ offset by **5 trees** in their lifetime

 Taking a regular car off the road by **4000 kms**

PRINCIPAL PARTNERS



ASSOCIATE PARTNERS



OTHER PARTNERS



11/07/2023
Date



Please scan the QR code to verify this certificate

Pranshu Singhal
Founder and Director
Karo Sambhav



College of Commerce, Arts & Science

Kankarbagh, Patna – 800 020
(A Constituent Unit of Patliputra University, Patna-20)
NAAC RE-ACCREDITED 'A' Grade, with CGPA 3.10

OFFICE OF THE PRINCIPAL

Ref - _____

Date - _____

TO WHOMSOEVER IT MAY CONCERN

KSPL/BC/2023-24/91

Our office, **College of Commerce, Arts and Science, Patna** has handed over the following e-waste material to Karo Sambhav Pvt. Ltd. for responsible recycling in accordance with the E Waste (Management) Rules 2022.

We have handed over **400 Kg** of e-waste to Karo Sambhav Pvt. Ltd. on 11th July 2023.
The e-waste given by us comprises the following items: -

Sr. No	ITEW Category as per e-waste (management) rules 2022	Item Description	Quantity of e-waste generated (in Kg)
1	ITEW 2	CPU	110.5
2	ITEW 24	UPS	71
3	ITEW 2	Keyboard	16.35
4	CEEW 4	AC Indoor	9.5
5	ITEW 2	LCD Monitor	53
6	LSEEW 29	Water Purifier	17.4
7	CEEW 4	Stabilizer	19.5
8	ITEW 2	CRT Monitor	38
9	ITEW 17	Projector	12.7
10	ITEW 6	Printer	23
11	LSEEW 13	Fan	6.3
12	ITEW 2	SMPS	1.45
13	LSEEW 21	Mixer	3.75
14	ITEW 2	Motherboard	2.3
15	ITEW 1	Adaptor	10.1
16	ITEW 2	Mouse	1
17	ITEW 12	Telephone	3.5
18	ITEW 2	Hard Disk	0.4
19	ITEW 26	Modem	0.25
Total Quantity			400 Kg

Authorized Signatory
Place: Patna


Patna 08.08.23
College of Commerce, Arts & Science
Patna - 800020
10/08/2023



Phone : 0612-2350136 (O)
E_mail : principalcocaspatna@gmail.com
Website : www.cocaspatna.ac.in

College of Commerce, Arts & Science

Kankarbagh, Patna – 800 020
(A Constituent Unit of Patliputra University, Patna-20)
NAAC RE-ACCREDITED 'A' Grade, with CGPA 3.10

OFFICE OF THE PRINCIPAL

Ref-

Date-

INVOICE							
Supplier Name and Address				Original			
College of Commerce, Arts & Science Opp. Rajendra Nagar Terminal, Patna- 800020.				Invoice No.	KSP/BC/2023/24/91		
				Date	11/07/2023		
				E-way Bill			
				Slip No.			
Supplier PAN	N/A						
Supplier GSTIN	N/A						
Billing Name and Address				Shipping Name and Address			
Karo Sambhav Pvt Ltd.				Karo Sambhav Pvt Ltd.			
Shop no- 09, Ground Floor, Kumar Tower, East Boring Canal Road, Neaw Capital, Patna- 800001				Shop no- 09, Ground Floor, Kumar Tower, East Boring Canal Road, Neaw Capital, Patna- 800001			
Karo Sambhav PAN				AAGCK3747D			
Karo Sambhav GSTIN				10AAGCK3747D1ZZ			
Vehicle Registration No.				BR 01 GK 0214			
Sr. No.	Item Description	HSN Code	Category Code	Quantity		Rates ()	Total Amount ()
				KGs	Pieces		
1	CPU	854810	ITEW 2	110.5		55	6077.5
2	UPS	854810	ITEW 24	71		35	2485
3	Keyboard	854810	ITEW 2	16.35		25	408.75
4	AC Indoor	854810	CEEW 4	9.5		80	760
5	LCD Monitor	854810	ITEW 2	53		30	1590
6	Water Purifier	854810	LSEEW 29	17.4		10	174
7	Stabilizer	854810	CEEW 4	19.5		40	780
8	CRT Monitor	854810	ITEW 2	38		10	380
9	Projector	854810	ITEW 17	12.7		10	127
10	Printer	854810	ITEW 6	23		30	690
11	Fan	854810	LSEEW 13	6.3		10	63
12	SMPS	854810	ITEW 2	1.45		40	58
13	Mixer	854810	LSEEW 21	3.75		10	37.5
14	Motherboard	854810	ITEW 2	2.3		40	92
15	Adaptor	854810	ITEW 1	10.1		30	303
16	Mouse	854810	ITEW 2	1		10	10

Principal
10.08.23
College of Commerce, Arts & Science
Patna- 800020
(10/08/2023)



Phone : 0612-2350136 (O)
E_mail : principalcocaspatna@gmail.com
Website : www.cocaspatna.ac.in

College of Commerce, Arts & Science

Kankarbagh, Patna – 800 020
(A Constituent Unit of Patliputra University, Patna-20)
NAAC RE-ACCREDITED 'A' Grade, with CGPA 3.10

OFFICE OF THE PRINCIPAL

Ref. -

Date -

IS	Hard Disk	854810	ITEW 2	0.4		40	16
10	Modem	854810	ITEW 26	0.25		20	5
			Sub-Total			400 Kg	
						Total Amount without GST ()	14091.75
						CGST (9%)	
						SGST (9%)	
						IGST (18%)	
Total Amount in words () :		Fourteen Thousand Ninety One Rupees Only			Total Amount ()		14091.75
		/-					
For Authorized Signatory							


Principal
College of Commerce, Arts & Science
Patna- 800020

10/09/2027



COLLEGE OF COMMERCE, ARTS & SCIENCE, PATNA
A constituent unit of Patliputra University, Patna

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Two Best Practices Implemented by College of Commerce, Arts and Science, Patna

Practice 1: Cellulosic Fibres derived(synthesized) from agro waste

Practice 1 involves the synthesis of cellulosic fibers from agricultural waste and focuses on utilizing these materials as sustainable sources for extracting nanocrystalline cellulose. The objective is to explore the potential of using cellulose obtained from fruit and vegetable waste as an environmentally friendly alternative to synthetic fibers. Plant-based organic waste, particularly in states like Bihar, contains ample cellulose that can be extracted for various applications such as paper, textiles, plates, electronics, and in medical field.

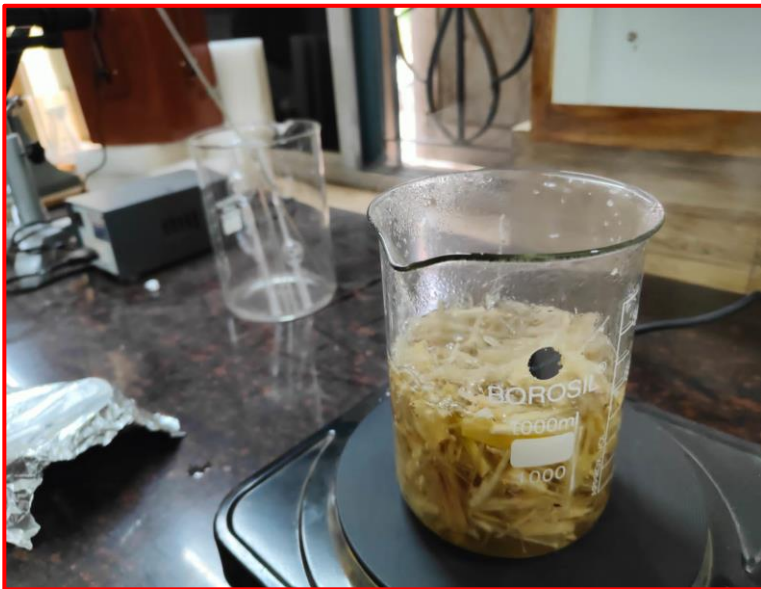
The extraction process, conducted in our chemistry laboratory, includes steps such as drying the waste, leaching with mineral acid, filtration, treatment with a mineral base, boiling with deionized water, and bleaching. The evidence of success lies in the reduction of waste in the furniture industry through the use of cellulose waste fibers, which can be employed to create medium density fiberboards. The abundance of cellulose in agro-wastes, such as fruit and vegetable residues, showcases the potential for reusing these materials.

However, the practice encounters challenges, particularly with acid hydrolysis, which generates acid wastewater during the washing of nano cellulose suspension to neutralize the pH value. Despite these challenges, the success of utilizing agro-waste cellulose fibers for sustainable applications demonstrates the positive impact on waste reduction.

As an optional note, it is mentioned that natural fiber composites from jute and coconut husks are used for building materials.

Presently, we are synthesizing cellulose from sugarcane waste in our chemistry laboratory and plan to do the same with banana plant in future.





Practice 2: A self sustaining method for Waste Water Treatment based on Phytorid Technology

Controlling water pollution poses a significant challenge, with an estimated daily generation of billions of liters of grey water. This volume continues to increase due to an elevated standard of living. Sewage is a complex mixture containing plastic particles, microbial pollutants, and traces of medication, posing threats to water and food security, as well as human health. The environment faces a substantial risk due to an escalating pollution load and inadequate wastewater treatment facilities. Additionally, issues such as a lack of maintenance, electricity, and skilled manpower contribute to the premature termination of the lifespan of most wastewater management systems.

Sewage from individual homes is a diverse blend, comprising various substances discharged down drains or flushed down toilets. Its composition fluctuates daily, between households, and even from hour to hour. On average, domestic sewage consists of approximately 99.9 percent water (by weight), with 0.02 to 0.03 percent comprising suspended solids and other soluble organic and inorganic substances. The sewage also contains bacteria, viruses, and microorganisms from the digestive, respiratory, and skin tracts, making their way into toilets and drains. In a typical single-family house, laundry and kitchen contribute about 10 percent each to wastewater volume, while showering and handwashing account for around 40 percent, and toilets make up the remaining 40 percent. The organic chemical content originates primarily from human wastes, soaps, and food residues.



In many regions, untreated wastewater is directly discharged into the local environment and water bodies, causing surface and sub-surface water contamination, severely impacting the environment and human health in various villages. Therefore, there is a crucial need to implement effective wastewater management systems to address this contamination issue.

The PHYTORID wastewater treatment technology, developed by CSIR-NEERI, integrates physical, chemical, and biological processes to achieve comprehensive wastewater treatment. Notably, this technology operates without electricity, requires minimal maintenance, and does not necessitate highly skilled manpower.

In contrast to traditional sewage treatment systems using conventional technologies prone to wear and tear, Phytoid Technology treats wastewater naturally without the addition of chemicals. It utilizes aquatic or semi-aquatic plants and their associated biota, creating an enhanced wetland ecosystem for wastewater treatment. This approach optimally harnesses biological treatment capacity and engineering parameters.



The goals of Phytoid Sewage Treatment include the removal of solids, the stabilization of organic oxygen-demanding compounds, the elimination of disease-causing microorganisms, and the removal of harmful chemical substances, disagreeable colors, and odors. Additionally, the technology aims to keep operational and maintenance costs at a minimum.

Presently we are using a five thousand litre per day capacity Phytoid Waste Water Treatment Tank in the botanical garden of our college.



फोन : 0612-2350136 (O)
ईमेल : principalcocaspatna@gmail.com
drindrajitprasadroy@gmail.com
वेबसाइट : www.cocaspatna.ac.in

कॉलेज ऑफ कॉमर्स, आर्ट्स एण्ड साइंस

कंकड़बाग, पटना - 800 020

[पाटलिपुत्र विश्वविद्यालय, पटना की अंगीभूत इकाई]

नैक प्रत्यापित, 'A' ग्रेड सह CGPA 3.10

प्रधानाचार्य का कार्यालय

Confirmation by College to commence CPBFI Batch

Date: 19/07/2023

Ref. :

To

Ms.Pallavi Gandhalikar,
National Head CSR, Head Bajaj Finserv BEYOND,
Bajaj Finserv Ltd., Pune.

Date: 19/07/2023

Dear Madam,

This refers to our draft MoU with Bajaj Finserv to conduct Certificate Program in Banking, Finance and Insurance (CPBFI) for the students and Alumni of our College/Institute.

We hereby provide our confirmation for the following batch formation details mentioned below:

Sr.No	Details	College Response
1	Our Coordinator for CPBFI has received a complete briefing about conduct of the CPBFI Batch from your official Training Partner and I am informed that he/she is fully aware of his/her role for successful execution of the Batch.	✓ Yes/No
2	Mention total number of students enrolled. (Final list of students shared). Please close the Enrolment Link.	47
3	*As agreed in our MoU, the college has collected a non-refundable fee of Rs.1000/- specifically for CPBFI from everyenrolled Student.	✓ Yes/No
4	No First- or Second-Year Undergraduate student is admitted in the Batch.	✓ Yes/No
5	As per current College Calendar no interruptions of more than 3 days are expected in the CPBFI Batch on account of upcoming examinations, Holidays, Placement Drives, Field Visits, other Training Programs etc.	I confirm/Possibility of University Examination/ Possibility of Placement
6	We have discussed the Batch timings with the enrolled students and the students have confirmed the suitability of the same. No student is expected to miss the Batch on account of Job/Internship/other Tuition Classes.	✓ Yes/No
7	Students have confirmed that they have adequate equipment namely Smart Phones/Laptop/Desktop and sufficient Network Data to attend Online Classes and Online Mock Interviews during HR Workshop.	✓ Yes/No

Thus, we confirm the Batch formation and request to launch the Batch as per mutually decided Date.

College to appoint 2 Student Coordinators for the Batch. Students to be from the Batch.		
	Name	Mobile Number
Student Coordinator	MR. AMIT KUMAR	7903545596
Student Coordinator	MS. TANU SINGH	9905912080

Thank you!

Principal

CPBFI College Coordinator

(Sign)

MS
19/07/2023
Coordinator

(Sign)

(College Name and Stamp to be affixed)

MBA Programme
College of Commerce, Art & Science
Patna-800 020

Note: In case of any clarification feel free to contact Archana Bhat (archana.bhat@bajajfinserv.in) Senior Manager, CSR Bajaj Finserv.



Department of Business Management

(Master in Business Administration)

College of Commerce, Arts & Science

Kankarbagh, Patna - 800 020

[A Constituent Unit of Patliputra University, Patna]

NAAC RE-ACCREDITED 'A' Grade, with CGPA 3.10

Phone : 0612-2350136 (O), Website : www.cocaspatna.ac.in

Ref. No.

Date 03/07/2023

Notice

An employability enhancement programme is going to be launched in the last week of November. This is a Certificate Programme in Banking, Finance and Insurance (CPBFI) of 100 hours duration sponsored by Bajaj Finserv and conducted by Centum Learning. An interactive session regarding the details of the program will be held at the Department of MBA on 10th of July by the officials from Centum Learning.

Interested students may register themselves at MBA department office.

MS
03/07/2023

Co-ordinator

MBA

College of Commerce, Arts & Science,

Patna-20

Coordinator

MBA Programme

College of Commerce, Art & Science

Patna-800 020



Department of Business Management

(Master in Business Administration)

College of Commerce, Arts & Science

Kankarbagh, Patna - 800 020

[A Constituent Unit of Patliputra University, Patna]

NAAC RE-ACCREDITED 'A' Grade, with CGPA 3.10

Phone : 0612-2350136 (O), Website : www.cocaspatna.ac.in

Ref. No.

Date 04/09/2023

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Interested students may register themselves at MBA department office.

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04/09/2023

Co-ordinator

MBA

College of Commerce, Arts & Science,

Patna-20

Coordinator

MBA Programme

College of Commerce, Art & Science

Patna-800 020



Department of Business Management

(Master in Business Administration)

College of Commerce, Arts & Science

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04/11/2022

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College of Commerce, Arts & Science,

Patna-20

Coordinator

MBA Programme

College of Commerce, Art & Scienc.

Patna-800 020



Department of Business Management

(Master in Business Administration)

College of Commerce, Arts & Science

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College of Commerce, Arts & Science,

Patna-20

MBA Programme

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Patna-800 020



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September

Rahul Kumar Basak 2 Sept
3rd Batch - CPBFI - virtual studen...
Dear Madam & Sir, Greetings! We...

July

Rahul Kumar Basak 21 Jul
Final List of Enrolled students
Dear Madam, Please find the final...

Rahul Kumar Basak 19 Jul
CONSENT LETTER for CPBFI batch...
Dear Madam, Greetings! Please fi...

Rahul Kumar Basak 14 Jul
CPBFI 2nd Batch Execution Plan
Dear Pallavi, We thank you and your ...

Rahul Kumar Basak 13 Jul
CPBFI - Batch performance report || ...
Dear Madam, Please find below the ...

Rahul Kumar Basak 6 Jul

CONSENT LETTER for CPBFI batch formation ||
COCAS - Batch 2

Yahoo/Inbox



Rahul Kumar Basak

From:

a_rahul.basak@centumlearning.com

To: mridula_ku@yahoo.com

Cc: santosh.phy@cocaspatna.ac.in



Wed, 19 Jul at 12:06 am



Dear Madam,
Greetings!

Please find the format of the Consent letter which we will require to start the 2nd
batch of CPBFI at COCAS.

Request you to please take the print out of the attached file (2.0 College
Confirmation Checklist for batch formation) in the College letter head.

Madam, for your reference I have attached the Consent letter that was shared to
us by Dr. Santosh Sir for the commencement of first batch of CPBFI from COCAS.

Regards

Rahul.





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September



Rahul Kumar Basak

2 Sept

☆ 3rd Batch - CPBFI - virtual studen...

Dear Madam & Sir, Greetings! We...

July



Rahul Kumar Basak

21 Jul

☆ Final List of Enrolled students

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19 Jul

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Rahul Kumar Basak

13 Jul

☆ CPBFI - Batch performance report || ...

Dear Madam, Please find below the ...



Rahul Kumar Basak

6 Jul

☆ BAJAJ MOU - Blue Dart -3138464568...

Final List of Enrolled students

Yahoo/Inbox ☆



Rahul Kumar Basak

From:

a_rahul.basak@centumlearning.com

To: mridula_ku@yahoo.com,

dr.mridula7@gmail.com

Cc: santosh.phy@cocaspтна.ac.in



Fri, 21 Jul at 12:58 pm ☆

Dear Madam,

Please find the final list of the enrolled students for the COBFI batch 2.

Regards



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September

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Rahul Kumar Basak 21 Jul
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Dear Pallavi, We thank you and your ...

Rahul Kumar Basak 13 Jul
☆ CPBFI - Batch performance report || ...
Dear Madam, Please find below the ...

Rahul Kumar Basak 6 Jul
☆ BAJAJ MOU - Blue Dart -3138464568...

3rd Batch - CPBFI - virtual student information sharing session 4th of September – 06:00 pm

Yahoo/Inbox ☆



Rahul Kumar Basak

Sat, 2 Sept at 2:58 pm ☆

From: a_rahul.basak@centumlearning.com
To: mridula_ku@yahoo.com
Cc: dr.mridula7@gmail.com,
santosh.phy@cocaspatna.ac.in,
Amresh Kumar

Dear Madam & Sir,
Greetings!

We thank you & Santosh Sir for the trust and support on CPBFI employability pr

Madam, as per our discussion today request you to please find the student inter
link which is **schedule on 4th of September, Monday at 6:00 pm .**

Kindly share the meeting link with the students who will be participating in the **3r
CPBFI employability training program.**

The session will start at 6:00 pm .

The link :-

<https://meet.google.com/nuw-wrse-wtv>



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Archana Bhat

7 Sept

☆ RE: testimonial

Dear Mam, Thank you so much for the ...



Archana Bhat

16 May

☆ FW: Bajaj Finserv Limited | CPBFI | C...

Dear Sir / Madam, Greetings for the... 

Archana Bhat

30/11/2022

☆ RE: Deletion of names from CPBFI 668 ...

Dear Mam, Greetings for the day! This c...

From: mridula singh <mridula_ku@yahoo.com>**Sent:** 06 September 2023 16:58**To:** Archana Bhat <archana.bhat@bajajfinserv.in>**Subject:** testimonial

CAUTION: This email is originated from outside of the organization. Watch the URL link very carefully before opening. Do not open attachments and links unless you recognize the sender Email ID and know the content is safe.

Hi, myself Dr. Mridula Kumari, Professor in the Department of Economics, College of Commerce, Arts and Science, Patna. I am also the coordinator of CPBFI program running in our college. This is a wonderful program aimed at enhancing the employability of our students. First batch of this program in our college was launched in 2022. Second batch is about to complete this course and third batch will be launched soon in this month itself. The entire course of about hundred hours is meticulously organized in such a manner that students get practical knowledge in the field of banking, insurance and finance which are the most promising sectors from employment point of view. Personality development through Swaroop and Communication and workplace skill development are other features of this program which are of great benefit for our students. This program helped our students to get employment in various organizations.

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Archana Bhat

30/11/2022

☆ RE: Deletion of names from CPBFI 668 ...

Dear Mam, Greetings for the day! This c...

• RE: testimonial

Yahoo/Inbox ☆



• Archana Bhat

From: archana.bhat@bajajfinserv.in

To: mridula singh



Thu, 7 Sept at 10:42 am



Dear Mam,

Thank you so much for the prompt response!

This really helps and will try to use these in our Marketing Collaterals 😊. Thank you for joining hands and helping us reach to more Partners and taking this social initiative across the country.

Thank You!

Regards,

Archana

Archana Bhat

Training Operations- CPBFI (Certificate Program in Banking, Finance and Insurance)

Sr. Manager, Corporate Social Responsibility

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Pallavi Gandhalikar

15 Jul

☆ RE: execution of 2nd batch of CPBFI in ...

Looping in my operations team @Shital...



Pallavi Gandhalikar

15 Jul

☆ RE: execution of 2nd batch of CPBFI in ...

Dear Mridula Madam, Thanks a lot for s...

Earlier in 2023



Pallavi Gandhalikar

14 Jan

☆ RE: BFSID of Nandini CPBFI, 67th ba...

Dear Mridula Madam, Thanks a lot f...

2022



Pallavi Gandhalikar

30/12/2022

☆ Re: Rescheduling of CPBFI classes.

Dear Madam, Thanks, a lot for your mai...

RE: execution of 2nd batch of CPBFI in COCAS, Patna

Yahoo/Inbox



Pallavi Gandhalikar



Sat, 15 Jul at 12:36 pm

From: pallavi.gandhalikar@bajajfinserv.in

To: mridula singh

Cc: Archana Bhat, Rahul Kumar Basak, Amresh1 Kumar, Santosh Kumar Phy

Dear Mridula Madam,

Thanks a lot for spending quality time on the data for the first batch and I truly appreciate the college's effort to own the responsibility and sharing with Bajaj what will you do differently in your second batch. Approved and looking forward to meet you in person for the launch of the second batch.

Regards

Pallavi Gandhalikar

Head-BEYOND

From: mridula singh <mridula_ku@yahoo.com>

Sent: 14 July 2023 10:48 PM

To: Pallavi Gandhalikar <pallavi.gandhalikar@bajajfinserv.in>

Cc: Archana Bhat <archana.bhat@bajajfinserv.in>; Rahul Kumar Basak <a_Rahul.Basak@centumlearning.com>; Amresh1 Kumar <a_Amresh.Kumar@centumlearning.com>; Santosh Kumar Phy <santoshkumar.coc@gmail.com>

Subject: execution of 2nd batch of CPBFI in COCAS, Patna

July

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Pallavi Gandhalikar 15 Jul
☆ RE: execution of 2nd batch of CPBFI in ...
Looping in my operations team @Shital...

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Dear Mridula Madam, Thanks a lot f... 📎

2022

Pallavi Gandhalikar 30/12/2022
☆ Re: Rescheduling of CPBFI classes.
Dear Madam, Thanks, a lot for your mai...

From:

pallavi.gandhalikar@bajajfinserv.in

To: Mridula Kumari

Cc: Archana Bhat,

a_rahul.basak@centumlearning.com,

a_amresh.kumar@centumlearning.com

, Santosh Kumar Phy

Dear Madam,

Thanks, a lot for your mail and request you to share the revised batch h schedule to Bajaj. We will review and accordingly revert. If exams are coming up, we understand the concerns and hence will support the learners to the best of our capacity.

Regards

Pallavi

Get [Outlook for iOS](#)

From: Mridula Kumari <mridula_ku@yahoo.com>

Sent: Friday, December 30, 2022 5:20:25 PM

To: Pallavi Gandhalikar <pallavi.gandhalikar@bajajfinserv.in>

Cc: Archana Bhat <archana.bhat@bajajfinserv.in>;

a_rahul.basak@centumlearning.com <a_rahul.basak@centumlearning.com>;

a_amresh.kumar@centumlearning.com

<a_amresh.kumar@centumlearning.com>; Santosh Kumar Phy

<santoshkumar.coc@gmail.com>

Subject: Rescheduling of CPBFI classes.

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July



Rahul Kumar Basak

19 Jul

☆ CONSENT LETTER for CPBFI batch...

Dear Madam, Greetings! Please fi...



Rahul Kumar Basak

14 Jul

☆ CPBFI 2nd Batch Execution Plan

Dear Pallavi, We thank you and your ...



Rahul Kumar Basak

13 Jul

☆ CPBFI - Batch performance report || ...

Dear Madam, Please find below the ...



Rahul Kumar Basak

6 Jul

☆ BAJAJ MOU - Blue Dart -3138464568...

Dear Sir/Madam. BAJAJ has re sent t...

2022



Rahul Kumar Basak

1/12/2022

☆ COCAS || CPBFI || Student Details

Dear Madam, Greetings. Please fi...



Rahul Kumar Basak

25/11/2022

☆ CPBFI || BATCH Schedule || COCAS

Dear Sir & Madam, Greetings! Pl...

• CPBFI || BATCH Schedule || COCAS

Yahoo/Inbox ☆



• Rahul Kumar Basak

From:

a_rahul.basak@centumlearning.co

To:

santoshkumar.coc@gmail.com,

santosh.phy@cocaspatna.ac.in,

mridula_ku@yahoo.com



Fri, 25 Nov, 2022 at 8:45 pm



Dear Sir & Madam,
Greetings!

Please find the schedule of CPBFI Employability Program of College of
Commerce, Arts & Science Patna.
We will follow this schedule.

Regards.



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2022

Rahul Kumar Basak 1/12/2022

☆ COCAS || CPBFI || Student Details

Dear Madam, Greetings. Please fi...

Rahul Kumar Basak 25/11/2022

☆ CPBFI || BATCH Schedule || COCAS

COCAS || CPBFI || Student Details

Yahoo/inbox ☆



Rahul Kumar Basak

From:

a_rahul.basak@centumlearning.co

To: mridula_ku@yahoo.com



Thu, 1 Dec, 2022 at 9:15 am



Dear Madam,
Greetings.

Please find the details of the students.

Regards



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Your Full Name	Gender	Date of Bir	Which deg	Year
AADITYA RAJ	Male	01/10/200	B.A.	Third Year
Abhishek kumar	Male	01/01/200	B.Com.	Third Year
ABHISHEK KUMAR	Male	13/03/200	MBA	Already Co
ABHISHEK KUMAR	Male	15/09/199	MBA	Already Co
Aditi	Female	10/06/200	B.Com.	Third Year
AMAR KUMAR	Male	25/08/200	B.A.	Third Year
AMIT KUMAR MISHRA	Male	26/07/199	MBA	Second Yea
AMITESH KUMAR	Male	26/05/200	MBA	Already Co
ANSHU KUMARI RAY	Female	01/08/200	B.Com.	Third Year
HEMANSHU PRIYA	Female	28/06/200	MBA	Already Co
HEMANSHU PRIYA	Female	28/06/200	MBA	Third Year
HIMANSHU KUMAR	Male	25/11/200	B.Com.	Third Year
HIMANSHU RAJA	Male	10/03/200	B.Com.	Third Year
KUMAR MANAS	Male	03/03/200	MBA	Already Co
MANAN ANAND	Male	20/02/199	MBA	Already Co
Mandvi Kumari	Female	01/03/200	B.Com.	Third Year
Md Saif ali	Male	12/02/199	MBA	Already Co
MONIKA KUMARI	Female	29/02/200	B.Com.	Third Year
Nisha Bharti	Female	14/03/200	B.Com.	Third Year
NISHI KAPOOR	Female	08/04/200	MBA	Already Co
NITU KUMARI	Female	25/03/200	B.Com.	Third Year
PARTH CHAURASIA	Male	25/07/200	B.Com.	Third Year
PAYAL PRIYA	Female	15/07/200	MBA	Already Co
POOJA KUMARI	Female	15/11/200	B.Com.	Third Year
PRAHLAD RAJ	Male	08/03/200	B.Com.	Third Year
PRASHANT KUMAR	Male	18/08/199	MBA	Already Co
PRIYANKA KUMARI	Female	01/10/200	MBA	Already Co
Ranjeet Kumar Singh	Male	17/12/200	B.Com.	Third Year
RANVEER RANJAN	Male	02/04/200	MBA	Already Co
RAUSHAN RAJ	Male	12/11/200	B.Com.	Third Year
Rishav chaurasia	Male	07/05/200	MBA	Already Co
SAKSHI	Female	06/01/200	B.Com.	Third Year
SAKSHI KUMARI	Female	10/03/200	B.Com.	Third Year
SALONI	Female	18/08/200	B.Com.	Third Year
SAURAV	Male	03/10/200	MBA	Already Co
SAURAV RANJAN	Male	18/07/202	MBA	Already Co
SHAMMY PRIYA	Female	23/04/200	B.Com.	Third Year
SHIVANI KUMARI	Female	15/02/200	B.Com.	Third Year
SHREYA KUMARI	Female	23/02/200	B.Com.	Third Year
SHREYA RANI	Female	10/04/200	B.Com.	Third Year
SHUBHAM SINGH	Male	29/08/200	B.Com.	Third Year
Shweta gupta	Female	16/11/199	MBA	Second Yea
Simran bharti	Female	22/07/200	B.Com.	Third Year
SNEHA JAISWAL	Female	06/08/200	B.Com.	Third Year
SONALI KUMARI	Female	12/12/200	MBA	Already Co
SONAM KUMARI	Female	27/01/200	B.Com.	Third Year
SURBHI KUMARI	Female	11/09/200	MBA	Second Yea
Tanmay kumar	Male	22/11/200	B.Com.	Third Year
TANU SINGH	Female	08/11/200	B.Com.	Third Year

TRIPTI KUMARI	Female	06/04/199	MBA	Already Co
Varsha Kumari	Female	18/07/200	B.Com.	Third Year
VARSHA SRIVASTAVA	Female	28/06/200	B.Com.	Third Year
VISHAL KUMAR	Male	13/01/200	B.A.	Third Year

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Pallavi Gandhalikar 15 Jul

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2022

Pallavi Gandhalikar 30/12/2022

☆ Re: Rescheduling of CPBFI classes.
Dear Madam, Thanks, a lot for your mai...



Pallavi Gandhalikar

From: pallavi.gandhalikar@bajajfinserv.in

To: mridula singh, Amresh1 Kumar,
Rahul Kumar Basak, Reshma Mohite

Cc: Archana Bhat, Santosh Kumar Phy,
Shital Gaikwad

Sat, 14 Jan at 8:14 pm

Dear Mridula Madam,

Thanks a lot for your mail. Firstly I would like to share that any student's name if seen in her login ID not given should be known to Bajaj on Day-1 of the CPBFI training. I would like to know if 14th Dec was the day 1 or day-2 of the program? Usually if the query is raised, my team responds to it. @Rahul Kumar I would like to understand what was the progress on the other side and from my team's side, since you had been asked by the college to look into the s...

Madam, give me sometime and let me explore all these data points. If the student's log come late to us, we will not be able to add additional login ID. It's a mandate, where we need the coordinator to check each and every name in the list and whether they have the log in ID or not there, how did she join the KAIZALA group, remains a concern. Hence, once I know the picture, I will revert to you on the same. Give me time till Monday first half.

@Amresh1 and @Reshma Kindly connect on Monday 9.30am with me on a call, with

Regards
Pallavi

Pallavi Gandhalikar
National Head-CSR

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ave

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September

Rahul Kumar Basak 2 Sept
3rd Batch - CPBFI - virtual studen...
Dear Madam & Sir, Greetings! We...

July

Rahul Kumar Basak 21 Jul
Final List of Enrolled students
Dear Madam, Please find the final...

Rahul Kumar Basak 19 Jul
CONSENT LETTER for CPBFI batch...
Dear Madam, Greetings! Please fi...

Rahul Kumar Basak 14 Jul
CPBFI 2nd Batch Execution Plan
Dear Pallavi, We thank you and your ...

Rahul Kumar Basak 13 Jul
CPBFI - Batch performance report || ...
Dear Madam, Please find below the ...

Rahul Kumar Basak 6 Jul
BAJAJ MOU - Blue Dart -3138464568...

From: Rahul Kumar Basak
Sent: Tuesday, July 4, 2023 4:24 PM
To: 'mridula_ku@yahoo.com' <mridula_ku@yahoo.com>; 'santosh.phy@cocasp
<santosh.phy@cocaspatna.ac.in>; 'santoshkumar.coc@gmail.com'
<santoshkumar.coc@gmail.com>
Cc: Amresh Kumar <Amresh.Kumar@centumlearning.com>
Subject: CPBFI offerings || College of Commerce, Arts & Science

To,
The Department of Management/ IQAC team,
College of Commerce, Arts & Science
Patna,
Bihar,

Dear Sir/Madam,
Greetings from **Centum Learning** .
We have reached out to you with respect to **training project for the B.Com, BI
M.Com and MBA final year students** of your esteemed college. The Alumni st
below 27 years of age can also enrol to the program.
In order to improve employability of students, we would like them to participate
course of Banking, Financial Services, Insurance (CPBFI) program. We have tie
Finserv for execution of CPBFI Program in your district. We have been doing
the colleges in West Bengal, Jharkhand, Odisha, Bihar, UP & Uttarakhand and t
mentioned below.

Location	College
Patna	College of Commerce



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 Dear Madam, Please find below the ...

Rahul Kumar Basak 6 Jul
 ☆ BAJAJ MOU - Blue Dart -3138464568...

Benefits of the program:

1. Learn from industry professionals.
2. Students can apply for more than 15 -20 job role in industry post trainin
3. Preparation for the same can be done for the student who want to inves themselves to build value.
4. 96 hours of learning through corporate trainers with 2-3 hours of training;
5. 4 modules covered during the training:
 - a. 24 hours of Banking
 - b. 24 hours of Insurance
 - c. 36 hours of Communication Skills
 - d. 12 hours of Swaroop. Swaroop is based on the concepts and addresses aspects such as self-awareness, confidence decisions, assertiveness, stress management, positive regu emotions, etc.
6. Student get certificate from Bajaj Finserv along with the name of ti printed on it on successful completion of training.
7. At present, all sessions are in hybrid mode.
8. College will have direct agreement with Bajaj Finserv.

Responsibilities of College:

1. To provide Infrastructure for the trainings for the offline mode of training
2. College to line up one coordinator.
3. Mobilize students of their own college for the said program.
4. Minimum of 45 -50 student on an average / college per batch. Batch Si: Students.
5. College to charge fees of Rs. 1,000/- (Rs. One Thousand) student This collected amount becomes the revenue of thi



Students.

5. College to charge fees of Rs. 1,000/- (Rs. One Thousand) student. This collected amount becomes the revenue of the only.

Neither Centum nor Bajaj will ask for any remuneration from College or Students.

- 6. College to ensure that they don't promise any job guarantee and ensure attendance during the training program.
- 7. This project is for three years.

Criterion for college selection (any one of the below):

- 1. Colleges which receives grant from UGC, State Government etc.
- 2. NAAC Accreditation B+ and above.
- 3. In case the college is not NAAC accredited, we can still consider if good count of students is to be enrolled.

Though, CPBFI program is primarily meant for B.Com. students, but the Science Management stream final year students can also be considered.

Attendance compulsory - 75% minimum for the student. Higher the attendance chances of getting certificate.

Thanks & Regards
Rahul Kr Basak
State Coordinator

T: +91 - 9038703936
W: www.centumlearning.com



1.5+ Mn. People Skilled
15+ Countries
350+ Corporate Customers
21+ Industry Sectors

☆ Final List of...
Dear Madam, Please find the final...

Sept



21 Jul

Rahul Kumar Basak
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6 Jul





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Rahul Kumar Basak 6 Jul
 ☆ BAJAJ MOU - Blue Dart -3138464568...

Rahul

From: Rahul Kumar Basak
Sent: Tuesday, July 4, 2023 4:41 PM
To: 'mridula_ku@yahoo.com' <mridula_ku@yahoo.com>; 'santosh.phy@cocasp
 <santosh.phy@cocaspatna.ac.in>; 'santoshkumar.coc@gmail.com'
 <santoshkumar.coc@gmail.com>
Cc: Amresh Kumar <Amresh.Kumar@centumlearning.com>
Subject: CPBFI - virtual student interaction session 11th of July – 11:00 am

Dear Madam,
 Greetings!

As per our telephonic discussion we will be conducting the first round of student session with the participating students from the Commerce & Management depts upcoming 2nd batch of CPBFI Employability training program at COCAS.

This virtual interaction session is schedule on 11th of July – 2023 at 11:00 am.

I will be sharing the virtual link soon.

Regards
 Rahul

From: Rahul Kumar Basak
Sent: Tuesday, July 4, 2023 4:24 PM
To: 'mridula_ku@yahoo.com' <mridula_ku@yahoo.com>; 'santosh.phy@cocasp
 <santosh.phy@cocaspatna.ac.in>; 'santoshkumar.coc@gmail.com'



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Dear Madam, Please find below the ...

Rahul Kumar Basak 6 Jul

☆ BAJAJ MOU - Blue Dart -3138464568...

Dear Sir/Madam. BAJAJ has re sent t...

2022

Rahul Kumar Basak 1/12/2022

☆ COCAS || CPBFI || Student Details

Dear Madam, Greetings. Please fi...

Rahul Kumar Basak 25/11/2022

☆ CPBFI || BATCH Schedule || COCAS

Dear Sir & Madam, Greetings! Ple...

arch/name=Rahul%2520Kumar%2520Basak&emailAdd...

BAJAJ MOU - Blue Dart -31384645681 || tracking details

Yahoo/Inbox



Rahul Kumar Basak

From: a_rahul.basak@centumlearning.com

To: santoshkumar.coc@gmail.com,

santosh.phy@cocaspтна.ac.in,

mridula_ku@yahoo.com



Thu, 6 Jul at 2:12 pm

Dear Sir/Madam.

BAJAJ has re sent the MOU at the College address.

Please find the tracking details.

Regards

Rahul

Location	Details
Patna Service Centre	Shipment Delivered
Patna Service Centre	Shipment Out For Delivery

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July

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Rahul Kumar Basak 25/11/2022

☆ CPBFI || BATCH Schedule || COCAS

Dear Sir & Madam, Greetings! Pl...

CPBFI - Batch performance report || CPBFI 668

Yahoo/Inbox



Rahul Kumar Basak

From: a_rahul.basak@centumlearning.com

To: mridula_ku@yahoo.com

Cc: santoshkumar.coc@gmail.com,

santosh.phy@cocaspatna.ac.in



Thu, 13 Jul at 1:54 pm



Dear Madam,

Please find below the Batch Performance Report for CPBFI batch 668 – College of Comm

BFS Batch Number	Center Name	Town
668	College of Commerce, Arts & Science, Patna	Patna

Madam, for the 2nd Batch of CPBFI at COCAS we will only allow those students who are

Regards

Rahul



This email and any files transmitted with it are confidential and intended solely for the use

h/name=Rahul%2520Kumar%2520Basak&emailAddresses=a_rahul.basak%2540centumlearning.com&listFilter=FROM&contactIds=295b.20cc/messages/AMYRPYdYKCqsZK-0owNH2



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Dear Sir & Madam, Greetings! Ple...

CPBFI 2nd Batch Execution Plan

Yahoo/Inbox



Rahul Kumar Basak

From: a_rahul.basak@centumlearning.com

To: mridula_ku@yahoo.com

Cc: santosh.phy@cocaspatna.ac.in



Fri, 14 Jul at 3:20 pm



Dear Pallavi,

We thank you and your entire team for the valuable contribution done to enhance the skills of our college students.

This is just to give you all an update that I was having a discussion with Centum team (Rahul & Amresh) to plan a 2nd batch and i was told that the performance of the 1st batch was dismal. Let me give you all a complete clarity in terms of enrollment and the attendance.

Total Enrollment: 68

Post Launch, Students showed discomfort and withdrew their names: 13

Net Enrollment: 55

No. Of Regular Students: 42

Students With more than 75% attendance: 60%

No. of students who appeared for Pre Assessment: 54

Since, it was the 1st batch of the college we were also in our initial phase and we were pretty sure about the students participation. However, post going through the RPB (Batch Performance Report), we are coming up with the concrete action

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Pallavi Gandhalikar

15 Jul

☆ RE: execution of 2nd batch of CPBFI in ...

Looping in my operations team @Shital...



Pallavi Gandhalikar

15 Jul

☆ RE: execution of 2nd batch of CPBFI in ...

Dear Mridula Madam, Thanks a lot for s...

Earlier in 2023



Pallavi Gandhalikar

14 Jan

☆ RE: BFSID of Nandini CPBFI, 67th ba...

Dear Mridula Madam, Thanks a lot f...

2022



Pallavi Gandhalikar

30/12/2022

☆ Re: Rescheduling of CPBFI classes.

Dear Madam, Thanks, a lot for your mai...

From: Pallavi Gandhalikar

Sent: 15 July 2023 12:36 PM

To: mridula singh <mridula_ku@yahoo.com>

Cc: Archana Bhat <archana.bhat@bajajfinserv.in>; Rahul Kumar Basak

<a_Rahul.Basak@centumlearning.com>; Amresh1 Kumar

<a_Amresh.Kumar@centumlearning.com>; Santosh Kumar Phy

<santoshkumar.coc@gmail.com>

Subject: RE: execution of 2nd batch of CPBFI in COCAS, Patna

Dear Mridula Madam,

Thanks a lot for spending quality time on the data for the first batch and I truly appreciate the college's effort to own the responsibility and sharing with Bajaj what will you do differently in your second batch. Approved and looking forward to meet you in person for the launch of the second batch.

Regards

Pallavi Gandhalikar

Head-BEYOND



ATTITUDE

Course 1: Managing Self - SwaRooop

- SwaRooop orientation
- My Self
- Self-belief - staying assertive
- Mind-body connections and Self-talk
- What are emotions
- Regulating emotions
- What is belief
- ABC Principle of REBT
- Rational and irrational beliefs
- Decision making
- Daily challenges

SKILLS

Course 2: Communication and Workplace Skills

- What is communication
- Goals and barriers in communication
- Modes of communication
- Listening skills and empathy
- Non-verbal expression skills
- Summarisation skills
- Effective communication
- Use of language in communication
- Spoken communication
- Telephonic communication
- Written communication
- Giving and receiving feedback
- Saying and taking NO
- Persuasion and influencing skills
- Working in teams
- Group discussion skills
- Goals and targets at workplace
- Representing self
- Job interview techniques
- Job interview demonstration

KNOWLEDGE

Course 3: Overview of Retail Banking

- Introduction to Banking
- Introduction to Branch Banking
- Customers and Their Needs
- Overview of Banking Products
- Liability Products
- Asset Products
- Third Party and Fee-based Products
- Business Development
- Transaction Processing
- Customer Service
- Compliance and Ethics
- Future of Banking
- Inclusive Banking
- Introduction to NBFCs
- Overview of Corporate Banking
- Banking and Me

KNOWLEDGE

Course 4: Overview of Insurance

- Need for Insurance
- Evolution of Insurance
- Overview of an Insurance Company
- Overview of Retail Insurance Products
- Overview of the Companion Products
- Overview of Insurance Distribution Channels
- Selling Insurance
- Insurance Operations
- Customer Service
- Ethics and Compliance in Insurance
- Future of Insurance
- Inclusive Insurance
- Profitability Drivers for Insurance
- Mock interviews by corporate recruiters

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September

Rahul Kumar Basak 2 Sept
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CPBFI - Batch performance report || ...
Dear Madam, Please find below the ...

Rahul Kumar Basak 6 Jul

CONSENT LETTER for CPBFI batch formation ||
COCAS - Batch 2

Yahoo/Inbox



Rahul Kumar Basak

From:

a_rahul.basak@centumlearning.com

To: mridula_ku@yahoo.com

Cc: santosh.phy@cocaspatna.ac.in



Wed, 19 Jul at 12:06 am



Dear Madam,
Greetings!

Please find the format of the Consent letter which we will require to start the 2nd
batch of CPBFI at COCAS.

Request you to please take the print out of the attached file (2.0 College
Confirmation Checklist for batch formation) in the College letter head.

Madam, for your reference I have attached the Consent letter that was shared to
us by Dr. Santosh Sir for the commencement of first batch of CPBFI from COCAS.

Regards

Rahul.





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September



Rahul Kumar Basak

2 Sept

☆ 3rd Batch - CPBFI - virtual studen...

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Rahul Kumar Basak

21 Jul

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13 Jul

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Dear Madam, Please find below the ...



Rahul Kumar Basak

6 Jul

☆ BAJAJ MOU - Blue Dart -3138464568...

Final List of Enrolled students

Yahoo/Inbox ☆



Rahul Kumar Basak

From:

a_rahul.basak@centumlearning.com

To: mridula_ku@yahoo.com,

dr.mridula7@gmail.com

Cc: santosh.phy@cocaspтна.ac.in



Fri, 21 Jul at 12:58 pm ☆

Dear Madam,

Please find the final list of the enrolled students for the COBFI batch 2.

Regards



This email and any files transmitted with it are confidential and intended solely for the use of the individual or entity to whom they are addressed. If you have received this email in error please notify the system manager. This message contains confidential information and is intended only for the individual named. If you are not the named addressee you should not disseminate, distribute or copy this e-mail. Please notify the sender immediately by e-mail if you have received this e-mail by mistake and delete this e-mail from your system. If you are not the intended recipient you are notified that disclosing, copying, distributing or taking any action in reliance on the contents of this information is strictly prohibited. The information



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Rahul Kumar Basak 6 Jul
☆ BAJAJ MOU - Blue Dart -3138464568...

3rd Batch - CPBFI - virtual student information sharing session 4th of September - 06:00 pm

Yahoo/Inbox



Rahul Kumar Basak

From: a_rahul.basak@centumlearning.com
To: mridula_ku@yahoo.com
Cc: dr.mridula7@gmail.com, santosh.phy@cocaspatna.ac.in, Amresh Kumar



Sat, 2 Sept at 2:58 pm

Dear Madam & Sir,
Greetings!

We thank you & Santosh Sir for the trust and support on CPBFI employability program. Madam, as per our discussion today request you to please find the student interest link which is **schedule on 4th of September, Monday at 6:00 pm**.

Kindly share the meeting link with the students who will be participating in the **3rd CPBFI employability training program**.

The session will start at 6:00 pm .
The link :-
<https://meet.google.com/nuw-wrse-wtv>



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Archana Bhat

7 Sept

☆ RE: testimonial

Dear Mam, Thank you so much for the ...



Archana Bhat

16 May

☆ FW: Bajaj Finserv Limited | CPBFI | C...

Dear Sir / Madam, Greetings for the...



Archana Bhat

30/11/2022

☆ RE: Deletion of names from CPBFI 668 ...

Dear Mam, Greetings for the day! This c...

From: mridula singh <mridula_ku@yahoo.com>**Sent:** 06 September 2023 16:58**To:** Archana Bhat <archana.bhat@bajajfinserv.in>**Subject:** testimonial

CAUTION: This email is originated from outside of the organization. Watch the URL link very carefully before opening. Do not open attachments and links unless you recognize the sender Email ID and know the content is safe.

Hi, myself Dr. Mridula Kumari, Professor in the Department of Economics, College of Commerce, Arts and Science, Patna. I am also the coordinator of CPBFI program running in our college. This is a wonderful program aimed at enhancing the employability of our students. First batch of this program in our college was launched in 2022. Second batch is about to complete this course and third batch will be launched soon in this month itself. The entire course of about hundred hours is meticulously organized in such a manner that students get practical knowledge in the field of banking, insurance and finance which are the most promising sectors from employment point of view. Personality development through Swaroop and Communication and workplace skill development are other features of this program which are of great benefit for our students. This program helped our students to get employment in various organizations.

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Archana Bhat

7 Sept

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Archana Bhat

16 May

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Dear Sir / Madam, Greetings for the...



Archana Bhat

30/11/2022

☆ RE: Deletion of names from CPBFI 668 ...

Dear Mam, Greetings for the day! This c...

• RE: testimonial

Yahoo/Inbox ☆



• Archana Bhat

From: archana.bhat@bajajfinserv.in

To: mridula.singh



Thu, 7 Sept at 10:42 am



Dear Mam,

Thank you so much for the prompt response!

This really helps and will try to use these in our Marketing Collaterals 😊. Thank you for joining hands and helping us reach to more Partners and taking this social initiative across the country.

Thank You!

Regards,

Archana

Archana Bhat

Training Operations- CPBFI (Certificate Program in Banking, Finance and Insurance)

Sr. Manager, Corporate Social Responsibility

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Pallavi Gandhalikar

15 Jul

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15 Jul

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RE: execution of 2nd batch of CPBFI in COCAS, Patna

Yahoo/Inbox



Pallavi Gandhalikar



Sat, 15 Jul at 12:36 pm

From: pallavi.gandhalikar@bajajfinserv.in

To: mridula singh

Cc: Archana Bhat, Rahul Kumar Basak, Amresh1 Kumar, Santosh Kumar Phy

Dear Mridula Madam,

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Regards

Pallavi Gandhalikar

Head-BEYOND

From: mridula singh <mridula_ku@yahoo.com>

Sent: 14 July 2023 10:48 PM

To: Pallavi Gandhalikar <pallavi.gandhalikar@bajajfinserv.in>

Cc: Archana Bhat <archana.bhat@bajajfinserv.in>; Rahul Kumar Basak <a_Rahul.Basak@centumlearning.com>; Amresh1 Kumar <a_Amresh.Kumar@centumlearning.com>; Santosh Kumar Phy <santoshkumar.coc@gmail.com>

Subject: execution of 2nd batch of CPBFI in COCAS, Patna

July

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Pallavi Gandhalikar 15 Jul
☆ RE: execution of 2nd batch of CPBFI in ...
Looping in my operations team @Shital...

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Dear Mridula Madam, Thanks a lot for s...

Earlier in 2023

Pallavi Gandhalikar 14 Jan
☆ RE: BFSID of Nandini CPBFI, 67th ba...
Dear Mridula Madam, Thanks a lot f... 📎

2022

Pallavi Gandhalikar 30/12/2022
☆ Re: Rescheduling of CPBFI classes.
Dear Madam, Thanks, a lot for your mai...

From:

pallavi.gandhalikar@bajajfinserv.in

To: Mridula Kumari

Cc: Archana Bhat,

a_rahul.basak@centumlearning.com,

a_amresh.kumar@centumlearning.com

, Santosh Kumar Phy

Dear Madam,

Thanks, a lot for your mail and request you to share the revised batch h schedule to Bajaj. We will review and accordingly revert. If exams are coming up, we understand the concerns and hence will support the learners to the best of our capacity.

Regards

Pallavi

Get [Outlook for iOS](#)

From: Mridula Kumari <mridula_ku@yahoo.com>

Sent: Friday, December 30, 2022 5:20:25 PM

To: Pallavi Gandhalikar <pallavi.gandhalikar@bajajfinserv.in>

Cc: Archana Bhat <archana.bhat@bajajfinserv.in>;

a_rahul.basak@centumlearning.com <a_rahul.basak@centumlearning.com>;

a_amresh.kumar@centumlearning.com

<a_amresh.kumar@centumlearning.com>; Santosh Kumar Phy

<santoshkumar.coc@gmail.com>

Subject: Rescheduling of CPBFI classes.

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July



Rahul Kumar Basak

19 Jul

☆ CONSENT LETTER for CPBFI batch...

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Rahul Kumar Basak

14 Jul

☆ CPBFI 2nd Batch Execution Plan

Dear Pallavi, We thank you and your ...



Rahul Kumar Basak

13 Jul

☆ CPBFI - Batch performance report || ...

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Rahul Kumar Basak

6 Jul

☆ BAJAJ MOU - Blue Dart -3138464568...

Dear Sir/Madam. BAJAJ has re sent t...

2022



Rahul Kumar Basak

1/12/2022

☆ COCAS || CPBFI || Student Details

Dear Madam, Greetings. Please fi...



Rahul Kumar Basak

25/11/2022

☆ CPBFI || BATCH Schedule || COCAS

Dear Sir & Madam, Greetings! Ple...

• CPBFI || BATCH Schedule || COCAS

Yahoo/Inbox ☆



• Rahul Kumar Basak

From:

a_rahul.basak@centumlearning.co

To:

santoshkumar.coc@gmail.com,

santosh.phy@cocaspatna.ac.in,

mridula_ku@yahoo.com



Fri, 25 Nov, 2022 at 8:45 pm



Dear Sir & Madam,
Greetings!

Please find the schedule of CPBFI Employability Program of College of
Commerce, Arts & Science Patna.
We will follow this schedule.

Regards.



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☆ COCAS || CPBFI || Student Details

Dear Madam, Greetings. Please fi...

Rahul Kumar Basak 25/11/2022

☆ CPBFI || BATCH Schedule || COCAS

COCAS || CPBFI || Student Details

Yahoo/inbox ☆



Rahul Kumar Basak

From:

a_rahul.basak@centumlearning.co

To: mridula_ku@yahoo.com



Thu, 1 Dec, 2022 at 9:15 am



Dear Madam,
Greetings.

Please find the details of the students.

Regards



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Your Full Name	Gender	Date of Bir	Which deg	Year
AADITYA RAJ	Male	01/10/200	B.A.	Third Year
Abhishek kumar	Male	01/01/200	B.Com.	Third Year
ABHISHEK KUMAR	Male	13/03/200	MBA	Already Co
ABHISHEK KUMAR	Male	15/09/199	MBA	Already Co
Aditi	Female	10/06/200	B.Com.	Third Year
AMAR KUMAR	Male	25/08/200	B.A.	Third Year
AMIT KUMAR MISHRA	Male	26/07/199	MBA	Second Yea
AMITESH KUMAR	Male	26/05/200	MBA	Already Co
ANSHU KUMARI RAY	Female	01/08/200	B.Com.	Third Year
HEMANSHU PRIYA	Female	28/06/200	MBA	Already Co
HEMANSHU PRIYA	Female	28/06/200	MBA	Third Year
HIMANSHU KUMAR	Male	25/11/200	B.Com.	Third Year
HIMANSHU RAJA	Male	10/03/200	B.Com.	Third Year
KUMAR MANAS	Male	03/03/200	MBA	Already Co
MANAN ANAND	Male	20/02/199	MBA	Already Co
Mandvi Kumari	Female	01/03/200	B.Com.	Third Year
Md Saif ali	Male	12/02/199	MBA	Already Co
MONIKA KUMARI	Female	29/02/200	B.Com.	Third Year
Nisha Bharti	Female	14/03/200	B.Com.	Third Year
NISHI KAPOOR	Female	08/04/200	MBA	Already Co
NITU KUMARI	Female	25/03/200	B.Com.	Third Year
PARTH CHAURASIA	Male	25/07/200	B.Com.	Third Year
PAYAL PRIYA	Female	15/07/200	MBA	Already Co
POOJA KUMARI	Female	15/11/200	B.Com.	Third Year
PRAHLAD RAJ	Male	08/03/200	B.Com.	Third Year
PRASHANT KUMAR	Male	18/08/199	MBA	Already Co
PRIYANKA KUMARI	Female	01/10/200	MBA	Already Co
Ranjeet Kumar Singh	Male	17/12/200	B.Com.	Third Year
RANVEER RANJAN	Male	02/04/200	MBA	Already Co
RAUSHAN RAJ	Male	12/11/200	B.Com.	Third Year
Rishav chaurasia	Male	07/05/200	MBA	Already Co
SAKSHI	Female	06/01/200	B.Com.	Third Year
SAKSHI KUMARI	Female	10/03/200	B.Com.	Third Year
SALONI	Female	18/08/200	B.Com.	Third Year
SAURAV	Male	03/10/200	MBA	Already Co
SAURAV RANJAN	Male	18/07/202	MBA	Already Co
SHAMMY PRIYA	Female	23/04/200	B.Com.	Third Year
SHIVANI KUMARI	Female	15/02/200	B.Com.	Third Year
SHREYA KUMARI	Female	23/02/200	B.Com.	Third Year
SHREYA RANI	Female	10/04/200	B.Com.	Third Year
SHUBHAM SINGH	Male	29/08/200	B.Com.	Third Year
Shweta gupta	Female	16/11/199	MBA	Second Yea
Simran bharti	Female	22/07/200	B.Com.	Third Year
SNEHA JAISWAL	Female	06/08/200	B.Com.	Third Year
SONALI KUMARI	Female	12/12/200	MBA	Already Co
SONAM KUMARI	Female	27/01/200	B.Com.	Third Year
SURBHI KUMARI	Female	11/09/200	MBA	Second Yea
Tanmay kumar	Male	22/11/200	B.Com.	Third Year
TANU SINGH	Female	08/11/200	B.Com.	Third Year

TRIPTI KUMARI	Female	06/04/199	MBA	Already Co
Varsha Kumari	Female	18/07/200	B.Com.	Third Year
VARSHA SRIVASTAVA	Female	28/06/200	B.Com.	Third Year
VISHAL KUMAR	Male	13/01/200	B.A.	Third Year

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July

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Pallavi Gandhalikar 15 Jul

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Pallavi Gandhalikar 30/12/2022

☆ Re: Rescheduling of CPBFI classes.
Dear Madam, Thanks, a lot for your mai...



Pallavi Gandhalikar

From: pallavi.gandhalikar@bajajfinserv.in

To: mridula singh, Amresh1 Kumar,
Rahul Kumar Basak, Reshma Mohite

Cc: Archana Bhat, Santosh Kumar Phy,
Shital Gaikwad

Sat, 14 Jan at 8:14 pm

Dear Mridula Madam,

Thanks a lot for your mail. Firstly I would like to share that any student's name if seen m her login ID not given should be known to Bajaj on Day-1 of the CPBFI training. I would l if 14th Dec was the day 1 or day-2 of the program? Usually if the query is raised, my tea responds to it. @Rahul Kumar I would like to understand what was the progress on th side and from my team's side, since you had been asked by the college to look into the s

Madam, give me sometime and let me explore all these data points. If the student's log come late to us, we will not be able to add additional login ID. It's a mandate, where we coordinator to check each and every name in the list and whether they have the log in I not there, how did she join the KAIZALA group, remains a concern. Hence, once I know picture, I will revert to you on the same. Give me time till Monday first half.

@Amresh1 and @Reshma Kindly connect on Monday 9.30am with me on a call, with

Regards
Pallavi

Pallavi Gandhalikar
National Head-CSR

You
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ave

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September

Rahul Kumar Basak 2 Sept
3rd Batch - CPBFI - virtual studen...
Dear Madam & Sir, Greetings! We...

July

Rahul Kumar Basak 21 Jul
Final List of Enrolled students
Dear Madam, Please find the final...

Rahul Kumar Basak 19 Jul
CONSENT LETTER for CPBFI batch...
Dear Madam, Greetings! Please fi...

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Dear Pallavi, We thank you and your ...

Rahul Kumar Basak 13 Jul
CPBFI - Batch performance report || ...
Dear Madam, Please find below the ...

Rahul Kumar Basak 6 Jul
BAJAJ MOU - Blue Dart -3138464568...

From: Rahul Kumar Basak
Sent: Tuesday, July 4, 2023 4:24 PM
To: 'mridula_ku@yahoo.com' <mridula_ku@yahoo.com>; 'santosh.phy@cocasp
<santosh.phy@cocaspatna.ac.in>; 'santoshkumar.coc@gmail.com'
<santoshkumar.coc@gmail.com>
Cc: Amresh Kumar <Amresh.Kumar@centumlearning.com>
Subject: CPBFI offerings || College of Commerce, Arts & Science

To,
The Department of Management/ IQAC team,
College of Commerce, Arts & Science
Patna,
Bihar,

Dear Sir/Madam,
Greetings from **Centum Learning** .
We have reached out to you with respect to training project for the B.Com, BI
M.Com and MBA final year students of your esteemed college. The Alumni st
below 27 years of age can also enrol to the program.
In order to improve employability of students, we would like them to participate
course of Banking, Financial Services, Insurance (CPBFI) program. We have tie
Finserv for execution of CPBFI Program in your district. We have been doing
the colleges in West Bengal, Jharkhand, Odisha, Bihar, UP & Uttarakhand and t
mentioned below.

Location	College
Patna	College of Commerce



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Rahul Kumar Basak 2 Sept
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Rahul Kumar Basak 13 Jul
 ☆ CPBFI - Batch performance report II ...
 Dear Madam, Please find below the ...

Rahul Kumar Basak 6 Jul
 ☆ BAJAJ MOU - Blue Dart -3138464568...

Benefits of the program:

1. Learn from industry professionals.
2. Students can apply for more than 15 -20 job role in industry post trainin
3. Preparation for the same can be done for the student who want to inves themselves to build value.
4. 96 hours of learning through corporate trainers with 2-3 hours of training;
5. 4 modules covered during the training:
 - a. 24 hours of Banking
 - b. 24 hours of Insurance
 - c. 36 hours of Communication Skills
 - d. 12 hours of Swaroop. Swaroop is based on the concepts and addresses aspects such as self-awareness, confidence decisions, assertiveness, stress management, positive regu emotions, etc.
6. Student get certificate from Bajaj Finserv along with the name of ti printed on it on successful completion of training.
7. At present, all sessions are in hybrid mode.
8. College will have direct agreement with Bajaj Finserv.

Responsibilities of College:

1. To provide Infrastructure for the trainings for the offline mode of training
2. College to line up one coordinator.
3. Mobilize students of their own college for the said program.
4. Minimum of 45 -50 student on an average / college per batch. Batch Si: Students.
5. College to charge fees of Rs. 1,000/- (Rs. One Thousand) student This collected amount becomes the revenue of thi



Students.

5. College to charge fees of Rs. 1,000/- (Rs. One Thousand) student. This collected amount becomes the revenue of the only.

Neither Centum nor Bajaj will ask for any remuneration from College or Students.

- 6. College to ensure that they don't promise any job guarantee and ensure attendance during the training program.
- 7. This project is for three years.

Criterion for college selection (any one of the below):

- 1. Colleges which receives grant from UGC, State Government etc.
- 2. NAAC Accreditation B+ and above.
- 3. In case the college is not NAAC accredited, we can still consider if good count of students is to be enrolled.

Though, CPBFI program is primarily meant for B.Com. students, but the Science Management stream final year students can also be considered.

Attendance compulsory - 75% minimum for the student. Higher the attendance chances of getting certificate.

Thanks & Regards
Rahul Kr Basak
State Coordinator

T: +91 - 9038703936
W: www.centumlearning.com



1.5+ Mn. People Skilled
15+ Countries
350+ Corporate Customers
21+ Industry Sectors

☆ Final List...
Dear Madam, Please find the final...

21 Jul
Rahul Kumar Basak
☆ CONSENT LETTER for CPBFI batch...
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Rahul Kumar Basak
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☆ CPBFI - Batch performance report || ...
Dear Madam, Please find below the ...

13 Jul
Rahul Kumar Basak
☆ BAJAJ MOU - Blue Dart -3138464568...



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Rahul Kumar Basak 6 Jul
 ☆ BAJAJ MOU - Blue Dart -3138464568...

Rahul

From: Rahul Kumar Basak
Sent: Tuesday, July 4, 2023 4:41 PM
To: 'mridula_ku@yahoo.com' <mridula_ku@yahoo.com>; 'santosh.phy@cocasp
 <santosh.phy@cocaspatna.ac.in>; 'santoshkumar.coc@gmail.com'
 <santoshkumar.coc@gmail.com>
Cc: Amresh Kumar <Amresh.Kumar@centumlearning.com>
Subject: CPBFI - virtual student interaction session 11th of July – 11:00 am

Dear Madam,
 Greetings!

As per our telephonic discussion we will be conducting the first round of student session with the participating students from the Commerce & Management depts upcoming 2nd batch of CPBFI Employability training program at COCAS.

This virtual interaction session is schedule on 11th of July – 2023 at 11:00 am.

I will be sharing the virtual link soon.

Regards
 Rahul

From: Rahul Kumar Basak
Sent: Tuesday, July 4, 2023 4:24 PM
To: 'mridula_ku@yahoo.com' <mridula_ku@yahoo.com>; 'santosh.phy@cocasp
 <santosh.phy@cocaspatna.ac.in>; 'santoshkumar.coc@gmail.com'



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2022

Rahul Kumar Basak 1/12/2022
☆ COCAS || CPBFI || Student Details
Dear Madam, Greetings. Please fi...

Rahul Kumar Basak 25/11/2022
☆ CPBFI || BATCH Schedule || COCAS
Dear Sir & Madam, Greetings! Ple...

arch/name=Rahul%2520Kumar%2520Basak&emailAdd...

BAJAJ MOU - Blue Dart -31384645681 || tracking details

Yahoo/Inbox ☆



Rahul Kumar Basak



Thu, 6 Jul at 2:12 pm ☆

From: a_rahul.basak@centumlearning.com

To: santoshkumar.coc@gmail.com,

santosh.phy@cocaspтна.ac.in,

mridula_ku@yahoo.com

Dear Sir/Madam.

BAJAJ has re sent the MOU at the College address.

Please find the tracking details.

Regards

Rahul

Location	Details
Patna Service Centre	Shipment Delivered
Patna Service Centre	Shipment Out For Delivery

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☆ CPBFI || BATCH Schedule || COCAS

Dear Sir & Madam, Greetings! Pl...

CPBFI - Batch performance report || CPBFI 668

Yahoo/Inbox ☆



Rahul Kumar Basak

From: a_rahul.basak@centumlearning.com

To: mridula_ku@yahoo.com

Cc: santoshkumar.coc@gmail.com,

santosh.phy@cocaspatna.ac.in



Thu, 13 Jul at 1:54 pm



Dear Madam,

Please find below the Batch Performance Report for CPBFI batch 668 – College of Comm

BFS Batch Number	Center Name	Town
668	College of Commerce, Arts & Science, Patna	Patna

Madam, for the 2nd Batch of CPBFI at COCAS we will only allow those students who are

Regards

Rahul



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h/name=Rahul%2520Kumar%2520Basak&emailAddresses=a_rahul.basak%2540centumlearning.com&listFilter=FROM&contactIds=295b.20cc/messages/AMYRPYdYKCqsZK-0owNH2



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Yahoo/Inbox

CPBFI 2nd Batch Execution Plan



Rahul Kumar Basak

From: a_rahul.basak@centumlearning.com

To: mridula_ku@yahoo.com

Cc: santosh.phy@cocaspatna.ac.in



Fri, 14 Jul at 3:20 pm



Dear Pallavi,

We thank you and your entire team for the valuable contribution done to enhance the skills of our college students.

This is just to give you all an update that I was having a discussion with Centum team (Rahul & Amresh) to plan a 2nd batch and i was told that the performance of the 1st batch was dismal. Let me give you all a complete clarity in terms of enrollment and the attendance.

Total Enrollment: 68

Post Launch, Students showed discomfort and withdrew their names: 13

Net Enrollment: 55

No. Of Regular Students: 42

Students With more than 75% attendance: 60%

No. of students who appeared for Pre Assessment: 54

Since, it was the 1st batch of the college we were also in our initial phase and we were pretty sure about the students participation. However, post going through the RPB (Batch Performance Report), we are coming up with the concrete action

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Pallavi Gandhalikar

15 Jul

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2022



Pallavi Gandhalikar

30/12/2022

☆ Re: Rescheduling of CPBFI classes.

Dear Madam, Thanks, a lot for your mai...

From: Pallavi Gandhalikar

Sent: 15 July 2023 12:36 PM

To: mridula singh <mridula_ku@yahoo.com>

Cc: Archana Bhat <archana.bhat@bajajfinserv.in>; Rahul Kumar Basak

<a_Rahul.Basak@centumlearning.com>; Amresh1 Kumar

<a_Amresh.Kumar@centumlearning.com>; Santosh Kumar Phy

<santoshkumar.coc@gmail.com>

Subject: RE: execution of 2nd batch of CPBFI in COCAS, Patna

Dear Mridula Madam,

Thanks a lot for spending quality time on the data for the first batch and I truly appreciate the college's effort to own the responsibility and sharing with Bajaj what will you do differently in your second batch. Approved and looking forward to meet you in person for the launch of the second batch.

Regards

Pallavi Gandhalikar

Head-BEYOND



ATTITUDE

Course 1: Managing Self - SwaRooop

- SwaRooop orientation
- My Self
- Self-belief - staying assertive
- Mind-body connections and Self-talk
- What are emotions
- Regulating emotions
- What is belief
- ABC Principle of REBT
- Rational and irrational beliefs
- Decision making
- Daily challenges

SKILLS

Course 2: Communication and Workplace Skills

- What is communication
- Goals and barriers in communication
- Modes of communication
- Listening skills and empathy
- Non-verbal expression skills
- Summarisation skills
- Effective communication
- Use of language in communication
- Spoken communication
- Telephonic communication
- Written communication
- Giving and receiving feedback
- Saying and taking NO
- Persuasion and influencing skills
- Working in teams
- Group discussion skills
- Goals and targets at workplace
- Representing self
- Job interview techniques
- Job interview demonstration

KNOWLEDGE

Course 3: Overview of Retail Banking

- Introduction to Banking
- Introduction to Branch Banking
- Customers and Their Needs
- Overview of Banking Products
- Liability Products
- Asset Products
- Third Party and Fee-based Products
- Business Development
- Transaction Processing
- Customer Service
- Compliance and Ethics
- Future of Banking
- Inclusive Banking
- Introduction to NBFCs
- Overview of Corporate Banking
- Banking and Me

KNOWLEDGE

Course 4: Overview of Insurance

- Need for Insurance
- Evolution of Insurance
- Overview of an Insurance Company
- Overview of Retail Insurance Products
- Overview of the Companion Products
- Overview of Insurance Distribution Channels
- Selling Insurance
- Insurance Operations
- Customer Service
- Ethics and Compliance in Insurance
- Future of Insurance
- Inclusive Insurance
- Profitability Drivers for Insurance
- Mock interviews by corporate recruiters

7



Comment



Highlight



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More tools



प्रशिक्षण से छात्रों को मिलेंगे रोजगार

पटना | कॉलेज ऑफ कामर्स में चल रहा 22 दिवसीय प्रशिक्षण कार्यक्रम गुरुवार को संपन्न हो गया। कार्यक्रम कंसल्टेंटसी सर्विसेज द्वारा लगभग दो सौ छात्रों को प्रशिक्षण दिया गया। टाटा कंसल्टेंटसी के रिजनल लीड राहुल झा, अली जौहर ने कहा कि इस प्रशिक्षण के बाद छात्रों को रोजगार के प्रॉपर्टिज मिलेंगे। इंड्रजीत प्रसाद राय ने कहा कि महाविद्यालय के छात्रों को रोजगार उपलब्ध करवाया जा सके। उन्होंने कहा कि भविष्य में भी इस तरह के प्रशिक्षण कार्यक्रम आयोजित किए जाएंगे। कार्यक्रम का संयोजक प्रो रश्मि अख्तरी ने कहा कि प्रशिक्षण से छात्रों का प्रोफेशनल रूप सर्वांगीण विकास हुआ है। इस

कालेज ऑफ कामर्स में टी सी एस का रोजगार प्रशिक्षण कार्यक्रम सम्पन्न

पटना (आससे)। कालेज ऑफ कामर्स में बाइस दिवसीय रोजगार प्रशिक्षण कार्यक्रम गुरुवार को सम्पन्न हो गया। भारत की सबसे बड़ी साफ्टवेयर कम्पनी टाटा कंसल्टेंटसी सर्विसेज द्वारा लगभग दो सौ छात्रों को प्रशिक्षण दिया गया। टाटा कंसल्टेंटसी के रिजनल लीड राहुल झा, अली जौहर और उत्तम झा ने कहा कि इस प्रशिक्षण के बाद छात्रों को रोजगार के अवसर मिलेंगे। कार्यक्रम का उद्घाटन करते हुए प्रिंसिपल प्रो इंद्रजीत प्रसाद राय ने कहा कि महाविद्यालय का प्रयास है कि अधिक से अधिक छात्रों को रोजगार उपलब्ध करवाया जा सके। उन्होंने कहा कि भविष्य में भी इस तरह के प्रशिक्षण कार्यक्रम आयोजित किए जाएंगे। कार्यक्रम का संयोजक प्रो रश्मि अख्तरी ने कहा कि प्रशिक्षण से छात्रों का प्रोफेशनल रूप सर्वांगीण विकास हुआ है। इस

कॉलेज ऑफ कॉमर्स में रोजगार प्रशिक्षण कार्यक्रम

पटना। कॉलेज ऑफ कॉमर्स में 22 दिवसीय रोजगार प्रशिक्षण कार्यक्रम गुरुवार को सम्पन्न हो गया। भारत की सबसे बड़ी साफ्टवेयर कम्पनी टाटा कंसल्टेंटसी सर्विसेज द्वारा लगभग दो सौ छात्रों को प्रशिक्षण दिया गया।

टाटा कंसल्टेंटसी ने दो सौ छात्रों को किया प्रशिक्षित



कालेज ऑफ कामर्स में टी सी एस का रोजगार प्रशिक्षण कार्यक्रम संपन्न



पटना। कॉलेज ऑफ कॉमर्स में 22 दिवसीय रोजगार प्रशिक्षण कार्यक्रम गुरुवार को

पटना। कॉलेज ऑफ कॉमर्स में टी सी एस का रोजगार प्रशिक्षण कार्यक्रम संपन्न



कॉलेज ऑफ कॉमर्स के 69 छात्रों का कैम्पस सलेक्शन

नियोजन मेले में बांटे गए नियुक्ति पत्र।

पटना | राष्ट्रीय स्तर पर आयोजित हुए नियोजन मेले में 69 छात्रों को टाटा कॉन्सल्टेंसी एंड साइंस प्रोफेशनल सर्विसेज लिमिटेड (टीसीएस) द्वारा नियुक्ति पत्र प्रदान किए गए।

यह समारोह पटना में 4, पीएम एडवेंस में 4, डिप्टी में एक, जूनियर 2, सिलेक्टेड का पत्र प्रदान किया गया।



कॉलेज ऑफ कॉमर्स के 69 विद्यार्थियों का हुआ कैम्पस सेलेक्शन

संवाददाता, पटना

कॉलेज ऑफ कॉमर्स आर्ट्स एंड साइंस पटना में चलाये गये कैम्पस सेलेक्शन ड्राइव में कुल 69 विद्यार्थियों का चयन किया गया। इसमें बीसीए, बीएससी आईटी, बीकॉम, अर्थशास्त्र और मनोविज्ञान विभाग के विद्यार्थियों का सेलेक्शन किया गया। कैम्पस सेलेक्शन ड्राइव में चयनित विद्यार्थियों को प्रधानाचार्य प्रोफेसर इंद्रजीत प्रसाद राय और प्रशिक्षण एवं प्लेसमेंट सेल की संयोजक प्रोफेसर

रश्मि अखौरी ने दीघा में आयोजित रोजगार मेले में नियुक्ति पत्र प्रदान किया। इस अवसर पर प्रोफेसर रश्मि अखौरी और टीसीएस बिहार झारखंड के प्रभारी राहुल झा ने बताया कि भर्ती अभियान में करीब 500 विद्यार्थियों ने भाग लिया था। लिखित और मौखिक परिक्षा के बाद 69 विद्यार्थियों का चयन किया गया। उन्होंने बताया कि टीसीएस में 56, माइक्रो फाइनेंस में चार, पीरामल फाइनेंस में छह, विप्रो में एक और दो विद्यार्थियों का चयन उत्कर्ण स्मॉल फाइनेंस बैंक में हुआ है।

कॉलेज ऑफ कॉमर्स के 69 विद्यार्थियों की हुई कैम्पस प्लेसमेंट

पटना | कॉलेज ऑफ कॉमर्स, साइंस एंड आर्ट्स में टाटा कंसल्टेंसी ने प्लेसमेंट ड्राइव चलाया। इसमें शनिवार को बीसीए, बीएससी आईटी, बीकॉम,



कॉलेज ऑफ कॉमर्स में 69 विद्यार्थियों का सेलेक्शन



कॉलेज ऑफ कॉमर्स में 69 विद्यार्थियों का सेलेक्शन किया गया। इसमें बीसीए, बीएससी आईटी, बीकॉम, अर्थशास्त्र और मनोविज्ञान विभाग के विद्यार्थियों का सेलेक्शन किया गया।

फुरी ضرورت





छात्र सीखेंगे रोजगार उपलब्ध कराने के तरीके

जासं, पटना : कालेज आफ कॉमर्स आर्ट्स एंड साइंस, पटना में बुधवार को युवा रोजगार प्रोग्राम के तहत टाटा कंसल्टेंसी टीसीएस के संयुक्त तत्वावधान में रोजगार योग्यता कौशल प्रदर्शन और पेशेवर कौशल प्रदर्शन पर कार्यशाला का आयोजन किया गया।

इसमें टाटा कंसल्टेंसी के क्षेत्रीय प्रमुख राहुल झा तथा मुख्य प्रशिक्षक सुमित राय ने विद्यार्थियों को 22 दिवसीय प्रशिक्षण कार्यक्रम की रूपरेखा तथा इसके लाभ की विस्तृत जानकारी दी।



बेहतर कैरियर के लिए पेशेवर कौशल प्रदर्शन के गुरु बताए

पटना। कॉलेज ऑफ कॉमर्स आर्ट्स एंड साइंस पटना में बुधवार को युवा रोजगार प्रोग्राम के तहत टीसीएस के संयुक्त तत्वावधान में रोजगार योग्यता कौशल प्रदर्शन और पेशेवर कौशल प्रदर्शन पर कार्यशाला हुई। प्रिंसिपल प्रो इंद्रजीत प्रसाद राय ने विद्यार्थियों को पेशागत दक्षता प्राप्त करने की सलाह दी। अब तक पांच सौ से अधिक छात्र-छात्राओं ने रजिस्ट्रेशन कराया है। कार्यशाला में छात्रों को पेशेवर कौशल प्रदर्शन के गुरु बताए गए। टीसीएस के राहुल झा तथा सुमित राय ने बाइस दिवसीय



College of Commerce Arts and Science,
Patna
Patliputra University, Patna



**Svatantra Microfin
Campus Recruitment Drive**

Eligibility:

- Age Between 20-28 years can apply
- Mt must Mt Excel Knowledge is mandatory

Education:

- Graduation in any stream
- Post graduation or MBA can also apply

Benefits:

Travelling allowance, ESI, PF, Mobile reimbursement, Medication for family, medical insurance etc.

Note:-
Please bring two copies of Resume
Role is only for male candidates

Vaniya Sahbhagar, COCAS, Patna

12th August, 2023 10:00 A.M. to 2:00 P.M.

CAMUS RECRUITMENT DRIVE

By
SVATANTRA MICROFIN PVT. LTD.
IN COLLABORATION WITH
RESEARCH AND TRAINING & PLACEMENT CELL
COLLEGE OF COMMERCE, ARTS & SCIENCE, PATNA

Date:- 12th AUGUST 2023 Time:- 10:00AM

VANIYA SABHAGAR, College of Commerce, Arts & Science, Patna
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विद्यार्थियों को दिया गया प्रमाणपत्र



पटना। टाटा कंसल्टेंसी सर्विसेज ने सोमवार को कॉलेज ऑफ कॉमर्स आर्ट्स एण्ड साइंस और आईक्यूएसी के संयुक्त तत्वावधान में आयोजित 22 दिवसीय रोजगार प्रशिक्षण प्राप्त करने वाले 160 विद्यार्थियों को सर्टिफिकेट प्रदान किया।

टाटा कंसल्टेंसी सर्विसेज के क्षेत्रीय प्रमुख राहुल झा, प्रशिक्षक अली जौहर

और उत्तम झुंझुवाला ने प्रशिक्षित छात्रों को प्रमाणपत्र प्रदान किया। कार्यक्रम की अध्यक्षता प्रधानाचार्य प्रो. इन्द्रजीत प्रसाद राय ने की। उन्होंने कहा कि इस प्रशिक्षण के बाद छात्रों के लिए रोजगार के मार्ग प्रशस्त होंगे। टीसीएस, जेनपैक्ट जैसी कंपनियों में उन्हें रोजगार का अवसर मिलेगा। कार्यक्रम का संचालन प्रो. संतोष कुमार ने किया।



टीसीएस आइस ने कॉलेज ऑफ कॉमर्स के 160 त्रिभित याफते طلباء को मरथिकिथ दिऐ



कंसल्टेंट राहुल झा (दोसरे से दायरे में) ने कॉलेज ऑफ कॉमर्स के 160 विद्यार्थियों को सर्टिफिकेट प्रदान किया।

पटना 22 दिवसीय रोजगार प्रशिक्षण कार्यक्रम के अंतर्गत 160 विद्यार्थियों को सर्टिफिकेट प्रदान किया गया। कार्यक्रम की अध्यक्षता प्रधानाचार्य प्रो. इन्द्रजीत प्रसाद राय ने की। उन्होंने कहा कि इस प्रशिक्षण के बाद छात्रों के लिए रोजगार के मार्ग प्रशस्त होंगे। टीसीएस, जेनपैक्ट जैसी कंपनियों में उन्हें रोजगार का अवसर मिलेगा। कार्यक्रम का संचालन प्रो. संतोष कुमार ने किया।





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छात्र सीखेंगे रोजगार उपलब्ध कराने के तरीके

जासं, पटना : कालेज आफ कॉमर्स आर्ट्स एंड साइंस, पटना में बुधवार को युवा रोजगार प्रोग्राम के तहत टाटा कंसल्टेंसी टीसीएस के संयुक्त तत्वावधान में रोजगार योग्यता कौशल प्रदर्शन और पेशेवर कौशल प्रदर्शन पर कार्यशाला का आयोजन किया गया।

इसमें टाटा कंसल्टेंसी के क्षेत्रीय प्रमुख राहुल झा तथा मुख्य प्रशिक्षक सुमित राय ने विद्यार्थियों को 22 दिवसीय प्रशिक्षण कार्यक्रम की रूपरेखा तथा इसके लाभ की विस्तृत जानकारी दी।



बेहतर कैरियर के लिए पेशेवर कौशल प्रदर्शन के गुरु बताए

पटना। कॉलेज ऑफ कॉमर्स आर्ट्स एंड साइंस पटना में बुधवार को युवा रोजगार प्रोग्राम के तहत टीसीएस के संयुक्त तत्वावधान में रोजगार योग्यता कौशल प्रदर्शन और पेशेवर कौशल प्रदर्शन पर कार्यशाला हुई। प्रिंसिपल प्रो इंद्रजीत प्रसाद राय ने विद्यार्थियों को पेशागत दक्षता प्राप्त करने की सलाह दी। अब तक पांच सौ से अधिक छात्र-छात्राओं ने रजिस्ट्रेशन कराया है। कार्यशाला में छात्रों को पेशेवर कौशल प्रदर्शन के गुरु बताए गए। टीसीएस के राहुल झा तथा सुमित राय ने बाइस दिवसीय





College of Commerce Arts and Science,
Patna
Patliputra University, Patna



SVATANTRA
Svatantra Microfin
Campus Recruitment Drive

Eligibility	Eligible
<ul style="list-style-type: none"> Age Between 20-28 years can apply Mt must Mt Excel Knowledge is mandatory 	<ul style="list-style-type: none"> Graduation in any stream Post graduation or MBA can also apply

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Travelling allowance, ESI, PF, Mobile reimbursement, Medication for family, medical insurance etc.

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Patna, BR, India
Shree Sidhnath Singh Road, Kankarbagh
800020, BR, India
Lat 25.600868, Long 85.162254
08/12/2023 01:18 PM GMT+05:30
Note : Captured by GPS Map Camera



Patna, BR, India
Shree Sidhnath Singh Road, Kan
800020, BR, India
Lat 25.600852, Long 85.161926
08/12/2023 05:01 PM GMT+05:
Note : Captured by GPS Map Ca



Patna, BR, India
Kankarbagh, Patna, 800020, BR, India
Lat 25.600803, Long 85.162033
08/12/2023 05:07 PM GMT+05:30
Note : Captured by GPS Map Camera

प्रशिक्षण से छात्रों को मिलेंगे रोजगार

पटना | कॉलेज ऑफ कामर्स में चल रहा 22 दिवसीय प्रशिक्षण कार्यक्रम गुरुवार को संपन्न हो गया। कार्यक्रम कंसल्टेंसी सर्विसेज द्वारा लगभग दो सौ छात्रों को प्रशिक्षण दिया गया। टाटा कंसल्टेंसी के रीजनल लीड राहुल झा, अली जौहर ने कहा कि इस प्रशिक्षण के बाद छात्रों को रोजगार के प्रिंसिपल प्रो. इंद्रजीत प्रसाद राय ने कहा कि महाविद्यालय है कि अधिक से अधिक छात्रों को रोजगार उपलब्ध कर

कालेज ऑफ कामर्स में टी सी एस का रोजगार प्रशिक्षण कार्यक्रम सम्पन्न

पटना (आससे)। कालेज ऑफ कामर्स में बाइस दिवसीय रोजगार प्रशिक्षण कार्यक्रम गुरुवार को सम्पन्न हो गया। भारत की सबसे बड़ी साफ्टवेयर कम्पनी टाटा कंसल्टेंसी सर्विसेज द्वारा लगभग दो सौ छात्रों को प्रशिक्षण दिया गया। टाटा कंसल्टेंसी के रीजनल लीड राहुल झा, अली जौहर और उत्तम झा ने कहा कि इस प्रशिक्षण के बाद छात्रों को रोजगार के अवसर मिलेंगे। कार्यक्रम का उद्घाटन करते हुए प्रिंसिपल प्रो इंद्रजीत प्रसाद राय ने कहा कि महाविद्यालय का प्रयास है कि अधिक से अधिक छात्रों को रोजगार उपलब्ध कराया जा सके। उन्होंने कहा कि भविष्य में भी इस तरह के प्रशिक्षण कार्यक्रम आयोजित किए जाएंगे। कार्यक्रम का संयोजक प्रो रश्मि अखौरी ने कहा कि प्रशिक्षण से छात्रों का प्रोफेशनल रूप सर्वांगीण विकास हुआ है। इस

कॉलेज ऑफ कॉमर्स में रोजगार प्रशिक्षण कार्यक्रम

पटना। कॉलेज ऑफ कॉमर्स में 22 दिवसीय रोजगार प्रशिक्षण कार्यक्रम गुरुवार को सम्पन्न हो गया। भारत की सबसे बड़ी साफ्टवेयर कम्पनी टाटा कंसल्टेंसी सर्विसेज द्वारा लगभग दो सौ छात्रों को प्रशिक्षण दिया गया।

टाटा कंसल्टेंसी ने दो सौ छात्रों को किया प्रशिक्षित



पटना। कॉलेज ऑफ कॉमर्स में 22 दिवसीय रोजगार प्रशिक्षण कार्यक्रम गुरुवार को

कालेज ऑफ कामर्स में टी सी एस का रोजगार प्रशिक्षण कार्यक्रम सम्पन्न



पटना। कॉलेज ऑफ कॉमर्स में 22 दिवसीय रोजगार प्रशिक्षण कार्यक्रम गुरुवार को



कॉलेज ऑफ कॉमर्स के 69 छात्रों का कैम्पस सलेक्शन

नियोजन मेले में बांटे गए नियुक्ति पत्र।

पटना | कॉलेज ऑफ कॉमर्स, साइंस एंड आर्ट्स में टाटा कंसल्टेंसी ने प्लेसमेंट ड्राइव चलाया। इसमें शनिवार को बीसीए, बीएससी आईटी, बीकॉम, एमबीए (फाइनेंस एंड मार्केटिंग) और एमबीए (एनएचआर) के 69 विद्यार्थियों का चयन किया गया। इसमें बीसीए, बीएससी आईटी, बीकॉम, एमबीए (फाइनेंस एंड मार्केटिंग) और एमबीए (एनएचआर) के 69 विद्यार्थियों का चयन किया गया। इसमें बीसीए, बीएससी आईटी, बीकॉम, एमबीए (फाइनेंस एंड मार्केटिंग) और एमबीए (एनएचआर) के 69 विद्यार्थियों का चयन किया गया।



कॉलेज ऑफ कॉमर्स के 69 विद्यार्थियों का हुआ कैम्पस सेलेक्शन

संवाददाता, पटना

कॉलेज ऑफ कॉमर्स आर्ट्स एंड साइंस पटना में चलाये गये कैम्पस सेलेक्शन ड्राइव में कुल 69 विद्यार्थियों का चयन किया गया। इसमें बीसीए, बीएससी आईटी, बीकॉम, अर्थशास्त्र और मनोविज्ञान विभाग के विद्यार्थियों का सेलेक्शन किया गया। कैम्पस सेलेक्शन ड्राइव में चयनित विद्यार्थियों को प्रधानाचार्य प्रोफेसर इंद्रजीत प्रसाद राय और प्रशिक्षण एवं प्लेसमेंट सेल की संयोजक प्रोफेसर

रश्मि अखौरी ने दीघा में आयोजित रोजगार मेले में नियुक्ति पत्र प्रदान किया। इस अवसर पर प्रोफेसर रश्मि अखौरी और टीसीएस बिहार झारखंड के प्रभारी राहुल झा ने बताया कि भर्ती अभियान में करीब 500 विद्यार्थियों ने भाग लिया था। लिखित और मौखिक परिक्षा के बाद 69 विद्यार्थियों का चयन किया गया। उन्होंने बताया कि टीसीएस में 56, माइक्रो फाइनेंस में चार, पीरामल फाइनेंस में छह, विप्रो में एक और दो विद्यार्थियों का चयन उत्कर्ष स्मॉल फाइनेंस बैंक में हुआ है।

कॉलेज ऑफ कॉमर्स के 69 विद्यार्थियों की हुई कैम्पस प्लेसमेंट

पटना | कॉलेज ऑफ कॉमर्स, साइंस एंड आर्ट्स में टाटा कंसल्टेंसी ने प्लेसमेंट ड्राइव चलाया। इसमें शनिवार को बीसीए, बीएससी आईटी, बीकॉम,



कॉलेज ऑफ कॉमर्स में 69 विद्यार्थियों का चयन



कॉलेज ऑफ कॉमर्स, साइंस एंड आर्ट्स में टाटा कंसल्टेंसी ने प्लेसमेंट ड्राइव चलाया। इसमें शनिवार को बीसीए, बीएससी आईटी, बीकॉम, एमबीए (फाइनेंस एंड मार्केटिंग) और एमबीए (एनएचआर) के 69 विद्यार्थियों का चयन किया गया। इसमें बीसीए, बीएससी आईटी, बीकॉम, एमबीए (फाइनेंस एंड मार्केटिंग) और एमबीए (एनएचआर) के 69 विद्यार्थियों का चयन किया गया। इसमें बीसीए, बीएससी आईटी, बीकॉम, एमबीए (फाइनेंस एंड मार्केटिंग) और एमबीए (एनएचआर) के 69 विद्यार्थियों का चयन किया गया।







**TCS EMPOWERS
YOUTH EMPLOYMENT PROGRAM
COLLEGE TO CAREERS IN DIGITAL ECONOMY**

Organised By:-

TATA CONSULTANCY SERVICES (TCS)
in association with
IQAC, COLLEGE OF COMMERCE, ARTS & SCIENCE, PATNA.
(Patliputra University, Patna)

Date of Commencement- 3rd Nov. 2022

Time:- 10:30 AM.

PLACE OF TRAINING - KAUTILYA BHAWAN, First Floor, College of Commerce, Arts & Science, Patna



Patna
Prof. (Dr.) Indrajit Prasad Roy
Principal



Mr. Rahul Jha
Lead, In-house & Other
TCS



Mr. Ali Jashar
SVP Training
TCS



Co-ordinator
Prof. (Dr.) Rashmi Akhouri
HOD
Department of Economics







WORKSHOP
ON
EMPLOYABILITY SKILLS EXPOSURE
&
YOUTH EMPLOYMENT
Organized By -
AC, COLLEGE OF COMMERCE, ARTS & SCIENCE, PATNA
aniya Sabhagar Date: 18.10.2022 Time: 11-30 AM. & Date: 19.10.2022 Time:

आईसीआईसीआई और ग्लेनमार्क में कालेज ऑफ कॉमर्स के 28 छात्रों का हुआ प्लेसमेंट



सिद्धांत / राजकैलाश शर्मा



तों में उद्यमिता की क्षमता विकसित करने को कॉलेज ऑफ कॉमर्स में इन्व्यूबेशन सेंटर के लिए हुआ एम

सिद्धांत, उत्तर

में उद्यमिता की क्षमता विकसित करने तथा उद्यमिता के इकोनॉमिक आर्थिकता के तंत्र के लिए कॉलेज ऑफ कॉमर्स अटल एंड साइंस पटना में इन्व्यूबेशन सेंटर का शुभारंभ किया गया। इस सेंटर के अध्यक्ष प्रो. विजय प्रकाश और कॉलेज के डायरेक्टर प्रो. प्रसाद राय ने हस्ताक्षर किए।



इस अवसर पर आर्गेनाइजिंग कमिटी के सदस्यों ने प्रस्ताव पेश किया और कॉलेज में उद्यमिता के लिए आर्थिक विज्ञान कार्यक्रम का शुभारंभ किया। इसमें प्रो. प्रसाद राय ने हस्ताक्षर किए और उद्यमिता के

कॉलेज ऑफ कॉमर्स का विद्यापीठ-अटल इन्व्यूबेशन सेंटर से एमओयू

पटना। छात्रों में उद्यमिता की क्षमता विकसित करने तथा स्टार्ट अप के लिए इन्वेंटिव आर्गिजियाज के इन्व्यूबेशन के लिए कॉलेज ऑफ कॉमर्स अटल एंड साइंस पटना ने बिहार विद्यापीठ-अटल इन्व्यूबेशन सेंटर के साथ मंगलवार को एमओयू पर हस्ताक्षर किया। अटल इन्व्यूबेशन सेंटर की ओर से सेंटर के अध्यक्ष प्रो. आर्गिजियाज अर्थिक विज्ञान प्रकाश और कॉलेज के प्रिंसिपल प्रो. इंद्रजीत प्रसाद राय ने हस्ताक्षर किए। प्राचार्य प्रो. इंद्रजीत प्रसाद राय ने

बेहतर कैरियर के लिए पेशेवर कौशल प्रदर्शन के गुरु बताया

पटना। कॉलेज ऑफ कॉमर्स अटल एंड साइंस पटना में बुधवार को युवा रोजगार प्रोग्राम के तहत टीसीएस के संयुक्त तत्वावधान में रोजगार योग्यता कौशल प्रदर्शन और पेशेवर कौशल प्रदर्शन पर कार्यरत हुआ। प्रिंसिपल प्रो. इंद्रजीत प्रसाद राय ने विद्यार्थियों को प्रेरणा देकर प्राप्त करने की सलाह दी। अब तक पांच सौ से अधिक छात्र-छात्राओं ने रजिस्ट्रेशन कराया है। कार्यरत में छात्रों को पेशेवर कौशल प्रदर्शन के गुरु बताया गए। टीसीएस के राहुल झा तथा सुमित राय ने वाइस दिवसीय प्रशिक्षण कार्यक्रम की विस्तृत जानकारी दी।

कालेज आफ कामर्स के 28 छात्रों का हुआ प्लेसमेंट

जास, पटना : कालेज आफ कामर्स अटल एंड साइंस पटना के 28 छात्रों का चयन आईसीआईसीआई, ग्लेनमार्क व सिस्को इंडिया में सोमवार को रिज्यूटमेंट ड्राइव में हुआ है। प्लेसमेंट सेल की समन्वयक प्रो. रश्मि अश्वौरी ने बताया कि टीसीएस के सहयोग से 300 से अधिक छात्रों को प्रशिक्षण

कॉलेज ऑफ कॉमर्स में स्कूल थ्रिथिंग प्रोग्राम



छात्र सीखेंगे रोजगार उपलब्ध कराने के तरीके

जास, पटना : कालेज आफ कामर्स अटल एंड साइंस, पटना में बुधवार को युवा रोजगार प्रोग्राम के तहत टाटा कंसल्टेंसी टीसीएस के संयुक्त तत्वावधान में रोजगार योग्यता कौशल प्रदर्शन और पेशेवर कौशल

College starts employability skill exposure programme

Patna (College of Commerce, Arts and Science, CCSAS) in association with TCS Consultancy Services (TCS) has launched a 22-day employability skill exposure programme for prospective students for various jobs, newly in print, in the IT sector.

Principal Jagdish Prasad Roy said, "Technological developments have opened up new opportunities for students to gain exposure to various skills in the IT sector. The 22-day programme is a first of its kind in the region and is a commendable initiative by TCS to support the growth of the IT industry in Patna. We are glad to have such a programme in our college and hope it will help students to gain the necessary skills to enter the IT industry."

The 22-day programme is a first of its kind in the region and is a commendable initiative by TCS to support the growth of the IT industry in Patna. We are glad to have such a programme in our college and hope it will help students to gain the necessary skills to enter the IT industry.

कॉलेज ऑफ कॉमर्स में 22 दिवसीय प्रशिक्षण शुरू

पटना। भारत की सबसे बड़ी सॉफ्टवेयर कम्पनी टाटा कंसल्टेंसी सर्विसेज (टीसीएस) और आईक्यूएसी कॉलेज ऑफ कॉमर्स आर्ट्स एंड साइंस पटना के संयुक्त तत्वावधान में युवाओं के लिए रोजगार प्रोग्राम के तहत गुरुवार को प्रशिक्षण कार्यक्रम शुरू हुआ। बाईस दिनों तक चलने वाले इस रोजगार योग्यता कौशल प्रशिक्षण में सभी विषयों के लगभग दो सौ विद्यार्थियों को टीसीएस यूथ एम्प्लोयमेंट प्रोग्राम के तहत क्वांटिटेटिव एप्टीट्यूट, बिजनेस कम्प्यूनिकेशन स्किल प्रोग्राम और डोमेन स्किल पर आधारित कोर्स कराए जायेंगे। प्रशिक्षण कार्यक्रम का उद्घाटन करते हुए प्रधानाचार्य प्रो. इन्द्रजीत प्रसाद राय ने कहा कि इस प्रशिक्षण के द्वारा युवाओं में रोजगार योग्यता के सृजन के साथ-साथ उनका सशक्तिकरण भी होगा। टीसीएस बिहार झारखंड के लीड राहुल झा और ट्रेनर अली जौहर ने बताया कि इस प्रशिक्षण में 22 दिवसीय रोजगार प्रशिक्षण कार्यक्रम गुरुवार को समाप्त हो गया।

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Mr. Jagdish Prasad Roy, Mr. Rajul Jha, Mr. Ali Jauhar, Prof. (Dr.) Rashmi Akhouri

टाटा कंसल्टेंसी ने दो सौ छात्रों को किया प्रशिक्षित



पटना। कॉलेज ऑफ कॉमर्स में 22 दिवसीय रोजगार प्रशिक्षण कार्यक्रम गुरुवार को समाप्त हो गया। 22 दिवसीय रोजगार प्रशिक्षण कार्यक्रम गुरुवार को समाप्त हो गया।

कालेज ऑफ कामर्स में टी सी एस का रोजगार प्रशिक्षण कार्यक्रम सम्पन्न

पटना (आससे)। कालेज ऑफ कॉमर्स में बाईस दिवसीय रोजगार प्रशिक्षण कार्यक्रम गुरुवार को सम्पन्न हो गया। भारत की सबसे बड़ी सॉफ्टवेयर कम्पनी टाटा कंसल्टेंसी सर्विसेज द्वारा लगभग दो सौ छात्रों को प्रशिक्षण दिया गया। टाटा कंसल्टेंसी के रिजनल लीड राहुल झा, अली जौहर और उत्तम झा ने कहा कि इस प्रशिक्षण के बाद छात्रों को रोजगार के अवसर मिलेंगे। कार्यक्रम का उद्घाटन करते हुए प्रिंसिपल प्रो इन्द्रजीत प्रसाद राय ने कहा कि इस प्रशिक्षण के बाद छात्रों को रोजगार के अवसर मिलेंगे।

टीसीएस का प्रशिक्षण समाप्त, स्टूडेंट्स को मिलेगा रोजगार

पटना. कॉलेज ऑफ कॉमर्स आर्ट्स एंड साइंस में टीसीएस की ओर से आयोजित 22 दिवसीय रोजगार प्रशिक्षण कार्यक्रम गुरुवार को समाप्त हो गया. प्रशिक्षण कार्यक्रम में लगभग 200 छात्रों को प्रशिक्षण दिया गया।

कॉलेज ऑफ कॉमर्स के छात्रों का प्लेसमेंट

आईसीआईसीआई, ग्लेनमार्क और सिको इंडिया कंपनी में हुआ चयन

पटना (एनएनएन) : कॉलेज ऑफ कॉमर्स एण्ड साइंस पटना के 28 छात्रों का आईसीआईसीआई, ग्लेनमार्क और सिको इंडिया कंपनी में चयन हुआ है। ग्लेनमार्क और सिको इंडिया कंपनी के चयन अधिकारी ने बताया कि प्रत्येक वर्ष के छात्रों का चयन प्रक्रिया अत्यंत प्रतिस्पर्धी और चुनौतीपूर्ण होती है। ग्लेनमार्क और सिको इंडिया कंपनी के चयन अधिकारी ने बताया कि प्रत्येक वर्ष के छात्रों का चयन प्रक्रिया अत्यंत प्रतिस्पर्धी और चुनौतीपूर्ण होती है। ग्लेनमार्क और सिको इंडिया कंपनी के चयन अधिकारी ने बताया कि प्रत्येक वर्ष के छात्रों का चयन प्रक्रिया अत्यंत प्रतिस्पर्धी और चुनौतीपूर्ण होती है।

कंपनी में विभिन्न पदों पर अत्याधिक वेतन पर चयन हुआ। प्रत्येक वर्ष के चयन में छात्रों को अत्यंत प्रतिस्पर्धी और चुनौतीपूर्ण प्रक्रिया का सामना करना पड़ता है। प्रत्येक वर्ष के चयन में छात्रों को अत्यंत प्रतिस्पर्धी और चुनौतीपूर्ण प्रक्रिया का सामना करना पड़ता है। प्रत्येक वर्ष के चयन में छात्रों को अत्यंत प्रतिस्पर्धी और चुनौतीपूर्ण प्रक्रिया का सामना करना पड़ता है।

टीसीआई ने काज ऑफ कॉमर्स के 160 त्रिभित याफते طلباء کو سرٹیفिकेट دیئے



گلاسٹ پمپرسٹوٹی کار نے کی تجویز کے مطابق پمپرسٹوٹی کے 160 طلباء کو سرٹیفیکेट دیا گیا۔ اس وقت پمپرسٹوٹی کی سربراہی میں

پمپرسٹوٹی نے 160 طلباء کو سرٹیفیکेट دیا ہے۔ اس وقت پمپرسٹوٹی کی سربراہی میں گلاسٹ پمپرسٹوٹی کار نے کی تجویز کے مطابق پمپرسٹوٹی کے 160 طلباء کو سرٹیفیکेट دیا گیا۔ اس وقت پمپرسٹوٹی کی سربراہی میں گلاسٹ پمپرسٹوٹی کار نے کی تجویز کے مطابق پمپرسٹوٹی کے 160 طلباء کو سرٹیفیکेट دیا گیا۔ اس وقت پمپرسٹوٹی کی سربراہی میں گلاسٹ پمپرسٹوٹی کار نے کی تجویز کے مطابق پمپرسٹوٹی کے 160 طلباء کو سرٹیفیکेट دیا گیا۔

विद्यार्थियों को दिया गया प्रमाणपत्र

पटना। टाटा कंसल्टेंसी सर्विसेज ने सोमवार को कॉलेज ऑफ कॉमर्स आर्ट्स एण्ड साइंस और आईक्यूएसी के संयुक्त तत्वावधान में आयोजित 22 दिवसीय रोजगार प्रशिक्षण प्राप्त करने वाले 160 विद्यार्थियों को सर्टिफिकेट प्रदान किया।

टाटा कंसल्टेंसी सर्विसेज के क्षेत्रीय प्रमुख राहुल झा, प्रशिक्षक अली जौहर

और उत्तम झुनझुनवाला ने प्रशिक्षित छात्रों को प्रमाणपत्र प्रदान किया। कार्यक्रम की अध्यक्षता प्रधानाचार्य प्रो. इन्द्रजीत प्रसाद राय ने की। उन्होंने कहा कि इस प्रशिक्षण के बाद छात्रों के लिए रोजगार के मार्ग प्रशस्त होंगे। टीसीएस, जेनपैक्ट जैसी कंपनियों में उन्हें रोजगार का अवसर मिलेगा। कार्यक्रम का संचालन प्रो. संतोष कुमार ने किया।

आइसीआईसीआई और ग्लेनमार्क में कॉलेज ऑफ कॉमर्स के 28 का प्लेसमेंट

पटना. कॉलेज ऑफ कॉमर्स आर्ट्स एंड साइंस के 28 छात्रों का आइसीआईसीआई, ग्लेनमार्क और सिको इंडिया कंपनी में चयन हुआ है. प्लेसमेंट सेल की समन्वयक प्रो. रश्मि अखौरी ने बताया कि प्रधानाचार्य प्रो

बाद उनमें से 28 छात्र-छात्राओं का आइसीआईसीआई, ग्लेनमार्क और सिको कंपनी में विभिन्न पदों पर आकर्षक वेतन पर चयन हुआ है. प्रधानाचार्य प्रो इन्द्रजीत प्रसाद राय ने बताया कि छात्र-छात्राओं

छात्रों को टीसीएस ने दिया सर्टिफिकेट

(एसएनबी)। टाटा कंसल्टेंसी सर्विसेज (टीसीएस) वार को कॉलेज ऑफ कॉमर्स आर्ट्स एंड साइंस और यूएसी के संयुक्त तत्वावधान में आयोजित 22 दिवसीय प्रशिक्षण प्राप्त करने वाले 160 विद्यार्थियों को सर्टिफिकेट प्रदान किया। टीसीएस के क्षेत्रीय प्रमुख राहुल झा, अली जौहर और उत्तम झुनझुनवाला ने छात्रों को पत्र प्रदान किया। अध्यक्षता प्रधानाचार्य प्रो. इन्द्रजीत

आईसीआईसीआई और ग्लेनमार्क में 28 छात्रों का हुआ प्लेसमेंट

(आज समाचार सेवा)

पटना। कॉलेज ऑफ कॉमर्स आर्ट्स एण्ड साइंस के अग्रिम छात्रों का आईसीआईसीआई, ग्लेनमार्क और सिको इंडिया कंपनी में चयन हुआ है। प्लेसमेंट सेल की समन्वयक प्रो. रश्मि अखौरी ने बताया कि प्रधानाचार्य प्रो इन्द्रजीत प्रसाद राय को पहले पर आईक्यूएसी और प्लेसमेंट सेल के संयुक्त तत्वावधान में टीसीएस के सहयोग में चलाने पर प्रशिक्षण सह पूर्ण अभिमान के सह लक्षण तीन सी के अधिक छात्रों को प्रशिक्षण दिया गया था उनमें से एक ही वीथीस छात्रों ने रिजल्ट में भाग लिया।

उन्होंने बताया कि विभिन्न परीक्षा, गुरुप दिनकान और साक्षात्कार के बाद उन में से अग्रिम छात्र छात्राओं का आईसीआईसीआई, ग्लेनमार्क और सिको कंपनी में विभिन्न पदों पर आकर्षक वेतन पर चयन हुआ है। प्रधानाचार्य प्रो इन्द्रजीत प्रसाद राय ने बताया कि छात्र छात्राओं को रोजगार उपलब्ध कराने के लिए महाविद्यालय में लगातार प्रशिक्षण कार्यक्रम चलाया जा रहा है। अगला लक्षण तीन सी के अधिक छात्रों ने प्रशिक्षण कार्यक्रम में भाग लिया है।



CERTIFICATE COURSE
in
BASIC PHOTOGRAPHY

Course conducted by
College of Commerce, Arts and Science,
Patna.
with
Digital Graphics

Objective

The objective of the Certificate course in Basic Photography is to develop and nurture the basic understanding of Photography among the students. This course will provide an in depth understanding of the various factors that can affect the quality of images and also about the challenges that are likely to come up while clicking the most impressive pictures. Students will be exposed to different kinds of photography practices such as Photojournalism, Product, Sports, Wedding, Industrial, Documentary and Mobile photography.

Mentor

Mr. Suman Mukherjee,
Professional Photographer
M.A (History), Dip. in Photography
RKV, University of Calcutta,
Life Member- FIP,
Owner- Digital Graphic



Course Structure

Sl. No	Course Content	Duration
1.	Introduction to Image Making- Stops, Film Speed, Shutter Speed, Aperture, Av & Tv Together, Lighting, Camera Shooting Modes, Composition, Lenses, Depth of Field, The Rule of Thirds, Framing, Fill the Frame, Landscapes.	4 hours
2.	Basics of Digital Photography- Introduction, Understanding the terminology used for the digital camera, Acquiring basic knowledge of taking a picture with the digital camera, using different methods in accordance with various situations, Basic knowledge of taking a picture with digital cameras, Terminology used for digital cameras, Equipment you will need, Prerequisite Knowledge or skills	8 hours
3.	Basic Lighting and Flash techniques- Styles of Lighting, Broad Lighting, Short Lighting, Narrow lighting, Butterfly Lighting, Rembrandt Lighting, Three-point lighting, Key light, Tungsten lights, What is Light, Light Examples	4 hours
4.	Writing for Photography- Photography, History, Macro-photography is the form of photography, How to take good photographs, Review of important settings, Taking photos at night, Taking close-up photos.	4 hours
5.	Studio Portraiture- Portraiture, Lesson Objectives, Introduction Discussion, Image Based Discussion, Activities/Projects, The Editing Stage, The Outsourcing Stage, The Capturing Stage	4 hours
6.	Commercial Photography- Making Great Pictures, Special Photographs, Seeing Well, Behind the Lens, Camera Equipment—What You Need, Basic Camera Controls, Lenses and Focal Length, Behind the Lens, Special-Purpose Lenses, Shutter Speeds, Panned-Action Images. (Practical Session will be done as per requirement)	8 hours

Learning Outcomes

Upon successful completion of the program, students will be able to:

Create artistic photo with their acquired knowledge.

Knowledge of Composition, Light sense, quality enhancement will be grown within them.

Select and use photographic equipment and technologies appropriate to the task.

Demonstrate effective use of written, verbal, and non-verbal communication, employing relevant knowledge, skills, and judgment in a business setting.

Work as a professional photographer in different event, companies, organizations etc.

Use and adapt to a variety of computer software and hardware for both photographic and business purposes.

For Admission

Call - 8372098447 or E-mail - ayanmukherjee88@gmail.com

Classes Details

Practical Classes with mobile camera

Classes of these courses shall be on weekend days.

Timing : 08.00 AM to 10.00 AM

Course Co-ordinator

Dr. Ayan Mukherjee

Assistant Professor, Dept. of Physics,
College of Commerce, Arts and Science, Patna.

Ayan Mukherjee
Dr. Ayan Mukherjee
Assistant Professor
Department of Physics
College of Commerce, Arts & Science, Patna



College of Commerce, Arts & Science

Patliputra University

IQAC and UGC Cell

REPORT ON CERTIFICATE COURSE IN “BASIC PHOTOGRAPHY”

For Academic Session 2022-2023

The Internal Quality Assessment Cell (IQAC) and UGC Cell jointly organized 32 hours CERTIFICATE COURSE IN “BASIC PHOTOGRAPHY” from 2nd July, 2022 for the students of the college. The classes were conducted in weekends (Saturday and Sunday) from 08.00AM to 10.00AM for 8 weeks in hybrid mode. The total duration of the course is 32 hours. The objective of the Certificate course in Basic Photography is to develop and nurture the basic understanding of Photography among the students. This course has provided an in depth understanding of the various factors that can affect the quality of images and also about the challenges that are likely to come up while clicking the most impressive pictures. Students got exposed to different kinds of photography practices such as Photojournalism, Product, Sports, Wedding, Industrial, Documentary and Mobile photography. Outdoor and indoor photography were taught as per light sources.

The course was mentored by Mr. Suman Mukherjee, owner of Digital Graphic and Life Member of Federation of Indian Photography (FIP). After completion of classes students were evaluated by their attendance and performance in learning.

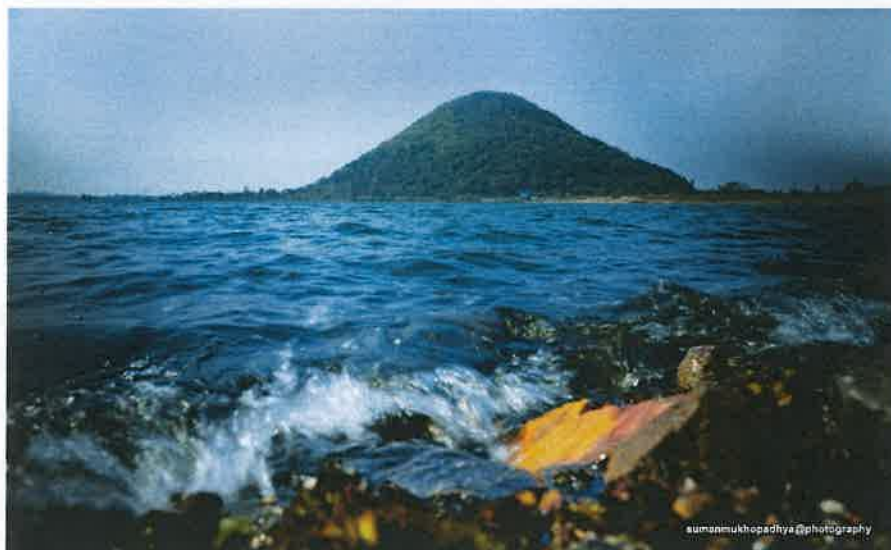
The courses conducted in 2022-2023 academic session is as follows:

Batch 1: 2nd July to 21st August 2022. Total 50 students participated from different departments and 48 completed the course successfully.

Batch 2: 5th Nov to 24th Dec, 2022. Total 50 students participated from different departments and 42 completed the course successfully.

A MOU was signed between College of Commerce, Arts & Science, Patna and Digital Graphic for mentoring students and creating job opportunities for them.

Some Glimpses of outdoor photography



Signature of Co-ordinator: *Ayan Mukherjee*
Dr. Ayan Mukherjee
Assistant Professor
Department of Physics
College of Commerce, Arts & Science, Patna

Signature of Principal: *[Signature]*
Principal
College of Commerce, Arts & Science, Patna

Cert. No. BP/2022-23/1/001

COLLEGE OF COMMERCE, ARTS & SCIENCE, PATNA



THIS IS TO CERTIFY THAT
SUKANYA KUMARI

Of

Dept. of Botany. College of Commerce, Arts & Science, Patna

has successfully completed the certificate course (32 hours) in “BASIC PHOTOGRAPHY” conducted by College of Commerce, Arts & Science, Patna with Digital Graphic during the period 02.07.2022 to 21.08.2022

Dr. Ayan Mukherjee
Course Co-Ordinator

Principal
College of Commerce, Arts & Science
Patna- 800020

Prof. (Dr) Indrajit Prasad Roy
Principal



Incubation centre activities

The college has established a Research and Entrepreneurship Hub for innovation and incubation related activities. This Incubation centre play a crucial role in college environment by serving as a catalyst for transforming theoretical knowledge into tangible outcomes, offering a myriad of benefits that contribute to both individual and collective growth.

This centre empowers students to go beyond traditional academic boundaries. It provides a fertile ground for innovation, nurture entrepreneurial ambitions, promote collaboration, and bridge the gap between academia and industry. Ultimately, these activities contribute to the holistic development of students, preparing them not only for successful careers but also for making meaningful contributions to society through their innovative ideas and endeavours. Following are some activities conducted in the Incubation Centre for Creation and transfer of Knowledge.

Line Follower Robot

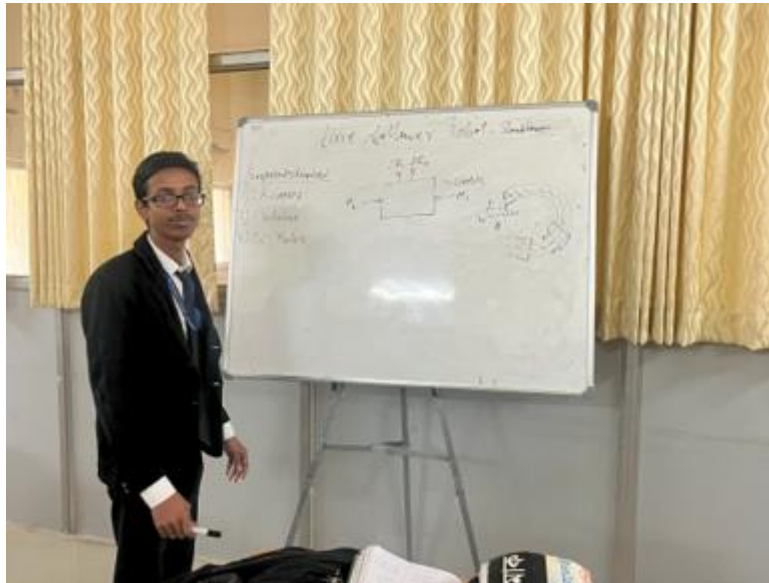
A Line Follower Robot is a popular project in robotics that employs Arduino for its control and functionality. The primary goal of a Line Follower Robot is to autonomously navigate along a predefined path, typically a contrasting colored line on a surface. The robot is equipped with sensors to detect this line and make course corrections accordingly to stay on track.

Components:

Arduino Board: Acts as the control unit for processing sensor data and controlling the watering system. IR Sensor: Sensor which detect object

DC Motor: Robotics Movement.

Power Supply: Powers the system components.



Home Automation to control Light & Fan

This project showcases the fusion of Arduino's control capabilities with smartphone technology, demonstrating how a custom-designed Android app can enable remote control of household devices. It exemplifies the potential for home automation systems, offering convenience, energy efficiency, and user-friendly control interfaces. This Project is implemented in the Phy lab

Components: Arduino Board: Acts as the control unit for processing sensor data and controlling the watering system.

Relay: Convert 5V to 220V

Bluetooth: Communication Protocol.

Power Supply: Powers the system components.



Sandwatch

Sandwatch, a captivating robotics project built on Arduino, replicates the elegant dynamics of an hourglass using LEDs. This innovative creation mimics the visual spectacle of sand trickling through an hourglass, creating a mesmerizing display that showcases the passage of time. The project utilizes an Arduino microcontroller as the brain of the operation, controlling the LED patterns to simulate the filling and emptying of the hourglass. A series of LEDs are arranged in a manner that resembles the shape of an hourglass. By programming the Arduino with the appropriate algorithms, the LEDs light up sequentially or in patterns that simulate the movement of sand particles from the top to the bottom of the hourglass.

Components:

Arduino Board: Acts as the control unit for processing sensor data and controlling the watering system.



LED: Led to glow

Power Supply: Powers the system components.

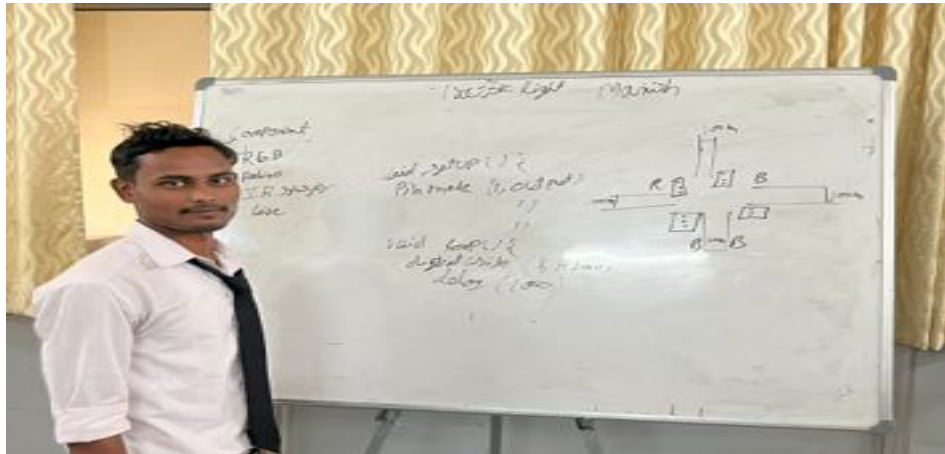


Traffic Light Management System

A Traffic Light Management System using Arduino and RGB (Red, Green, Blue) LEDs is a project designed to simulate and control traffic lights for educational or small-scale applications. The main aim of this system is to replicate and manage the functionality of traffic lights using Arduino and RGB LEDs, allowing for a programmable and customizable traffic signal simulation. Components Used: Arduino Board: Central control unit for managing the traffic light sequence. RGB LEDs: Represent the red, green, and yellow lights in traffic signals. Resistors:



Required for limiting the current flowing through the LEDs. Breadboard/Jumper Wires: Used for the circuit connections. Power Supply: Provides power to the system.



Edge Follower

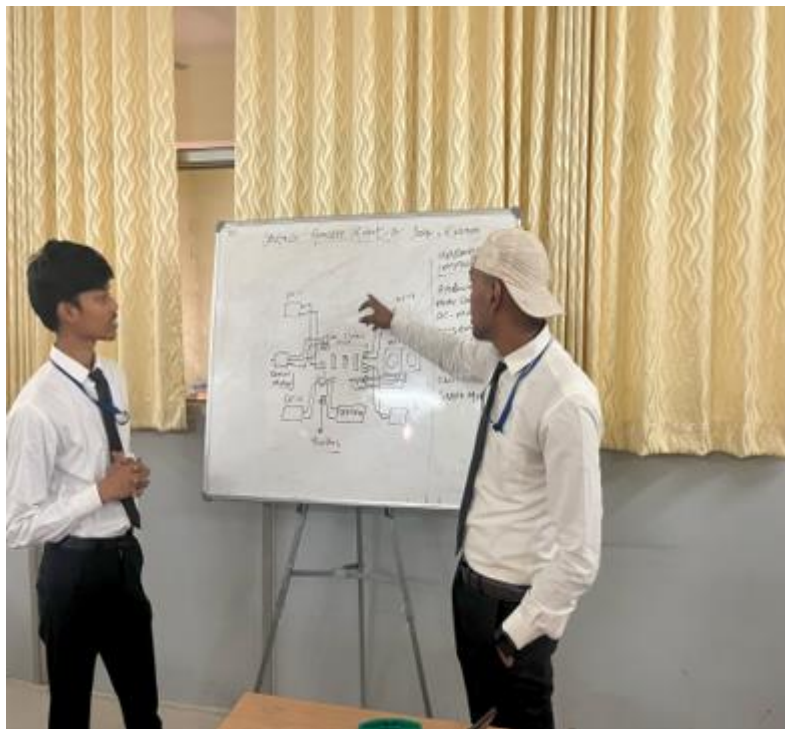
The goal is to develop a robot that uses an ultrasonic sensor to detect the proximity of an edge or an obstacle and navigate along it autonomously. Components: Arduino Board: Acts as the brain of the robot, processing sensor data and controlling motors. Ultrasonic Sensor (HC-SR04): Detects distance by emitting ultrasonic waves and measuring their reflection. Motor Driver: Interfaces the Arduino with the robot's motors for movement control. Wheels and Motors: To provide movement to the robot. Chassis: Physical structure or base of the robot to hold the components. Power Supply: Batteries or another power source for the robot's operation.



Obstacle Avider

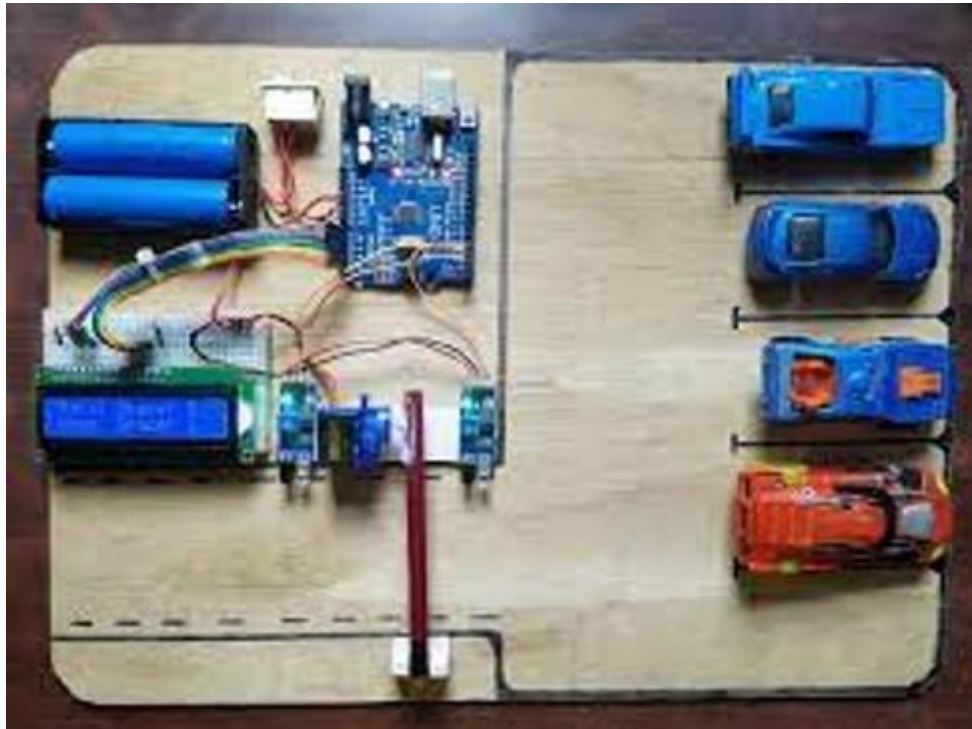


The goal is to develop a robot that uses IR sensors to detect obstacles and maneuver itself to avoid collisions while moving in a predefined direction. Components: Arduino Board: Serves as the control unit for processing sensor data and controlling the robot's movement. IR Sensors (Infrared Proximity Sensors): Detects obstacles in the robot's path by emitting and receiving infrared light. Motor Driver: Interfaces the Arduino with the robot's motors for movement control. Wheels and Motors: To provide movement to the robot. Chassis: Physical structure or base of the robot to hold the components. Power Supply: Batteries or another power source for the robot's operation.



Car Parking Management System

The goal is to develop a robot that uses IR sensors to detect obstacles and maneuver itself to avoid collisions while moving in a predefined direction. Components: Arduino Board: Serves as the control unit for processing sensor data and controlling the robot's movement. IR Sensors (Infrared Proximity Sensors): Detects obstacles in the robot's path by emitting and receiving infrared light. Motor Driver: Interfaces the Arduino with the robot's motors for movement control. Wheels and Motors: To provide movement to the robot. Chassis: Physical structure or base of the robot to hold the components. Power Supply: Batteries or another power source for the robot's operation.



Smart Trash Can

A Smart Trash Can using an ultrasonic sensor and Arduino is designed to automate the process of opening the trash can lid when someone approaches it, facilitating hands-free disposal. The main goal is to create a trash can that automatically opens its lid when a person approaches it, using an ultrasonic sensor to detect proximity. Components: Arduino Board: Acts as the control unit for processing sensor data and controlling the trash can lid. Ultrasonic Sensor (HC-SR04): Detects the presence of an object or person in proximity to the trash can. Servo Motor: Controls the opening and closing of the trash can lid. Trash Can Lid Mechanism: The physical lid that is controlled by the servo motor. Power Supply: Powers the system components.





Automatic Water Plant System

An Automatic Watering System for plants using a moisture sensor and Arduino is designed to monitor the moisture level in the soil and automatically water the plants when needed. The main goal is to create a system that maintains optimal soil moisture levels for plants by automatically watering them when the soil becomes too dry. Components: Arduino Board: Acts as the control unit for processing sensor data and controlling the watering system. Moisture Sensor: Measures the moisture content in the soil. Water Pump or Solenoid Valve: Dispenses water to the plants. Water Reservoir/Tank: Stores water for the watering system. Power Supply: Powers the system components.



E-commerce System User Design

Designing an effective and unique E-commerce platform involves considering various aspects to ensure user satisfaction, functionality, and differentiation from existing portals. Below pointers have been covered in the designing of Portal User Personas Intuitive Navigation Responsive



Design Distinct Brand Identity Value Proposition Personalized Content Analytics and Optimization



Loyalty Management System Design

Loyalty Management System (LMS) involves creating a platform that fosters customer engagement, encourages repeat purchases, and rewards loyal customers. Understanding Customer Behavior Segmentation User-Friendly Design Reward Structure Personalized Offers



Billing 360 System User Design



Designing a Billing 360 System involves creating a comprehensive software solution that manages and automates billing processes across different aspects of a business. It typically includes functionalities for invoicing, payment processing, customer management, inventory tracking, and reporting. Invoicing and Billing Customer Management Inventory and Product Management Payment Processing



Student 360 System User Design

Designing a Student 360 System using Python involves creating a comprehensive software platform that manages student-related information, academic records, communication, and administrative tasks for educational institutions. Student Information Management Course and Curriculum Management Attendance and Performance Tracking





Automated water tap using a motion sensor and Arduino involves designing a system that activates a water tap when motion is detected within its proximity. Components: Arduino Board: Controls the system and processes data. Motion Sensor (Passive Infrared Sensor - PIR): Detects motion. Solenoid Valve or Water Pump: Controls the flow of water. Water Tap/Outlet: Dispenses water when activated. Power Supply: Powers the system components.



Gas Detection in Kitchen

Flame Sensor and Arduino for gas detection in the kitchen involves creating a system that detects the presence of flames, which could indicate a gas leak or potential hazard in the kitchen environment. The main goal is to use a flame sensor to detect the presence of flames (which might indicate a gas leak or a fire hazard) and trigger an alert or an action using Arduino. Components:

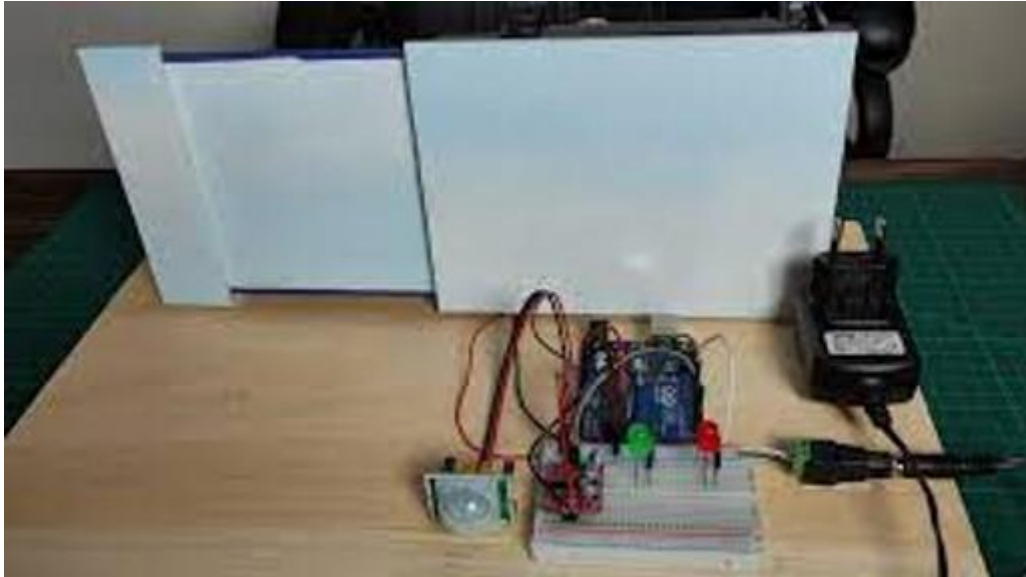


Arduino Board: Acts as the control unit for processing sensor data and triggering alerts. **Flame Sensor:** Detects the presence of flames by responding to infrared light emitted by fire. **Buzzer/Alarm:** Alerts users in case of flame detection. **Power Supply:** Supplies power to the system components.



Automatic gate Opening System

Automatic Gate Opening System using RFID and Arduino involves building a system that automatically opens a gate when it detects an authorized RFID tag in close proximity. The primary goal is to design a gate system that opens automatically upon detecting an authorized RFID tag, providing convenience and security for entry. **Components:** **Arduino Board:** Acts as the control unit for processing RFID data and controlling the gate mechanism. **RFID Reader:** Detects and reads RFID tags/cards for identification. **RFID Tags/Cards:** Authorized tags/cards assigned to users for gate access. **Gate Mechanism:** Motor or actuator to open and close the gate. **Power Supply:** Powers the system components.



Clapping Controlled Home Automation for Blind

clapping-controlled home automation system for the visually impaired using a sound sensor and relay involves designing a setup where specific clapping patterns trigger various home automation tasks, providing accessibility and convenience. The primary goal is to design a system that enables the visually impaired to control home appliances or perform tasks through distinct clapping patterns detected by a sound sensor. Components: Arduino Board: Serves as the control unit for processing sound sensor data and controlling relays. Sound Sensor (Microphone Module): Detects sound levels and patterns. Relay Modules: Controls the home appliances or devices. Home Appliances/Devices: Such as lights, fans, or other controllable electronics. Power Supply: Powers the system components.



Blind Stick Automation

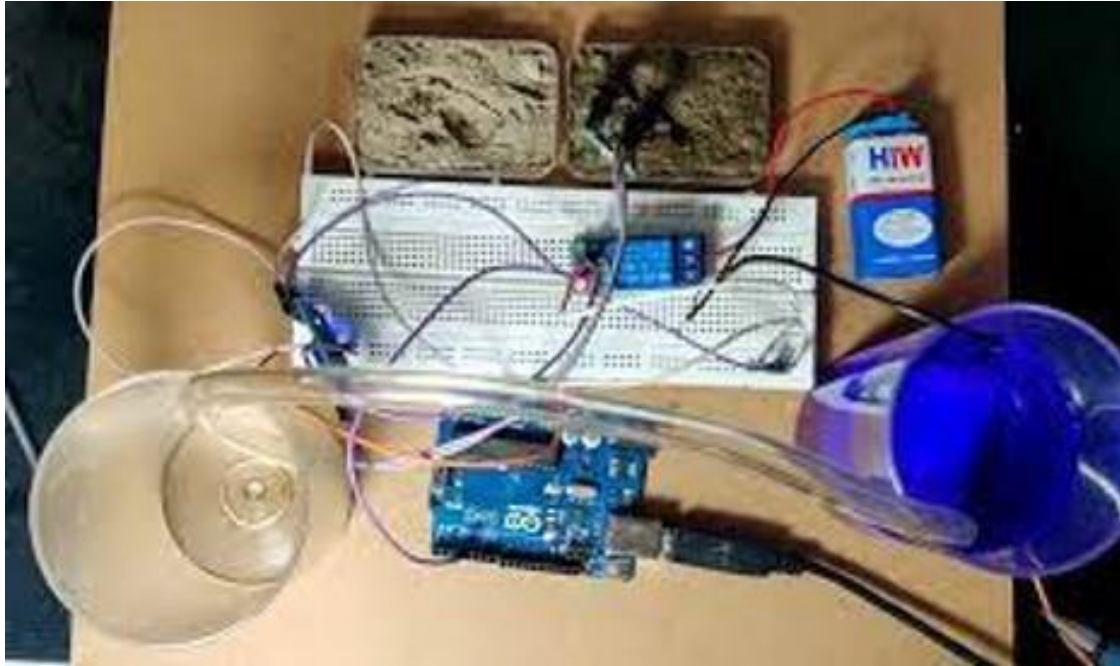


Blind Stick Automation system using ultrasonic sensors and Arduino involves creating a device that assists visually impaired individuals by detecting obstacles and providing feedback through vibrations or alerts. The main goal is to design a smart blind stick that uses ultrasonic sensors to detect obstacles and provides haptic or auditory feedback to aid navigation for visually impaired individuals. Components: Arduino Board: Acts as the control unit for processing sensor data and generating feedback. Ultrasonic Sensors (HC-SR04): Detects obstacles by emitting and receiving ultrasonic waves. Vibration Motor/Buzzer: Provides haptic or auditory alerts to the user. Battery/Power Supply: Powers the system components. Enclosure/Handle: Physical housing for the device.



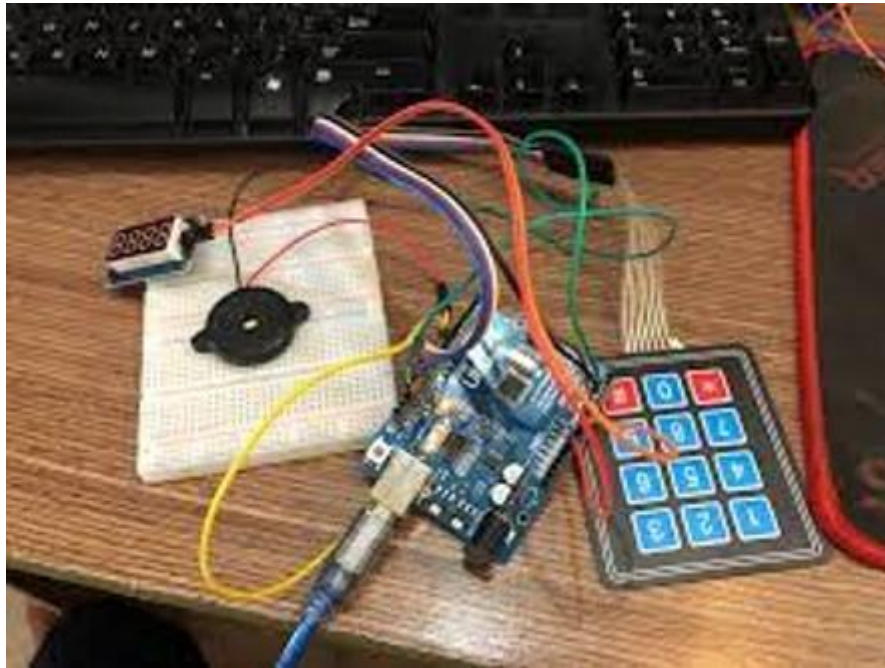
Drip Irrigation System

Building a Drip Irrigation System using a moisture sensor and Arduino involves creating an automated watering system that supplies water to plants based on their soil moisture levels. The main goal is to design an automated irrigation system that waters plants only when the soil moisture falls below a certain level, ensuring efficient water usage and optimal plant health. Components: Arduino Board: Controls the irrigation system based on sensor readings. Moisture Sensor: Measures soil moisture levels. Water Pump or Solenoid Valve: Dispenses water to plants. Water Reservoir/Tank: Holds water for irrigation. Power Supply: Powers the system components.



Keypad Controlled led System

Keypad Controlled LED System using Arduino, a keypad, a relay module, and bulbs involves designing a system where input from the keypad triggers specific actions, such as turning on/off LEDs or bulbs connected through a relay. The goal is to create a system where the input entered through a keypad controls the operation of LEDs or bulbs through a relay using an Arduino as the central controller. Components: Arduino Board: Controls the system and processes keypad input. Keypad: Receives user input to trigger actions. Relay Module: Controls the on/off function of the bulbs or LEDs. LEDs/Bulbs: Connected to the relay for on/off control. Power Supply: Powers the system components.



Fire Fighting Robot

Fire-Fighting Robot using a flame sensor and a robot with DC motors involves designing a robot that can detect flames and navigate towards them to aid in fire extinguishing or alerting. Arduino Board: Controls the robot's movements and processes sensor data. Flame Sensor: Detects the presence of flames. DC Motors: Drive the robot's movement. Chassis: Physical structure to hold the components and provide mobility. Water Pump/Sprinkler (Optional): Dispenses water for firefighting.





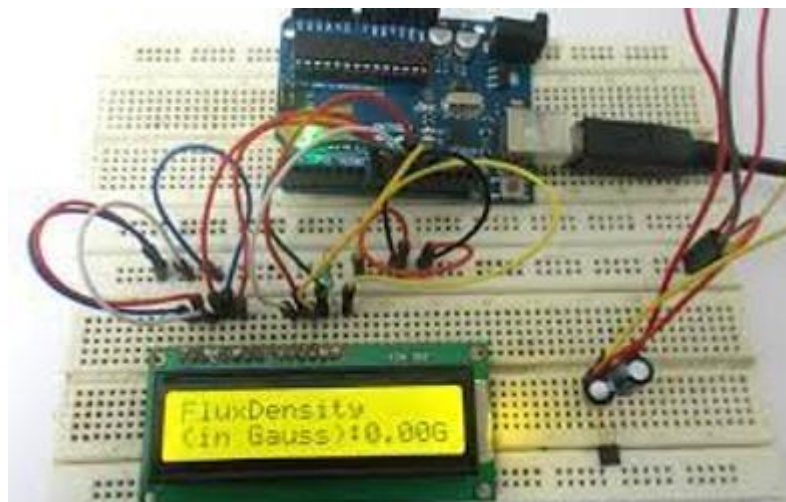
Heartbeat Monitoring System

Heartbeat Monitoring System using Arduino and a heartbeat sensor involves developing a system that measures and displays a person's heartbeat in real-time. Components: Arduino Board: Processes data from the heartbeat sensor and controls the system. Heartbeat Sensor: Captures the heart rate data. Display Module: Displays the heart rate (e.g., an LCD display). Power Supply: Powers the system components.



Linear Magnetic System

A linear magnetic system using an Arduino and a linear magnetic sensor can be designed to measure linear motion or displacement. Components: Arduino Board: Controls the system and processes data. Linear Magnetic Sensor: Detects changes in magnetic fields to measure linear motion. Linear Actuator (Optional): Device responsible for creating linear motion (e.g., a linear motor or solenoid). Power Supply: Powers the system components.

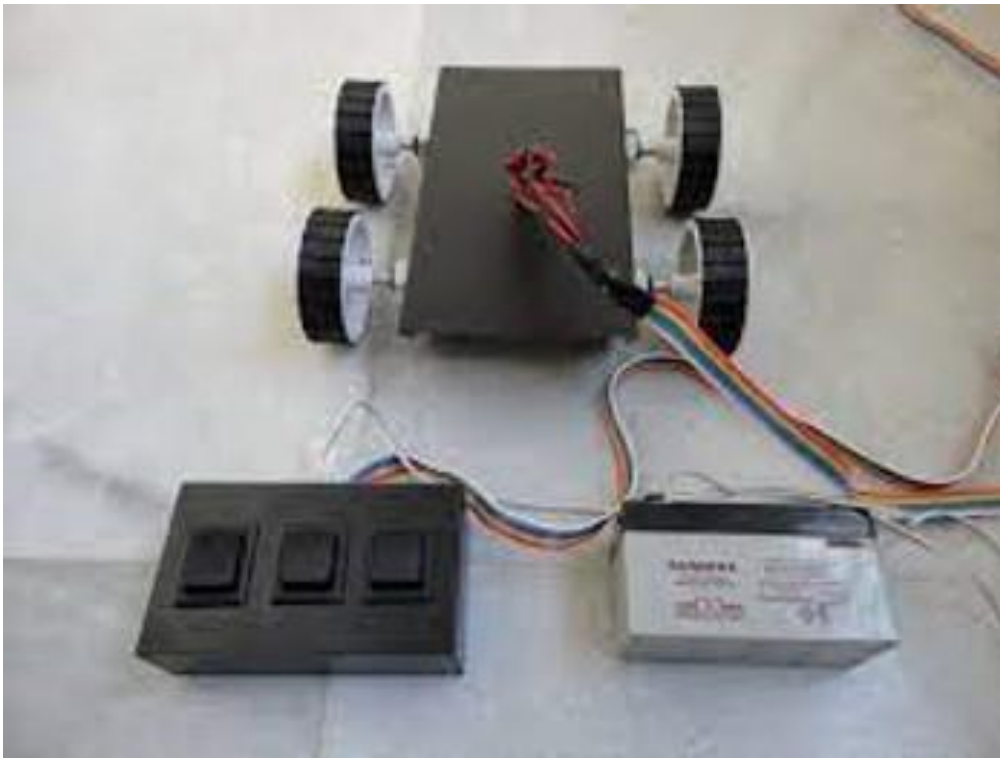




DPDT Switch Robot

A DPDT (Double Pole Double Throw) switch used in conjunction with an Arduino in a robot can serve various purposes, primarily for controlling different functionalities or movements

Components: Arduino Board: Acts as the control unit for the robot. DPDT Switch: A switch that can control two circuits simultaneously, offering various configurations. Robot Chassis: Physical structure housing the robot's components. Motor Drivers/Motors: Control the movement of the robot. Power Supply: Powers the Arduino and motors.





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Establishment of IPR Cell

The IPR cell was reconstituted to provide Intellectual Property Rights awareness among teachers, research scholars and students.



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OFFICE OF THE PRINCIPAL

Ref.: *Cocspna/420/2022*

Date: 31/12/2022

Notification

An Intellectual Property Rights (IPR) Cell is being reconstituted with immediate effect. The committee shall consist of following members: -

- | | |
|----------------------|-----------|
| 1. Dr. A.K. Bhaskar | -Convenor |
| 2. Dr. Dimple Kumari | -Member |
| 3. Rashmi Kumari | -Member |
| 4. Akanksha Priya | -Member |



[Signature]
31.12.22
Prof. (Dr.) Indrajit Prasad Roy
Principal

[Signature]
31/12/2022

Awareness about Intellectual Property Rights



One- Day Workshop on Intellectual Property Rights in Perspective of Higher Education

Date: 22.11.2019

College organized one- day workshop on Intellectual Property Rights in Perspective of Higher Education on 22.11.2019. The resource person Mrs. Sugandha Sinha, Chanakya National Law University, Patna discussed that intellectual property rights (IPRs) are the backbone of innovation and new ideas. It encourages prospective researchers and protect their interests. These rights give innovators an exclusive right over their creations for a certain period. The session was chaired by Prof. T. K. Shandilya, Principal, COCAS, Patna. 67 participants participated in this workshop.





Intellectual Property right Awareness Program

Date: 19-07-2023

(Under National Intellectual Property awareness mission, NIPAM, Govt. of India)

Under the **National IP Awareness program (NIPAM)** launched by office of the Controller General of Patents, Designs and Trademark (CGPDTM), Department of promotion of Industry and Internal Trade, Ministry of Commerce and Industry, Government of India in association with Department of Chemistry, UGC cell and Internal Quality Assurance Cell (IQAC) College of commerce Arts and science, Patliputra University, Patna organized “**Intellectual Property Right Awareness Program**” on 19th July 2023 at 12.00pm to 1.30pm.

The webinar began with the welcome and Introductory note by Dr. Kalpana Shahi, HOD, Dept. of Chemistry followed by an addressed by IQAC coordinator Dr., Santosh Kumar. Prof. (Dr.) Indrajit Prasad Roy, Principal, COCAS explained in detail about Intellectual property and intellectual property rights in his informative lecture.

Mr. Nikhil Ranjan, Examiner of Patents and Designs (group „A“ gazette), The patent office, Kolkata, DPIIT, Ministry of Commerce and Industry, Govt. of India, was the resource person of the program. He presented the bird’s eye view of “intellectual property rights and patent process” wherein he discussed about IPR, Design, Trademarks, copyright and process of filling patents in India.



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Around 150 participants registered and attended the webinar on online platform Cisco webex. The participants asked various questions during the webinar. All the participants attending the webinar received an e certificate from Patent office, Kolkata, Govt. of India.

In recognition of active participation in the NIPAM, Govt. of India, a Certificate of Appreciation has been presented to College of Commerce arts and science, Patna.

The Program was Co-ordinated by Dr. Ayan Mukherjee, Assistant Professor, Department of Physics and Coordinator UGC cell, Dr. Dimple Kumari, Assistant Professor, Department of Chemistry, Dr. Rashmi Kumari, Assistant Professor, Department of Zoology and vote of thanks was given by Dr. Akanksha Priya, Assistant Professor, Department of Botany, COCAS, Patna.

Registration Link: <https://forms.gle/McPeYihd6xDjC1T3A>

Platform: Cisco Webex

Join from the meeting link

<https://patentofficekolkata.webex.com/patentofficekolkata/j.php?MTID=maca8cca6c917efc0dc29e49fc3c28115>

Join by meeting number

Meeting number (access code): 2555 247 4458

Meeting password: idGYkSne392 (43495763 from video systems)



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Ministry of Commerce and Industry
Department for Promotion of Industry and Internal Trade
Office of the Controller General of Patents, Designs & Trademarks

IPR Awareness Programme
(Under National Intellectual Property Awareness Mission)


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Azadi Ka
Amrit Mahotsav

Creative India; Innovative India

Website: www.ipindia.gov.in

 19th July, 2023  12.00 P.M.

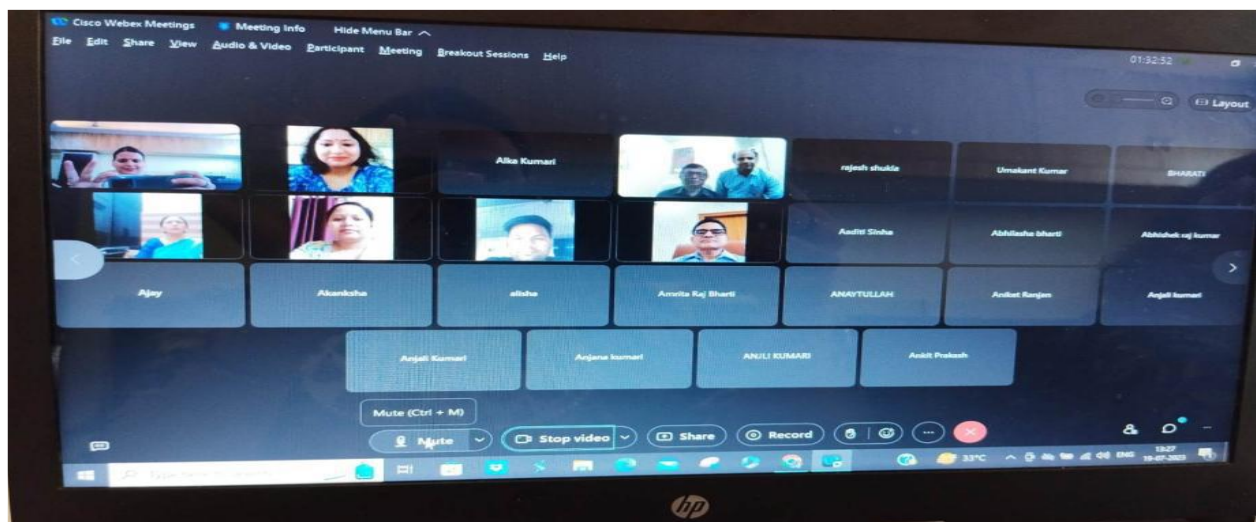
You are cordially invited to participate in the program

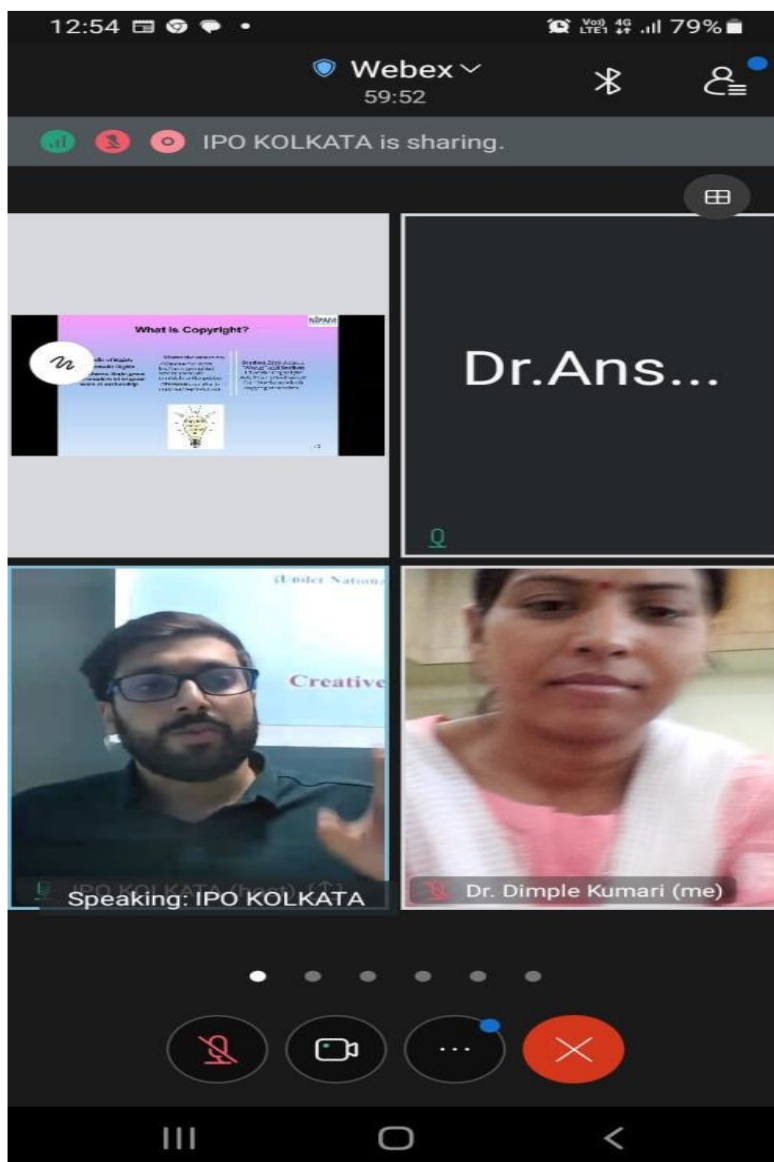
Platform: Cisco Webex

--Registration is compulsory for participation--
Registration Link:
<https://forms.gle/McPeYihd6xDjC1T3A>

Patron
Prof. (Dr.) Indrajit Prasad Roy
Principal, COCAS Patna

Organizing Departments
UGC Cell, Dept. of Chemistry & IQAC,
COCAS, Patna





Ecosystem for Innovations

1. Concept based Lab techniques

Titration is one of the most important analytical techniques used in the chemistry. It is included in every level in the graduation and post-graduation curriculum. As compared to the traditional step, a modified procedure is taught to the students so that the process is directed towards better concept development. The technique is cost effective and less time consuming.



This encourages the students to focus their activities towards sustainability.







2. Educational trips to Indian Institute of Patna

Educational trips increase the knowledge of students because there is a lot of knowledge that students cannot find in textbooks. Also, an educational trip facilitates the learning process because there is a change in the study environment as compared to a classroom. On this view, we go to a nearby institute, Indian Institute of Patna, with our post-graduation students to visit their advanced instruments laboratory, such as NMR spectroscopy, Mass spectroscopy, LC-MS, GC-MS, UV-Vis spectrophotometer, FTIR spectrophotometer, and some necessary lab equipment like Rotatory evaporator and their safe handling hands-on training.

1. Session 2016-2018



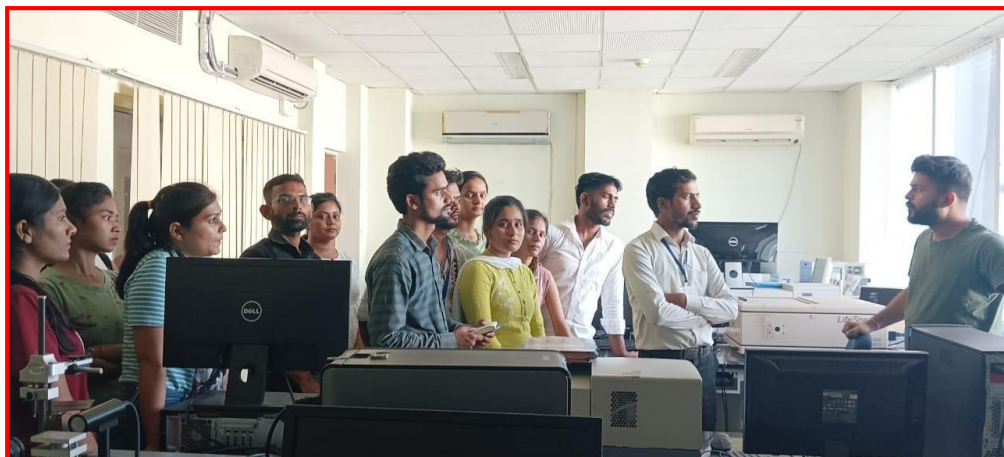


2. Session 2018-2020





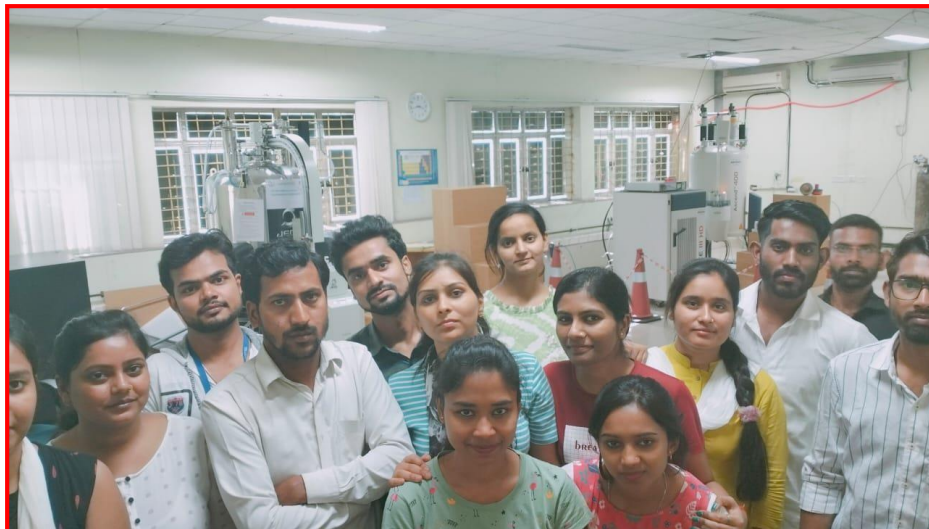
3. Session 2021-2023





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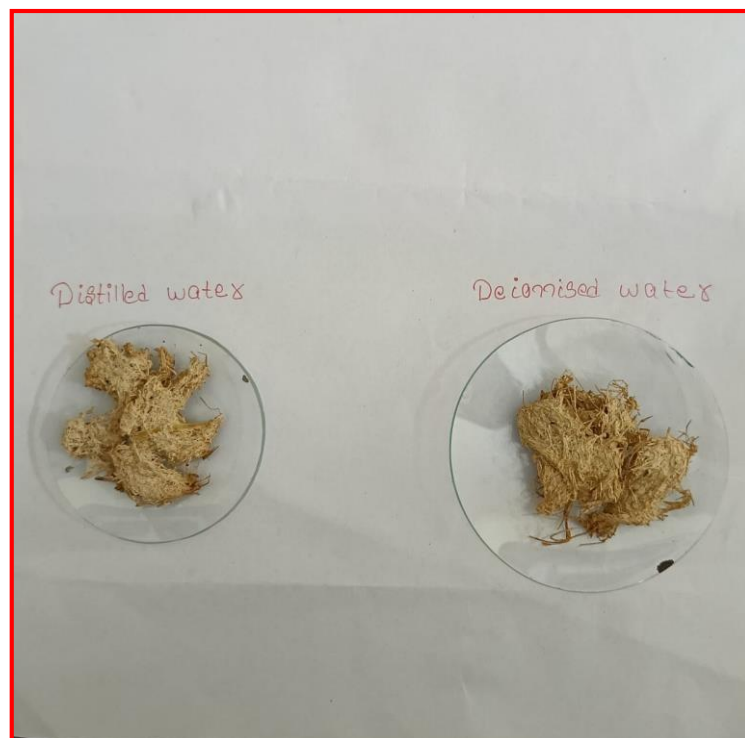
Agricultural and Industrial wastes are generated in huge amounts all over the world. Agricultural wastes may also cause harmful effect on the environment as they may contain fibres that decompose at very slow rate under normal environmental conditions. Agricultural wastes contain large amounts of cellulose which can be extracted for further use. Cellulose thus extracted can be used for various purposes including production of bio plastics.

The extraction method involves following steps:

1. Drying of Waste
2. Leaching with Mineral acid
3. Filtration
4. Treatment with Mineral base
5. Boiling of Waste with deionized water
6. Filtration
7. Bleaching









Other Initiatives to transmit Indian Knowledge System

2018

CLOTH DISTRIBUTION ON 05.01.2018



Clothes were distributed in Bahadurpur Slum area by NSS volunteers and people were educated about health, sanitation and education.

NATIONAL YOUTH DAY CELEBRATED ON 12.01.2018

पटना • शनिवार • 13 जनवरी 2018

स्वामी विवेकानंद की 155 वीं जयंती पर कॉलेज और विश्वविद्यालयों में हुए कार्यक्रम

कहीं वाद-विवाद प्रतियोगिता तो कहीं गोष्ठी

● पटना। कार्यालय संवाददाता

शहर के कॉलेज और विश्वविद्यालयों में शुक्रवार को स्वामी विवेकानंद की 155 वीं जयंती-सह-युवा दिवस धूमधाम से मनाया गया। कहीं कार्यक्रम कर स्वामी विवेकानंद को याद किया गया तो कहीं इस अवसर पर विभिन्न तरह की प्रतियोगिताएं आयोजित की गईं।

दक्षिण बिहार केंद्रीय विश्वविद्यालय पटना के पस में निबंध लेखन और वाद-विवाद प्रतियोगिता हुई। वहीं छात्र मंच 'नेन्सा स्टूडेंट स्टडी सेंटर' की ओर से 'राष्ट्रनिर्माण में युवाओं का योगदान' विषय पर विचार गोष्ठी आयोजित की गई। वाद-विवाद प्रतियोगिता में प्रथम एवं द्वितीय पुरस्कार परमानंद विभाग के मधुरिमा और अक्षय को मिला, जबकि तृतीय पुरस्कार मोडिया विभाग के सोरभ तिवारी ने कब्जा जमाया।

छात्रों ने स्वामी विवेकानंद को जाना

पटना विश्वविद्यालय के हिन्दी एवं पत्रकारिता विभाग में भी युवा दिवस कार्यक्रम का आयोजन किया गया। इस कार्यक्रम के मुख्य अतिथि दक्षिण बिहार केंद्रीय विश्वविद्यालय के पत्रकारिता विभाग के विभागाध्यक्ष अतीश परासर उपस्थित आए थे। कार्यक्रम को संबोधित करते हुए हिन्दी विभाग के विभागाध्यक्ष शरदेन्द्र कुमार ने कहा कि विवेकानंद एक ऐसे चिंतक थे जो ऐसे समय में आध्यात्म और विज्ञान दोनों को साथ लेकर चलते थे। कार्यक्रम में हिन्दी विभाग के डॉ. दिलीप राम, प्रो. भृगुनंदन विद्याजी, संजीव कुमार, रामजीवन राय, अमरेंद्र कुमार आदि उपस्थित थे।

कॉलेजों में भी मना युवा दिवस

युवा दिवस के अवसर पर वाणिज्य महाविद्यालय में भी कार्यक्रम आयोजित किया गया था। यहां कुलपति प्रो. रासबिहारी प्रसाद सिंह ने कहा कि स्वामी विवेकानंद ने भारतीय संस्कृति, परंपरा और ज्ञान को विश्व पटल पर उस समय गौरवान्वित किया, जब विदेशी लुट्टों ने भारतीय मरिचक में यह बैठा दिया था कि भारत में कोई परंपरा, संस्कृति और ज्ञानधारा ही नहीं है। इसी तरह आरकेडी कॉलेज और टीपीएस कॉलेज में एनएसएस की ओर से युवा दिवस आयोजित किया गया। जिसमें शिक्षकों और छात्रों ने स्वामी विवेकानंद के चित्र पर पुष्प अर्पित किया।

कॉलेज ऑफ कॉमर्स, आर्ट्स एंड साइंस कॉलेज के विभिन्न विभागों में कार्यक्रम आयोजित किया गया। एमलिस विभाग में डॉ. संगीता रिम्हा की अध्यक्षता में भाषण प्रतियोगिता आयोजित की गई। इसमें राजन कुमार

आरकेडी कॉलेज में शुक्रवार को स्वामी विवेकानंद की तस्वीर पर माल्यार्पण करते छात्र।

प्रथम, मिथुन कुमार सिंह द्वितीय और अनीता तीसरे स्थान पर रही। पीयू के कला एवं शिल्प महाविद्यालय में 'युवा वर्ग एवं रक्तदान' पर पोस्टर डिजाइन कार्यक्रम आयोजित किया गया।

एआईएसएफ ने भी कॉलेज ऑफ कॉमर्स, आर्ट्स एंड साइंस में युवा दिवस के अवसर सभा आयोजित की। इसी और, एबीवीपी के कॉलेज ईकाईयों ने स्वामी विवेकानंद की जयंती को युवा दिवस के रूप में मनाया।

आरकेडी कॉलेज में एबीवीपी ने अलग से गोष्ठी आयोजित की थी। इसी तरह बीएन कॉलेज में कार्यक्रम आयोजित किया गया था। जिसमें प्रधानाचार्य डॉ. राजकिशोर प्रसाद, चिक्की राय, दिव्यांशु भारद्वाज सहित शिक्षक और एबीवीपी के छात्र कार्यकर्ता मौजूद थे।

टीपीएस कॉलेज छात्र संघ और छात्र जनहित संघ संयुक्त रूप से भी केपस में स्वामी विवेकानंद की जयंती को मनाया और उन्हें याद किया।

On the eve of 155th anniversary of Swami Vivekanand, the day was celebrated with a great zeal by volunteers who took oath to follow the principles of Swami ji .Aspeech competition was organized on the national youth day. The winners of The speech comptrition were Hareram kumar, Gopal Kumar and Rupesh kumar got first, second and third position respectively.

HUMAN CHAIN FORMED ON 19.01.2018



A human chain was formed by NSS volunteers along with other students, faculties and others for awareness of eradication of social evils like dowry and child marriage.

Seven Days NSS Camp

1ST DAY NSS CAMP ORGANISED ON 11.02.2018



The seven days special camp was inaugurated by visit of volunteers to “old age home” where they learnt about different issues of old ages. They also surveyed about different facilities provided to them and their further requirements and desires.

2ND DAY CAMP ON 12.02.2018.



A nukkad natak on swachhta abhiyan was played on Bahadurpur Slum area to aware them about importance of sanitation, methods of cleanliness of body and surroundings. Volunteers also informed them about different diseases which occur due to poor hygiene.

3RD DAY CAMP ON 13.02. 2018





Plantation in the college campus was done by volunteers in the leadership of programme officer and they promised to take care of these plants. They had also taken oath to plant at least one tree on their birthday.

4th DAY CAMP ON 14.02.2018





Volunteers were educated about traffic rules volunteers took oath to follow them and save their lives and the lives of others too. An awareness Rally with informative banners on “Traffic Rules.”

5TH DAY BLOOD DONATION CAMP ON 15.02.2018



Blood Donation Camp organised in college campus and NSS volunteers donated blood. They also motivated other students in the campus to donate blood as it is not possible to prepare blood artificially and save the life of three persons.

6TH DAY CAMP ON 16.02.2018





Clothes were collected by NSS volunteers to donate needy persons. They surveyed the type of required cloths and distributed in the adopted Bahadurpur slum area.

7TH DAY CAMP ON 17.02.2018





Cultural programs was organized in the campus and lecture on importance of NSS was delivered by resource person.

TRAFFIC RULES AWARENESS PROGRAM ON 19.02.2018



An awareness program on road safety was organized by sanakalap jyoti and safety alliance under Indian Road Safety campaign in the college campus. Traffic superintendent of police, patna was the chief guest on the occasion. He motivated students to follow traffic rules to lessen the road accident.

IMPACT OF CLIMATE CHANGE ON INDIAN ECONOMY: AN ANALYSIS ON 17.04.2018



जलवायु परिवर्तन से इकोनॉमी पर पड़ रहा असर

सिटी भास्कर | पटना

कॉलेज ऑफ कॉमर्स, आर्ट्स एंड साइंस में मंगलवार को अर्थशास्त्र विभाग की ओर से भारतीय अर्थव्यवस्था पर जलवायु परिवर्तन के प्रभाव पर लेक्चर में मुख्य वक्ता के रूप में नेशनल काउंसिल ऑफ अप्लाइड इकोनॉमिक रिसर्च के प्रो. दिलीप कुमार आए। उन्होंने कहा कि जलवायु परिवर्तन के कारण न केवल प्रकृति का संतुलन प्रभावित हो रहा है, बल्कि वैश्विक अर्थव्यवस्था भी प्रभावित हो रही है। जलवायु परिवर्तन के परिणाम स्वरूप



भारत की मानसूनी प्रणाली और कृषि व्यवस्था में बदलाव आया है। किसान लगातार सूखे और बाढ़ की समस्या से त्रस्त हो रहे हैं। कॉलेज के प्राचार्य प्रो. तपन कुमार शान्दिल्या ने कहा कि

वैज्ञानिकों ने भविष्य में जलवायु परिवर्तन की घटनाओं में बढ़ोतरी की आशंका जताई है। भविष्य में यह देश के लिए एक गंभीर चुनौती की स्थिति हो सकती है क्योंकि भारत की लगभग 50 फीसदी

जनसंख्या प्रत्यक्ष या अप्रत्यक्ष रूप से आजीविका के लिए कृषि पर निर्भर है। अर्थशास्त्र के विभागाध्यक्ष प्रो. उमेश प्रसाद ने कहा कि अंतरराष्ट्रीय मुद्रा कोष के वर्ल्ड इकोनॉमिक आउटलुक की ओर से जारी एक अध्ययन में स्पष्ट बताया गया है कि जलवायु परिवर्तन के कारण भारत जैसे कृषि आभारित विकासशील देशों की अर्थव्यवस्था पर सर्वाधिक प्रतिकूल प्रभाव पड़ेगा। व्याख्यान के दौरान प्रो. प्रवीण कुमार, डॉ. वैकुण्ठ राय, प्रो. महेंद्र प्रताप सिंह, प्रो. केवी पद्मदेव, प्रो. रमेश चौधरी, प्रो. मृदुला कुमारी, डॉ. संजय पांडेय आदि मौजूद रहे।



A one-day national seminar was organised by department of economics, college of commerce arts and science on “impact of climate change on indian economy: an analysis’ on 17 .04. 2018. The seminar presided by prof.(dr.) Tapan kumar shandilya, principal. Dr. Dalip kumar head of national council of applied economic research, new delhi was the main speaker. He emphasized that climate change has significantly impacted the economy, causing disruptions in various sectors. Extreme weather events, rising sea levels, and shifts in agriculture patterns have led to increased costs for businesses and governments. The need for adaptation measures and the potential for damage to infrastructure pose challenges, affecting economic stability and growth.

SWACHH BHARAT SUMMER INTERNSHIP PROGRAMME- AREA OF OPERATION : UDAINI

KANAUJI KACHUARA FROM 15.05.2018 TO 20.07.2018



सहयोगी शरकत करग।

ससुम का कासत रहन क बजाय एन कालज क प्राचाय डा. एसपा.शाह

कॉलेज की टीम गई संबलपुर और इतवारपुर

पटना | वरीय संवाददाता

कॉलेज ऑफ कॉमर्स आर्ट्स एंड साइंस पटना के अर्थशास्त्र विभाग की टीम संबलपुर और एमबीए की टीम कुरुथोल पंचायत के इतवारपुर गांव गई। स्वच्छ भारत अभियान के तहत दो सप्ताह के समर इंटरनशिप प्रोग्राम के छठे दिन बुधवार को प्राचार्य प्रो. तपन कुमार शांडिल्य ने टीम को रवाना किया। कार्यक्रम के नोडल अधिकारी प्रो. प्रवीण कुमार ने बताया कि टीम ने लोगों को स्वच्छता के प्रति जागरूक किया।



समर इंटरनशिप के लिए जाते कॉलेज ऑफ कॉमर्स आर्ट्स एंड साइंस के छात्र-छात्राएं।



COLLEGE OF COMMERCE, ARTS & SCIENCE, PATNA
A constituent unit of Patliputra University, Patna

स्थापित 1949
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Department of MBA organized a swachh bharat summer internship programme at college of commerce arts and science patna, area of operation : udaini kanauji kachuara dated 15.05. 2018 to 20..07.2018 .

Professor tapan kumar shandilya stated that the swachh bharat internship program aims to engage youth in the swachh bharat abhiyan, india's nationwide cleanliness campaign. This program offers young individuals an opportunity to contribute to the cleanliness and sanitation drive across the country. Interns actively participate in community-level activities, awareness campaigns, and projects focussed on improving hygiene and waste management. By promoting hands-on involvement, the swachh bharat internship program not only instills a sense of social responsibility but also empowers the youth to be catalysts for positive change in their communities.

**WORKSHOP ON 'THE ROLE OF TEACHER'S IN SHAPING YOUNG MINDS' ON
16.05.2018.**

शिक्षकों के सम्मान में छात्रों ने की थैंक्स गिविंग पार्टी



कॉलेज ऑफ कॉमर्स में आयोजित सम्मान समारोह में मौजूद शिक्षक।

पटना (एसएनबी)। कॉलेज ऑफ कॉमर्स, आर्ट्स एंड साइंस, पटना में इतिहास विभाग के बर्ड ईयर के छात्रों ने शिक्षकों के सम्मान में थैंक्स गिविंग पार्टी का आयोजन किया। समारोह के मुख्य अतिथि प्रधानाचार्य प्रोफेसर तपन कुमार शॉडिल्य ने कहा कि विद्यार्थी से ही शिक्षण संस्थानों की पहचान बनती है। महाविद्यालय में योग्य शिक्षकों की कमी नहीं है। छात्र इनसे जितना हो सके ज्ञान अर्जित करें।

इतिहास विभाग की पूर्व विभागाध्यक्ष प्रोफेसर सुशीला सहाय ने कहा कि महाविद्यालय के छात्र-छात्राओं में अनुशासन और प्रतिभा की कमी नहीं है। यही कारण है कि इतिहास के छात्र विहार ही नहीं बल्कि पूरे देश में उच्च पदों पर कार्यरत हैं। कुलानुशासक प्रो. मनोज कुमार ने छात्रों को

अपने लक्ष्य पर ध्यान केंद्रित रखने की सलाह दी। छात्रों ने रंगारंग सांस्कृतिक कार्यक्रम भी प्रस्तुत किये जिसमें प्रिया के घुमर घुमर... और आशशा के छम छम छम... पर क्लासिकल नृत्य ने दर्शकों को झूमने पर मजबूर कर दिया।

कॉलेज ऑफ कॉमर्स में आयोजित समारोह में पेश किये गये नृत्य और संगीत के रंगारंग कार्यक्रम

वहीं निमिन, आमिन और समीर द्वारा कॉलेज लाइफ पर आधारित नाटक को दर्शकों ने खूब पसंद किया। इनके अलावा प्रियंका, अर्चना, सलोनी और पूनम ने भी

फिल्मी गीतों पर आकर्षक नृत्य प्रस्तुत किये। मौके पर इतिहास विभागाध्यक्ष प्रो. उषा प्रसाद, प्रो. राजेश शुक्ला, प्रो. सुनीता लाल, प्रो. गिरीश कुमार समेत बड़ी संख्या में शिक्षक व छात्र-छात्राएं उपस्थित थे। कार्यक्रम का संचालन अरणव और नेहा ने किया। धन्ववाद ज्ञापन प्रो. राजीव रंजन ने किया।

In honour of the teachers, students of history department, college of commerce arts, and science conducted a workshop on 'the role of teacher's in shaping young minds' on 16.05.2018. They mentioned that teacher's play a pivotal role in shaping minds and fostering a love for learning. Their guidance goes beyond textbooks, influencing character development and instilling valuable life skills. The impact of a dedicated teacher extends far beyond the classroom, leaving a lasting imprint on students' lives.

SWACHH BHARAT SUMMER INTERNSHIP ORGANIZED FROM 22.05.2018 TO 22.07.2018.



नुककड़ नाटक के जरिये ग्रामीणों को बताया सफाई का महत्त्व

■ सहारा न्यूज ब्यूरो

पटना ।

कॉलेज ऑफ कॉमर्स, आर्ट्स एंड साइंस, पटना के छात्र छात्राओं ने दो माह के स्वच्छ भारत समर इंटरनशिप प्रोग्राम के दौरान गांव के लोगों को जागरूक करने के लिए गुरुवार को नुककड़ नाटक का मंचन और स्वच्छता मेले का आयोजन किया। मेले का उद्घाटन प्रिंसिपल प्रो तपन कुमार शॉडिल्य ने किया ।

नुककड़ नाटक के माध्यम से छात्रों ने गांववासियों को स्वच्छता और वृक्षारोपण के महत्त्व को समझाने की कोशिश की। इस अवसर पर स्वच्छता मेला भी लगाया गया जिसका थीम 'एक कदम स्वच्छता की ओर' था। महाविद्यालय के छात्र-छात्राएं गत दो माह से राजधानी के बगल में स्थित उदयनी गांव में वृक्षारोपण और क्विज प्रतियोगिता के



कॉलेज ऑफ कॉमर्स के विद्यार्थियों ने राजधानी के बगल में स्थित उदयनी गांव में किया स्वच्छ भारत समर इंटरनशिप प्रोग्राम

माध्यम से गांववासियों को जागरूक कर रहे हैं। इस अवसर पर प्रो अशुतोष कुमार सिंह ने गांव के मुसहरी टोला में छात्रों द्वारा बनाए गए मिनी गार्डन का उद्घाटन किया। इस दौरान इंटरनशिप में शामिल चंचा, मीनू, पूजा, आरती, वर्षा, अंशु, पुष्पा, खुशव, रितेश, अनुराग, गौरव, विशाल, अमृता और शाहीन समेत बड़ी संख्या में छात्र-छात्राएं और गांववासी मौजूद थे।

कॉलेज ऑफ कॉमर्स में खेल-कूद 30 से : कॉलेज ऑफ कॉमर्स, आर्ट्स एंड साइंस, पटना में इंटर क्लास खेल-कूद प्रतियोगिता 30 जुलाई से शुरू होगी।

स्पोर्ट्स के प्रोफेसर इंचार्ज प्रो कौशलेन्द्र कुमार सिंह ने बताया कि तीन दिवसीय क्विज प्रतियोगिता 30 जुलाई से शुरू होगी। जबकि, दो दिवसीय वॉलीबॉल प्रतियोगिता दो अगस्त और बैडमिंटन प्रतियोगिता चार अगस्त से शुरू होगी।

Department of zoology, college of commerce, arts a science patna, organized swachh bharat summer internship on 22.05.2018 to 22.07.2018. Students from the college of commerce, arts and science participated in a two- month swachh bharat internship program. During this initiative, students organized street play and conducted a swachhta fair to raise awareness among the people of uddaini villages. They also campaigned for plantation and successfully planted various saplings. Dr. Tapan kumar shandilya presided over the programme, while dr.



Ashutosh kumar inaugurated the mini- garden campus in mushhali tola. Richa, minu, puja, aarti, pushpa, and many others attended the internship program.

INTER COLLEGE DEBATE COMPETITION: IMPACT OF MEDIA ON YOUTH ON 28.05.2018



सोशल मीडिया जनसंपर्क का सशक्त माध्यम

कॉलेज ऑफ कॉमर्स में अंतर महाविद्यालय वाद-विवाद प्रतियोगिता आयोजित

सहारा न्यूज ब्यूरो

पटना।

कॉलेज ऑफ कॉमर्स आर्ट्स एंड साइंस पटना और रोटरी पाटलिपुत्र के संयुक्त तत्वावधान में सोशल मीडिया का हमारे पर प्रतियोगिता में पटना, मगध और पाटलिपुत्र विश्वविद्यालयों के 18 महाविद्यालयों की 36 टीमों ने भाग लिया

बुरा प्रभाव विषय पर सोमवार को अंतर महाविद्यालय वाद-विवाद प्रतियोगिता का आयोजन किया गया। प्रतियोगिता का उद्घाटन रोटरी पाटलिपुत्र के डिस्ट्रिक्ट गवर्नर विवेक कुमार ने किया। अपने स्वागत भाषण में प्रधानाचार्य प्रो. तपन कुमार शंदिन्य ने समाज विशेष रूप से युवाओं पर सोशल मीडिया के पड़ने वाले प्रभावों पर विस्तार से प्रकाश डाला। इस प्रतियोगिता में पटना, मगध और पाटलिपुत्र विश्वविद्यालयों के 18 महाविद्यालय की 36 टीमों ने भाग



वाद-विवाद प्रतियोगिता में मंचासीन अतिथिगण।

लिया तथा विषय के पक्ष और विपक्ष में अपने विचार रखे। प्रतिभागियों द्वारा प्राप्त अंक के आधार पर निर्णायक मंडल ने पटना वीमेंस कॉलेज को प्रथम, कॉलेज ऑफ कॉमर्स आर्ट्स एंड साइंस पटना को दूसरा तथा वीएस कॉलेज, दानापुर को तीसरा पुरस्कार प्रदान किया गया। इस अवसर पर

मुख्य अतिथि के रूप में पूर्व पुलिस महानिदेशक अभयानंद, डॉ. आरएन सिंह, तथा अपर पुलिस महानिरीक्षक जीएस गंगवार ने भी अपने विचार व्यक्त किए। कार्यक्रम की अध्यक्षता रोटरी पाटलिपुत्र के अध्यक्ष अशोक अग्रवाल ने की। इस अवसर पर डिबेटिंग सोसाइटी के समन्वयक

प्रो. कुमार चन्द्रदीप, कुलानुशासक डॉ. मनोज कुमार, डॉ. विनोद कुमार मंगलम, डॉ. संगीता सिन्हा, डॉ. तारिक फातमी, छात्र संघ अध्यक्ष विकास कुमार, सचिव मेराज फातिमा, हिमांशु कुमार और अनुभा सिंह समेत बड़ी संख्या में शिक्षक और छात्र-छात्राएं उपस्थित थे।

College of commerce in collaboration with rotary pataliputra organized 2nd inter college debate competition on 'impact of media on youth' dated 28.05.2018. District governor of rotary patliputra vivek kumar inaugurated the debate competition. Dr. Tapan Kumar Shandilya mentioned social media significantly influences the youth, shaping their perspectives, social interactions, and self-esteem. It provides a platform for connectivity but also exposes them to



challenges like cyberbullying and unrealistic standards. Striking a balance between online engagement and offline well-being is crucial for a healthy development.

WORLD NO TOBACCO DAY CELEBRATED ON 31.05.2018



An awareness campaign on addiction to tobacco was organized by NSS volunteers in the leadership of program officer. Volunteers informed youth about severe diseases caused by use of tobacco and advised not to get addicted to this life threatening tobacco products.

WORKSHOP ON “SAVE EARTH “ AND PLANTATION ON ENVIRONMENTAL DAY ON 5.06.2018.





घरघर में पेड़ लगाने की प्राचार्य ने की अपील

पटना (एसएनबी)। विश्व पर्यावरण दिवस के अवसर पर मंगलवार को कॉलेज ऑफ कॉमर्स, आर्ट्स एंड साइंस, पटना में वृक्षारोपण किया गया। प्रधानाचार्य प्रो. तपन कुमार शॉडिल्य ने महाविद्यालय स्थित वनस्पति उद्यान में वृक्षारोपण किया। इस अवसर पर उन्होंने छात्र-छात्राओं को संबोधित करते हुए पर्यावरण संरक्षण के लिए शहरी और ग्रामीण क्षेत्रों में घरघर जाकर लोगों को पर्यावरण के प्रति जागरूक करने का आह्वान किया। उन्होंने कहा कि आज आवश्यकता इस बात की है कि योजनाबद्ध तरीके से शहरी और ग्रामीण क्षेत्रों में वृक्षारोपण किया जाए। वृक्षारोपण कार्यक्रम के दौरान कुलानुशासक डॉ मनोज कुमार, प्रो आशुतोष कुमार सिंह, प्रो संतोष कुमार, प्रो सलोनी कुमार, प्रो मृदुला कुमारी, डॉ संगीता सिंह, डॉ खालिद अहमद, मीडिया सेल के प्रो तारिक फातमी, छात्र संघ अध्यक्ष विकास कुमार, काउंसिल सदस्य हेम राज समेत बड़ी संख्या में शिक्षक और छात्र-छात्रावें उपस्थित थे।

Workshop on “save earth “ and plantation on environmental day was organized at the college of commerce arts and science patna on 5.06. 2018. Tapan kumar shandilya presided over the seminar. Prof. Tapan kumar mentioned that environmental day serves as a crucial reminder of our responsibility to protect and preserve the earth. It’s a time to reflect on sustainable practices, promote eco-conscious choices, and collectively work towards a healthier planet for future generations. Every small effort counts in nurturing our environment and fostering a sustainable coexistence. He further mentioned that sustainable development involves meeting the needs of the present without compromising the ability of future generations to meet their own needs. It encompasses economic, social, and environmental considerations. Key aspects include responsible resource management, social equity, and environmental conservation. Achieving sustainable development requires a global commitment to balance progress with environmental preservation and social justice, fostering a resilient and harmonious world current and future inhabitants.



Dr. Manoj kumar, prof. Ashutosh kumar sinha, prof. Santosh kumar, prof. Mridula kumari, dr. khalid aahmad, prof. Tariq fatmi graced the occasion.

WORKSHOP ON 'VAN MAHOTSAV' ORGANIZED ON 07.06.2018



Workshop on 'van mahotsav' was organized by nss wing of college of commerce arts and science on 07.06.2018. Prof. Tapan kumar presided over the workshop. He mentioned that van mahotsav or tree plantation day, is an annual celebration in india dedicated to planting trees and raising awareness about the importance of forests. It typically takes place in the first week of july, encouraging communities to come together for afforestation efforts. This initiative aims to combat deforestation, promote environmental sustainability, and instill a sense of responsibility towards nature among citizens. Trees planted during van mahotsav contribute to ecological balance, biodiversity, and the overall well-being of the planet.

THE YOGA DAY FUNCTION ON 21 .06. 2018



The yoga day on 21 .06. 2018 was conducted at the college of commerce arts, and science in patna. Prof. Tapan kumar shandilya presided over the function. Hon'ble vice chancellor gulabchand ram jaiswal and hon'ble pro vice chancellor girish chowdhary graced the occasion.

Prof. Tapan kumar shandilya shared his views on the importance of yoga. He mentioned that yoga is not just a physical exercise; it is a holistic practice that promotes overall well-being. It enhances flexibility, strength, and balance while also calming the mind. Beyond the physical benefits,yoga cultivates mindfulness and stress reduction, fostering mental and emotional harmony. Regular practice contributes to improved focus, better posture, and a sense of inner



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peace. Embracing yoga in daily life can be a powerful tool for maintaining both physical and mental health.

INTERNATIONAL SEMINAR ORGANIZED ON STRESS MANAGEMENT AND
ENERGIC HEALING DATED 16.07.2018

IQAC INTERNATIONAL SEMINAR
on
STRESS MANAGEMENT & ENERGIIC HEALING
Invited Speakers
Prof. C.N. Daftuar, Pune & Mr. Chin Kheng Boon, Singapore
Organised by:
P.G. CENTRE OF PSYCHOLOGY
College of Commerce, Arts & Science, Patna - 800 020
Date: 16th July, 2018 Time : 11.00 AM





PG Department of psychology College of Commerce Arts and Science in collaboration with IQAC organised International Seminar on Stress Management and Energetic Healing. The invited speakers were Prof. C.N. Daftuar, Pune and Mr. Chin kheng Boon, Singapore. The speakers mentioned that in today's fast-paced world, effective stress management techniques play a crucial role in maintaining mental and physical well being. They further mentioned that exploring the realm of energetic healing involves tapping into the body's subtle energies to promote balance, vitality and a holistic approach to health. Recognizing the intricate connection between the mind and body is fundamental to both stress management and energetic healing practices. Dr. Tapan Kumar Shandilya stressed that many individuals turned to holistic approaches such as meditation, yoga, and mindfulness to not only alleviate stress but also enhance their overall energetic state. Incorporating self-care rituals into daily life contributes to stress reduction and fosters a sense of rejuvenation through practices that nourish both body and spirit.

Energetic healing emphasizes the importance of maintaining a positive energy flow within oneself, fostering resilience and a sense of inner calm.

NATIONAL SEMINAR ON “ THE INCLUSIVE VISION OF SOCIETY” ON 19.07.2018



Department of sociology college of commerce arts, and science, patna, in collaboration with iqac organized a one- day national seminar on “ the inclusive vision of society” on 19.07.2018. Dr. Tapan kumar shandilya presided over the seminar. He emphasized that an inclusive vision of society entails creating a community that embraces diversity, respects individual differences, and equal opportunities for all its members. It emphasizes breaking down barriers based on race, gender, ethnicity, and other characteristics, fostering a sense of belonging for everyone. This approach aims to build a society where everyone has equitable access to resources, opportunities, and participation, fostering a more harmonious and supportive community.

VAN MAHOTSAV CELEBRATED ON 4.08.2018.



Van mahotsav was celebrated at the college of commerce arts and science by the nss and ncc wings dated 4 -08-2018. The principal of college dr. Tapan kumar shandilya inaugurated van mahotsav. They campaigned for a green campus. They emphasized that van mahotsav hold significant importance as it raises awareness about the crucial role trees play in maintaining ecological balance. The event encouraged mass tree plantation, emphasizing the importance of afforestation to combat deforestation, soil erosion, and climate change. Additionally, it fosters



a sense of responsibility towards the environment, promoting sustainable practices for a greener and healthier planet.

NCC CADETS PAID TRIBUTES ON 8.08.2018



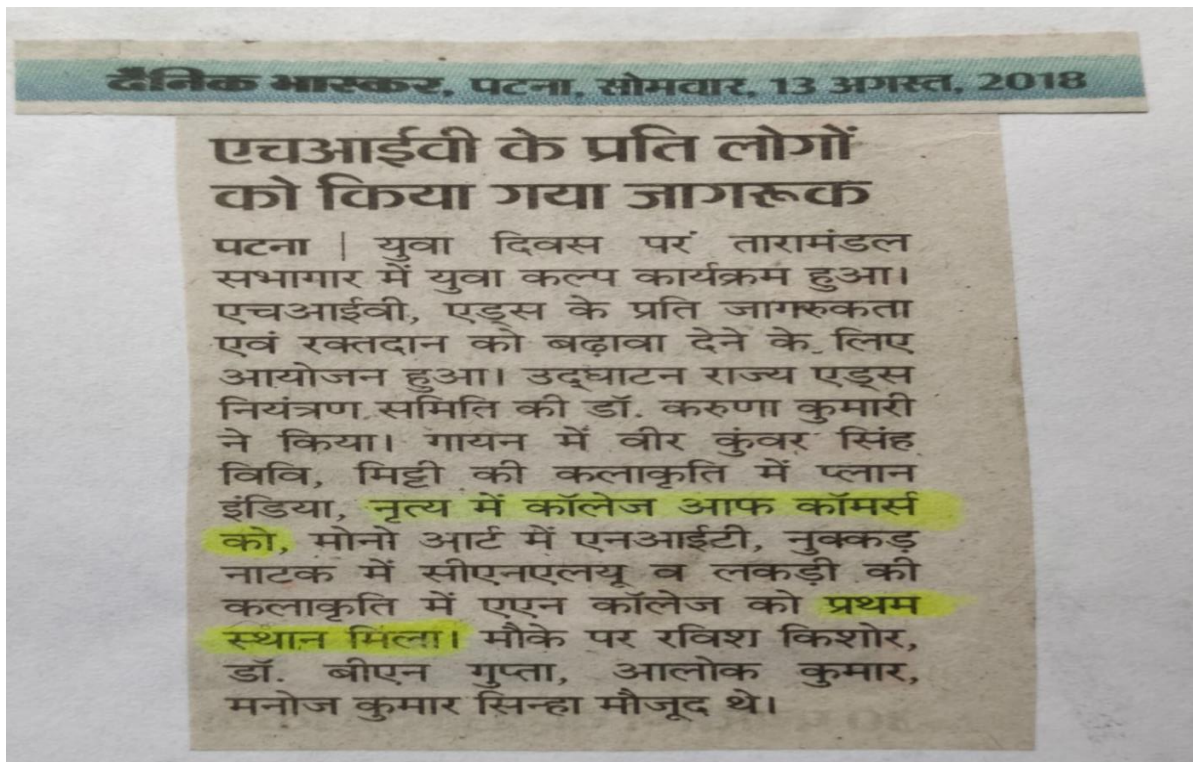
कॉलेज ऑफ कॉमर्स में मंगलवार को पौधरोपण करते एनसीसी कैडेट।

NCC cadets from the college of commerce, arts and science paid tribute to the late former ncc cadet mukesh kumar munna, soldiers, and the former ncc chief of the college ajay kumar sinha by planting plants in the college campus. Dr tapan kumar shandilya stated that patriotism is a sense of love, devotion and loyalty to one's country. It often involves pride in its history,



culture and achievements as well as a commitment to its well being and interests. While patriotism can foster unity, its essential to balance it with a global prospective and respect for diverse opinions.

INTERNATIONAL YOUTH DAY CELEBRATED ON 12.08.2018



NSS volunteers participated in yivakalp program organized by Bihar state aids control society for awareness of HIV/AIDS in planetarium. In Folk dance competition, the NSS team of the college got 1st position.

INDEPENDENCE DAY CELEBRATED ON 15.08.2018



Independence day was celebrated at the college of commerce, arts, and science on 15.08.2018. Tapan kumar shandilya emphasized upon developing a sense of fundamental duties and preserving our national identity to safeguard our cultural heritage amidst the challenges of modernization. In his speech, he mentioned, “let us reflect on the sacrifices of those who secured our freedom. As we celebrate, may we renew our commitment to upholding the values of democracy, unity, and progress. Let the spirit of independence inspire us to contribute towards building a stronger, inclusive nation.”

COLLEGE CELEBRATED FOUNDATION DAY ON 5.09.2018



The 70th foundation day of the college of commerce arts and science, along with teacher's day, was celebrated on 5.09.2018. Principal tapan kumar shandilya stated that the college of commerce, arts, and science plays an important role in shaping the future of students. Through diverse academic programs and extracurricular activities, college provide a platform for intellectual growth, skill development, and character building. The educational environment fosters critical thinking, encourages collaboration, and equips students with the knowledge and tools needed to navigate their future careers. Additionally, college serve as a hubs for cultural exchange, fostering a holistic development that goes beyond academic hearing, preparing students for the challenges and opportunities they will encounter in the professional world.

SYMPOSIUM ON 'RELEVANCE OF GANDHIAN PHILOSOPHY IN THE PRESENT PERSPECTIVE' ORGANIZED ON 09.10.2018.



On the occasion of 150 years of celebrating the mahatma symposium on 'relevance of gandhian philosophy in the present perspective' was organized in the college of commerce, arts and science patna -20 , dated 09.10.2018. The main speakers were prof.hemnath rao hanumankar director, development management institute, patna and prof. Parmanand singh hod, gandhian thought, t.m bhagalpur university. Prof. Gulab chand ram jaiswal vice-chancellor, patliputra university and prof.girish kumar chowdhary pro- vice-chancellor, patliputra university attended the symposium and were chairperson of the symposium. Dr. Tapan kumar shandilya presided over the symposium.

They emphasized that gandhian philosophy remains relevant today as it emphasizes non-violence, truth, and social justice. In the present perspective, gandhi's teachings offer valuable insights for conflict resolution, ethical governance, sustainable development. His emphasis on simplicity, community welfare, and the empowerment of the marginalized is particularly pertinent in addressing contemporary challenges such as environmental sustainability, social inequality, and global harmony. Gandhi's principles continue to inspire movements and leaders striving for a more just and compassionate world.



SEMINAR ON 'WORLD FOOD DAY' ON 16.10.2018.



The college of commerce, arts, and science organized a national seminar on 'world food day', sponsored by Bihar State Productivity Council, on 16.10.2018. Dr. Tapan Kumar Shandilya presided over the seminar. He stated that World Food Day, observed on October 16th, highlights the importance of food security and global hunger. This day serves as a reminder of the need for sustainable agricultural practices, equitable distributions of resources, and access to nutritious food for all. It calls for collective efforts to combat hunger, promote agricultural productivity, and ensure a sustainable future where no one goes to bed hungry. World Food Day emphasizes the crucial role of individuals, communities, and nation in achieving a world free from hunger and malnutrition.



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2019

Seminar on Creativity and Entrepreneurship

Date: 11.01.2019



The IQAC of the college organized a seminar dt. 11.01.2019 on the topic “creativity and entrepreneurship” on the occasion of National Youth Day. Chief speaker was Sri Vijay Prakash (Retd. I.A.S.) said that creativity is a skill that can be learned and nurtured. Many people believe that creativity is innate, but this isn't true. Creativity is an important part of the entrepreneurial process because it helps entrepreneurs to solve problems in new ways and come up with original ideas for products or services. He further discussed that how entrepreneurship promotes economic growth, provides access to goods and services, and improves the overall standard of living. Prof. Tapan Kumar Shandilya (Principal, COCAS) said in his presidential address that many entrepreneurs are making positive impact on their communities and improve their well-being by catering to underserved areas and developing environment-friendly products. Overall, 189 participants were participated in this seminar.

IQAC संगोष्ठी
सृजनात्मकता और उद्यमिता
मुख्य वक्ता - श्री विजय प्रकाश
मा. प्र. से. (से.नि.)
अध्यक्षता - डॉ० तपन कुमार शॉडिल्य, प्राचार्य, COCAS, पटना
दिनांक - 11-01-2019
स्थान - कॉलेज ऑफ कॉमर्स, आर्ट्स, एण्ड साइंस, पटना



Seminar on Stress Management

Date: 13.03.2019



The IQAC of the college organized one day seminar on stress management dt 13.03.2019. The resource person was from I.V. Panchtasha, Assam Ms. Lalita and Sri. Shankar. During the seminar Ms. Lalita said that people nowadays are getting Irritable, angry, impatient or easily wound up, over-burdened, overwhelmed, anxious, nervous and depressed due to heightened level of stress. She proceeded that stress is a mental reaction to our body's experiences due to a demanding circumstance or event requiring immediate attention. This reaction initiates the nervous system to produce adrenaline and cortisol hormones and release them in the blood system; gradually, it suppresses the functions of the immune, digestive, and reproductive systems. That is why it becomes essential to handle our stress levels effectively to keep ourselves physically and mentally fit.

Sri. Shankar said that stress management is a process that helps an individual to control stress levels by practicing self-care relaxation and also imparts some techniques to handle stress when it occurs. He suggested that the techniques of stress management offer a range of ways to help people better deal with stress and difficulty, adversity, in the life. Further they discussed several stress management techniques such as, time management, self-limitation, having a friendly social network, reducing the noise, having healthy diet, doing exercise, meditation, and following good sleeping habits. Overall, 197 participants from numerous departments were participated in this seminar.



कालेज ऑफ कामर्स में स्ट्रेस मैनेजमेंट पर व्याख्यान

(आज समाचार सेवा)

पटना। कालेज ऑफ कामर्स आर्ट्स एण्ड साइंस पटना में मंगलवार को स्ट्रेस मैनेजमेंट पर एक व्याख्यान का आयोजन किया गया। कार्यक्रम की अध्यक्षता प्रधानाचार्य प्रो तपन कुमार शार्डिल्य ने की। इस अवसर पर असम की आई वी पंचतशा, ललिता बहन और शंकर भाई ने अपने व्याख्यान में आम लोगों विशेष कर छात्रों को तनाव मुक्त रहनेए तनाव से बचने तथा तनाव को नियंत्रित करने के उपायों पर विस्तार से प्रकाश डाला। व्याख्यान को मुख्य अतिथि के रूप में प्रो. कुमारी लक्ष्मी सिंह ने भी संबोधित किया। धन्यवाद ज्ञापन प्रो. मृदुला कुमारी ने किया। इस अवसर पर प्रो. सलोनी कुमार और प्रो. खालिद अहमद समेत बड़ी संख्या में छात्र-छात्राएं और शिक्षक उपस्थित थे।



अपने लिए आधा घंटा समय निकालें हो जायेंगे स्ट्रेस फ्री



कॉलेज ऑफ कॉमर्स में आयोजित सेमिनार में मौजूद अतिथि .

पटना. कॉलेज ऑफ कॉमर्स आर्ट्स एंड साइंस में मंगलवार को स्ट्रेस मैनेजमेंट पर सेमिनार का आयोजन हुआ . इस अवसर पर असम की आइवी पंचतशा, ललिता बहन और शंकर भाई ने अपने व्याख्यान में छात्रों को तनाव मुक्त रहने, तनाव से बचने तथा तनाव को नियंत्रित करने के उपायों पर विस्तार से प्रकाश डाला . उन्होंने कहा कि भाग-दौड़ भरी जिंदगी में स्ट्रेस हावी हो गया है . स्ट्रेस से चिड़चिड़ेपन की शिकायतें सामने आ रही हैं . इसलिए जरूरी है कि आप एक बार अपनी दिनचर्या देखें और सोचें कि कहीं आपका लाइफ स्टाइल ही तो स्ट्रेस का कारण नहीं है . आपको स्ट्रेस से फ्री होने का उपाय करना होगा . हर रोज आधा घंटा समय देकर अपने आप को स्ट्रेस फ्री हो सकते हैं . सुबह और समय के समय वॉक पर निकलने से आप रिलैक्स महसूस करेंगे . रात के खाने के बाद भी वॉक पर निकल सकते हैं .

National Integration Camp

24.03.2019 TO 30.03.2019

National Integration Camp was organized from 24.03.2019 to 30.03.2019 at Shivalik Public School, Chandigarh ,Punjab. Five volunteers along with program officer Participated in this camp. All volunteers participated in all events and programs organised in the camp.



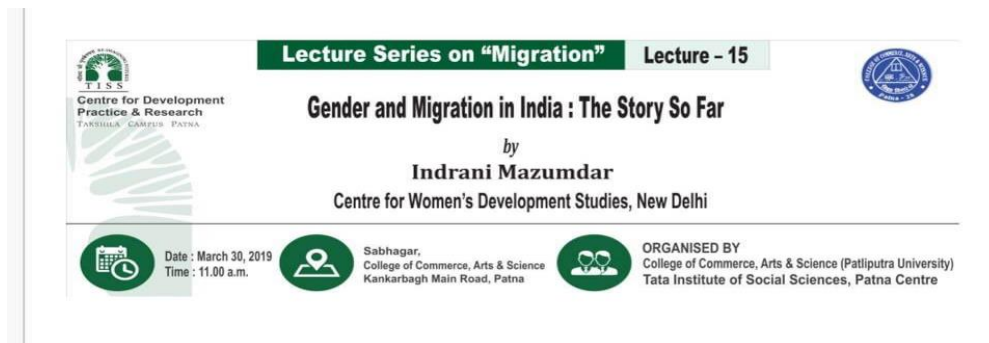
Seminar on Gender and Migration in India: The Story So Far

Date: 30.03.2019



The IQAC of the college organized one day seminar on “Gender and Migration in India: The Story So Far” dt. 30.03.2019. The resource person was Indrani Mazumdar, Centre for Women’s Development Studies, New Delhi. She said that we should focus on the changes in women’s lives during the era of liberalization and globalization. She further stressed that mass organization workers are calling for further research on women’s migration due to the connection between heightened vulnerability of migrating women, the agrarian crisis, and social differentiation in the era of liberalization/deregulation. The crisis, which has led to large-scale farmer suicides, is seen as aggravating vulnerability and distress in migration. Existing gender-sensitive studies on women’s migration have focused on survival migration by tribal and poor women, but rarely connected with policy frameworks or macro contexts. Total, 197 participants participated in this seminar.

Link of the Seminar: <https://www.youtube.com/watch?v=vtoH-sBSHns>





Indrani Mazumdar Speaks on Gender and Migration in India : The Story So Far

TISS Patna
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25



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Seminar on Personality Development and Character Building

Date: 22.05.2019

The college organized one- day seminar on Personality Development and Character-Building. The resource person was Sri. Atul Kothari, New Delhi. Prof. G.C.R. Jaisawal, Vice Chancellor, Patliputra University, Patna presided over the seminar. The chief Guest was pro. Vijay Kant Das, Member, University Service Commission, Patna. Sri. Atul Kothari discussed in the seminar that an individual's character is actually an amalgamation of his/her qualities which makes him unique and helps him stand apart from the rest. The personality development is not



only about looking good and wearing expensive brands. It is also about developing one's inner self and being a good human being. Overall, 183 participants participated in this seminar.



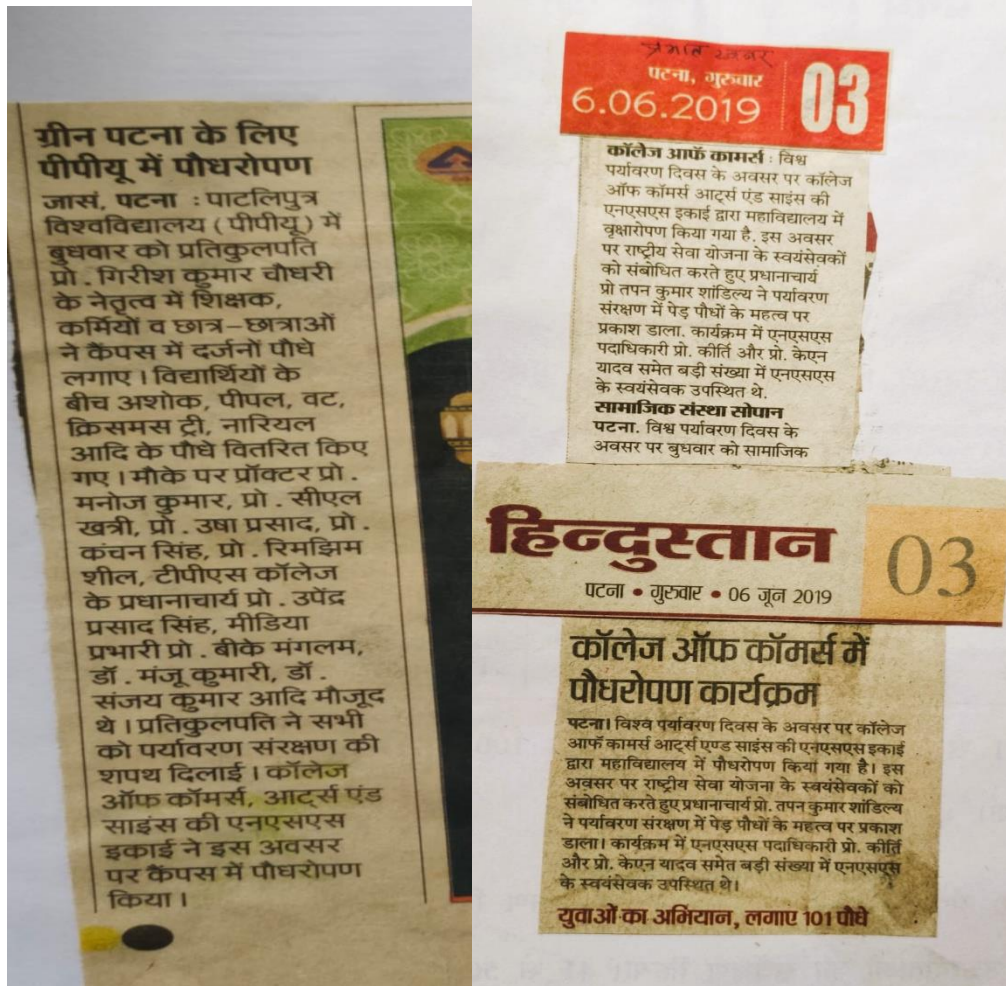
World Environment Day

05.06.2019

A program of plantation was organised in college campus. World Environment Day is led by the United Nations Environment Programme (UNEP) and held annually on 5 June, it is the largest global platform for environmental public outreach and is celebrated by millions of



people across the world to increase public awareness of environmental challenges and encourage action. The NSS volunteers took an oath to keep our environment clean.



National Seminar on Ancient Indian Education and its Impact on Asian Culture: Retrospect and Prospect

Date: 10.06.2019 to 11.06.2019

A National Seminar on “Ancient Indian Education and its Impact on Asian Culture: Retrospect and Prospect” was jointly organized by the Department of History, College of Commerce, Arts & Science, Patna & Maulana Abul Kalam Azad Institute for Asian Studies, Kolkata in collaboration with Itihas Sankalan Samiti, Bihar on dt. 10 & 11 June, 2019. There were about 150 participants which included eminent academicians from different parts of India, young



scholars and students who actively participated in academic deliberations. The vibrant presentation made by different scholars on the topic of the Seminar made it a successful event. The National Seminar which was held for two days, began with an inaugural session followed by 06 (Six) technical sessions in which 37 (Thirty-Seven) papers were presented and a valedictory function in the Vanijya Sabhagar of the college. The participants came from abroad & different states of the country and presented their papers.

The inaugural function started with the lighting of lamp followed by Mangalacharan. The Inaugural session of seminar was presided over by the Hon'ble Vice-Chancellor of Patliputra University Prof. Dr. Gulab Chand Ram Jaiswal. The theme of the seminar was introduced by Prof. Sujit Ghosh, Chairman, MAKAIAS. The keynote address was delivered by Prof. K. T. S. Sarao, Head, Dept. of Buddhist Studies, University of Delhi. The Principal Prof. Tapan Kumar Shandilya in his welcome address highlighted a short history of college's academic growth and stressed the importance of seminar and symposia. The Chief Guest Prof. B. Labh, Vice Chancellor, Nava Nalanda Mahavihara, Nalanda recalled the glorious history of education of India and even gasped at its splendid past though with a touch of remorse. He however believed that the space to progress is not blocked. Prof. K. T. S. Sarao while tracing the genesis of Buddhism recognized its divided periods of origin and in the same vein admitted that Buddhism is fundamentally an idea and succour of the oppressed. The Vice Chancellor of the university in his piercing speech held Buddhism as a religion of humanity and recognized its austerity as its driving impulse. Dr. Bal Mukund Pandey, Organising Secretary, Akhil Bhartiya Itihas Sankalan Yojna, New Delhi kept nodding his head in approbation of what was said. A large number of teachers, research scholars and students were present. There were representations from all over country and about two hundred delegates participated in the Seminar.

The valedictory session of the seminar was engrossing and enlightening as two key speeches were delivered by two eminent historians, Prof. Rajiva Sinha, Head, Dept. of History, T. M. Bhagalpur University, Bhagalpur and Prof. Jaidev Mishra, A.I. H & Arch., Patna University, Patna respectively. The two historians stressed the Ancient Indian Education and its Impact on Asian Culture while tracing its genesis. Prof Rajiva Sinha opined that Buddhism flourished more outside India rather than to stay confined to this country while Prof. Jaidev Mishra saw Buddhism as an alternative route to redemption from the chaos of the world around.



He billed Buddhism as less of a religion and more of a philosophy. The Chairperson of all the sessions summarized focal points of their sessions in brief. The Chief Guest of the session Pro-Vice Chancellor of Nalanda Open University, Patna, Prof. Kriteshwar Prasad basically agreed with Prof. Jaidev Mishra's point of view while questioning the exodus of Buddhism from India. The Principal of the College Prof. T. K. Shandilya chaired the final session and applauded the efforts of the History department for such great initiative and hoped that the tradition of academic discourse will continue much the same way even in future. The organizing secretary Prof. Rajeev Ranjan presented the secretary report while Prof. Rajesh Shukla, Professor & Head, Dept. of History College of Commerce, Arts & Science, Patna proposed the vote of thanks. Total 191 participants were participated in this seminar.



YOUTH EXCHANGE PROGRAM TO CHINA

29.06.2019

N.S.S volunteer Neeraj was selected for youth exchange program by the Ministry of youth affairs Government of India . He acitvely participated in all over activities youth exchange program at china.



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Seminar on Importance of Legal Knowledge

Date: 9.07.2019

One day seminar was organized by College of Commerce, Arts & Science in association with Justice for Society on the topic “Importance of Legal Knowledge” dt. 09.07.2019. Hon’ble Justice Rajendra Prasad (Retd. Justice, High Court, Patna) was the resource person. He said that legal knowledge empowers individuals to understand their rights and responsibilities within society. It allows people to make informed decisions and take appropriate actions to protect their interests. He concluded that legal awareness helps to promote consciousness of legal culture, participation in the formation of laws and the rule of law. 186 participants were participated in the seminar.



Health check-up camp and Tree Plantation

Date: 24.07.2019



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A free health check-up camp was organized at the college on dt. 24.07.2019. Prof. Bindu Singh, Head, Department of Zoology, COCAS, Patna took initiative for this novel cause. Sri. Rajesh Kumar, **Principal Chief Signal & Telecommunication Engineer**, Hajipur also took part in the initiative. The check-up camp was successfully organized with the collaborative efforts of the team of qualified doctor of Medanta Hospital, Patna. Prof. T.K. Shandilya, Principal, College of Commerce, Arts & Science, Patna inaugurated the event. Prof. Sunita Lal, Prof. Rajesh Shukla and many other faculty members with numerous students of the college were benefitted by this camp. Tree plantation was also done at the college premises. The plantation program was organized by department of MLT.





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Workshop on Community Policing

Date: 29.07.2019

A workshop on Community Policing was organised at the college in collaboration with RPF. DGP, Bihar Shri Gupteshwar Pandey inaugurated the function as Chief Guest. He said that community policing believes that Police must build lasting relationships that encompass all elements of the community and centre around the fundamental issues of public safety and quality of life. Overall, 63 participants were actively participated in this workshop.



IQAC Seminar on Globalization and Indian Economy

Date: 30.07.2019

A one- day seminar on the topic ‘Globalization and Indian Economy’ was organized by IQAC of the College dt. 30.07.2019. The chief Speaker was Dr. Ravindra Brahme, Professor & Head, School of Studies in Economics, Pt. Ravishankar Shukla University, Raipur. He explained that



globalization is the growing interconnectedness of countries and economies, facilitated by advancements in technology, transportation, and communication.

He narrated that globalization, facilitated by technology, transportation, and communication, has significantly impacted the Indian economy, attracting foreign investment, expanding market access, fostering technological advancements, creating job opportunities, and improving infrastructure. It has also led to increased competition, reduced unemployment rates, and increased foreign exchange reserves, while fostering a skilled workforce and generating revenue. In the presidential remarks Prof. T.K. Shandilya, Principal COCAS, said that globalization has enhanced competitiveness, encouraging Indian businesses to improve their products, services, and operational efficiency. Total 59 participants participated in this event.



Induction Meet

Date: 03.08.2019

The induction meet was organized by the college for the newly admitted students to give an orientation for the courses they admitted. At the start of the induction, the incumbents learned about the institutional policies, processes, practices, culture and values.



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Independence Day 2019

Date: 15.08.2019

The Independence Day was celebrated at the college. Further, the knot of thread was also tied to the trees at the college campus (Rakshabandhan) as a symbol of oneness, brotherhood and peace and to respect our mother nature and protect the environment.



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Seminar on Sarthak Jeevan

Date: 26.08.2019

A seminar was organized by IQAC on Sarthak Jeevan. The speaker was Shri. D.N. Gautam, Former D.G.P. The session was chaired by Prof. Tapan Kumar Shandilya, Principal, COCAS. The resource person said that a meaningful life is a construct having to do with the purpose, significance, fulfilment, and satisfaction of life. Living a meaningful life requires challenging oneself, slowing down, deep thinking, and deliberate actions. Giving time or resources to others can also provide meaning. Total 156 participants participated in the seminar.





Awareness Workshop on Cervical Cancer

Date: 27.08.2019

The IQAC and Department of Zoology, COCAS, Patna in collaboration with Rotary Club of Chanakya organized an awareness workshop on Cervical Cancer dt. 27.08.2019. The resource person Dr. Shrawan, Director, New Born Care Centre, Rajendra Nagar, Patna discussed that cervical cancer is a growth of cells that starts in the cervix which is the lower part of the uterus that connects to the vagina. Various strains of the human papillomavirus, also called HPV, play a role in causing most cervical cancers. It was suggested that people can reduce their risk of developing cervical cancer by having screening tests and receiving a vaccine that protects against HPV infection. When cervical cancer happens, it's often first treated with surgery to remove the cancer. Other treatments may include medicines to kill the cancer cells. Options might include chemotherapy and targeted therapy medicines. Radiation therapy with powerful energy beams also may be used. Sometimes treatment combines radiation with low-dose chemotherapy. Overall, 70 participants actively participated in this workshop.



Fit India Awareness Programme

Date: 29.08.2019

The college organized the Fit India Movement which is a campaign launched by Indian Prime Minister Narendra Modi to encourage Indians to become more active and healthier. The campaign focused on promoting fitness and healthy living habits and encouraged people to get involved. Prof. T.K. Shandilya (Principal), Prof. Munawwar Fazal, Prof. Sunita Lal, Prof. Kirti, Dr. Shambhu Sharan and many other faculty members also took part in this initiative. Other University officials were also joined this movement.

The program was organised in auditorium of the college. Students, faculties and staffs saw live telecast of fit india campaign by honourable prime minister. At this occasion, the principal of college motivated students to be fit mentally and physically by practicing yoga, sports and other physical activities. Total 56 participants participated in this awareness programme.



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Workshop and rally on cancer and organ donation
31.08.2019

A Workshop on cancer and organ donation was organized in the auditorium by our college NSS unit to make people aware about organ donation. The NSS wing of the college took out a rally through the college campus till Pataliputra University.



Workshop on Student Mental Health



Date: 13.09.2019

A sensitization workshop was organized by the Department of Psychology and Department of Counselling and Rehabilitation on dt. 13.09.2019. The resource person was Ms. Nidhi Singh, Assistant Professor, Magadh Mahila College, Patna University was a qualified Clinical Psychologist. Guest of honour was Prof. Vijaya Lakshmi, Dean, Social Sciences, Patliputra University, Patna. The resource person said that mental health includes our emotional, psychological, and social well-being. It affects how we think, feel, and act. It also helps determine how we handle stress, relate to others, and make choices. She further suggested way to minimize the stress and other mental health issues. 58 participants participated in this workshop.





Workshop on Young and Vibrant Minds

Date: 15.09.2019

The college organized a workshop on dt 15.09.2019 for imparting education to young and vibrant minds from Underprivileged Community. The principal Prof. T.K. Shandilya took the initiative for truly living and propagating the Philosophy for the Education to all.

He deliberated that education promotes gender equality and helps to create a society that empowers the whole nation. Prof. Santosh Kumar, Dept. of Physics, supported his views and said education reduces child labour and can eradicate social evils like child marriage and dowry. Overall, 64 students participated and benefited in the workshop.



Seminar on Water Harvesting

Date: 16/09/2019

A Seminar was organized by IQAC and Department of Physics on the topic “Water Harvesting” on 16.09.2019. The seminar was focused on scarcity of drinking water as a major concern. The Resource person was Eminent Scientist Dr. Ashutosh Upadhyay, Scientist ICAR. He discussed about Water Harvesting, and said that water scarcity limits access to safe water for drinking and for practising basic hygiene at home, in schools and in health-care facilities. When water is scarce, sewage systems can fail and the threat of contracting many diseases. another Scientist Dr. A. Rahman gave presentation on Solar Energy and young Scientist from Central Ground Water Authority (CGWA) Sri Anees Kumar gave his presentation on Rules and legislation framed by Govt. of India on drawing water from earth for industries and others. Prof. Tapan Kumar Shandilya, Principal, COCAS was the Chief Guest. A large gathering of faculties, students and member of associations participated. 186 participants participated in this seminar.



Seminar on Janta ko Nyay Janta ki Bhasha Hindi mein

Date: 18.09.2019

A seminar was organized by IQAC and College of Commerce, Arts & Science, Patna on dt. 18.09.2019 on the topic “Janta ko Nyay Janta ki Bhasha Hindi mein”. The Chief Guest, Honourable Justice Sri. Arvind Srivastava, Patna High Court said the language used in the judicial process plays a big role in ensuring justice. On this occasion, he said that now we have



to consider that laws should be made in two ways. One draft of the laws should be in the language used by the courts and the other in the language which the common man can understand. He further stressed that this work must be done, because only then the common people will be able to understand the laws properly.

The distinguished guest Honourable Justice Sri. Anil Kumar Upadhyay, Patna High Court supported his views and elaborated that Article 348(1) of the Constitution of India provides that all proceedings in the Supreme Court and every High Court shall, unless Parliament by law otherwise provides, be held in the English language. Further, he shared that the use of Hindi has been authorized in proceedings as well as in judgments, or orders in the High Courts of the states of Madhya Pradesh, Uttar Pradesh and Bihar. The Government of India had received proposals from the Governments of Tamil Nadu, Gujarat and Chhattisgarh to allow the use of Tamil, Gujarati and Hindi in the proceedings of the Madras High Court, Gujarat High Court and Chhattisgarh High Court respectively. 174 participants participated in the seminar.





Seminar on Adhyatmik Rashtravaad (Spiritual Nationalism)

Date: 21.09.2019

A seminar was organized by College of Commerce, Arts & Science, Patna in association with Bihar Chamber of Commerce and Industries dt. 21.09.2019 on Adhyatmik Rashtravaad. The resource person was Acharya Shri Arun Divakar Nath Vajpayee. He discussed that spiritual nationalism (Adhyatmik Rashtravaad), inspired by the basic values of Indian culture, was a call to not be limited to theoretical rhetoric in the field of thought but to enter into the field of action. The G.C.R. Jaisawal, Vice Chancellor, Patliputra University, Patna said that Adhyatmik Rashtravaads' seed mantra was Vande Mataram and its aim was the all-embracing progress of the motherland. Beyond the popular form of nationalism, it is an emotional praise for the motherland. Prof. T.K. Shandilya (Principal, COCAS) said that this school of thought is based



on timeless values and it is a remarkable contribution of modern India in the field of thinking.
207 participants participated in this seminar.





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Workshop on Electronic Banking Awareness cum Training Programme

Date: 24.09.2019

College of Commerce, Arts & Science, Patna organized a workshop on Electronic Banking Awareness and Training on dt 24.09.2019. Internet banking, is also known as online banking or e-banking. It has revolutionized the way people conduct financial transactions. With the advancement of technology and the widespread use of the internet, online banking has become a convenient and secure way for people to manage their finances. The resource person Mr. Dubey from RBI, Regional Branch, Patna demonstrated that by accessing the bank accounts through a web browser or mobile application, people can perform a range of banking activities, including transferring funds, paying bills, checking account balances, and viewing transaction history. He further pointed out that internet banking has become an increasingly popular choice for individuals and businesses in recent times so the awareness of internet banking is crucial for the people to take advantage of the benefits it offers. However, he added that people also need to be aware of the risks and security measures necessary to protect their financial information. Overall, 67 participants participated in this workshop.

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(A Constituent Unit of Patliputra University, Patna)
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OFFICE OF THE PRINCIPAL

Ref: _____ Date: 20/09/2019

NOTICE

College of Commerce, Arts & Science, Patna in collaboration with the Reserve Bank of India is organizing a one day 'Electronic Banking awareness cum Training Programme' at the College.

All students, teachers and non-teaching staff of the college are requested to attend this programme.

Date :- 24.09.2019
Time :- 10:45 A.M. onwards
Venue :- Vanijya Sabhagar

Handwritten: 20/09/2019
Prof.(Dr.) Tapan Kumar Shandilya
Principal
College of Commerce, Arts & Science
Patna- 800020
Handwritten: 24/09/2019



DISTRUBUTION OF RELIEF MATERIALS

04.10.2019

Clothes , food and other essential items were distributed among flood affected person in kankarbagh, patna.



Cleanliness and Fit India movement

20.10.2019



NSS volunteer conducted cleanliness campaign in the college campus . An awareness rally for fitness was also organised



ange
between two countries for last few days. On 09.11.2019 this team visited College of Commerce, Arts & Science, Patna and interacted with the students and teachers of college. It was a great step for strengthening the bilateral relation between two countries.



National Seminar on Local History and Historiography

Date: 17.11.2019 to 18.11.2019

Inaugural Address – Prof. Girish Kumar Chaudhary, Pro Vice Chancellor, PPU Patna

A National Seminar on “Local History and Historiography” was organized by the Department of History, College of Commerce, Arts & Science, Patna in collaboration with Itihas Sankalan



Samiti, Bihar. There were about 220 participants which included eminent academicians from different parts of India, young scholars and students who actively participated in academic deliberations. The vibrant presentation made by different scholars on the topic of the Seminar made it a successful event. The National Seminar which was held for two days, began with an inaugural session. After the inaugural function one plenary session was conducted. In this session four important lectures on the theme were delivered. Academic session followed by 06 (Six) technical sessions in which 37 (Thirty-Seven) papers were presented and a valedictory function in the Vanijya Sabhagar of the college. The participants came from abroad & different states of the country and presented their papers.

The Chief Guest Prof. B. Labh, Vice Chancellor, Nava Nalanda Mahavihara, Nalanda recalled the glorious history of Bihar and gasped at its splendid past though with a touch of remorse. He however believed that the space to progress is not blocked. The keynote speaker Prof. Anand Shankar Singh, Principal, Ishwar Sharan Degree College, Allahabad (U.P.), while tracing the roots of historiography in the oral tradition. The Pro Vice Chancellor of the Patliputra University in his piercing speech compared the historiography of India with other developed countries. Dr. Bal Mukund Pandey, Speaker and Organising Secretary, Akhil Bhartiya Itihas Sankalan Yojna, New Delhi kept nodding his head in approbation of what was said. He said that History is everything and everything has a history. History that misleads generations is more dangerous than a weapon of mass destruction. A large number of teachers, research scholars and students were present. There were representations from all over country and about two hundred delegates participated in the Seminar. Vote of thanks was proposed by the coordinator of seminar Prof Rajesh Shukla, Head, Dept. of History, College of Commerce, Arts & Science, Patna. The valedictory session of the seminar was engrossing and enlightening as two key speeches were delivered by two eminent historians, Prof. Rajiva Sinha, Head, Dept. of History, T. M. Bhagalpur University, Bhagalpur. He stressed on the importance of Local History as the main source while tracing its genesis. Prof Rajiva Sinha opined that historiography is false without local history. He also said that Indian history should be viewed from the Bhartiya perspective while The Chairperson of all the sessions summarized focal points of their sessions in brief. The Chief Guest of the session Prof. Sanjay Paswan said that it is the right time to discuss local tradition of our nation which is replete with several examples of diversity and have always provided strong threads of unity to us. The Principal of the College



Prof. T. K. Shandilya chaired the final session and applauded the efforts of the History department for such great initiative and hoped that the tradition of academic discourse will continue much the same way even in future. The Organising Secretary Prof. Rajeev Ranjan presented the secretary report and proposed the vote of thanks.



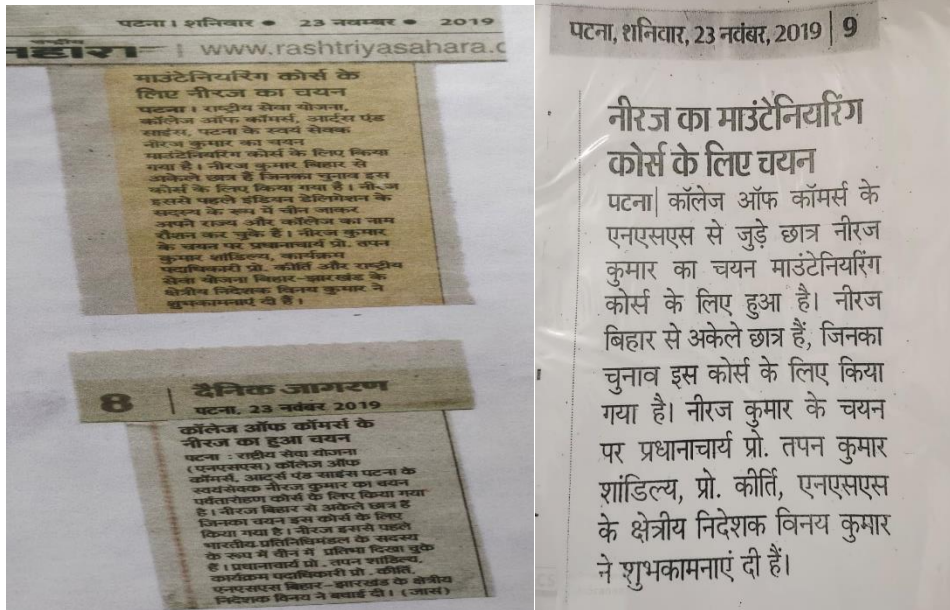
Adventure camp

22.11.2019

N.S.S Volunteer Neeraj kumar was selected for adventure camp by Ministry Of Youth Affairs & Sports which was organize by Himalayan institute of mountaineering ,Darjeeling ,W.B .

He actively participated and completed the adventure camp.





One- Day Workshop on Intellectual Property Rights in Perspective of Higher Education

Date: 22.11.2019

College organized one- day workshop on Intellectual Property Rights in Perspective of Higher Education on 22.11.2019. The resource person Mrs. Sugandha Sinha, Chanakya National Law University, Patna discussed that intellectual property rights (IPRs) are the backbone of innovation and new ideas. It encourages prospective researchers and protect their interests. These rights give innovators an exclusive right over their creations for a certain period. The session was chaired by Prof. T. K. Shandilya, Principal, COCAS, Patna. 67 participants participated in this workshop.



Seminar on Quality: Role and relevance in the life of a nation

Date: 23.12.2019

K.K. Sinha Memorial Seminar was organized by IQAC and Department of Economics in association with KK Sinha Uma Sinha Foundation (KKSUSF) on dt. 23.12.2019 on the topic “Quality-Role and relevance in the life of a nation”. Director general of Bureau of Indian



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Standards Pramod Kumar Tiwari said that a nation's character, respectability and credibility depend on the standards of quality it maintains. In his keynote speech he said that culture of tolerance developed in country in 6th century B.C. Tiwari pointed that the society needs amendments. The struggle of human beings for a good living started way back when fire was invented. The prayers dedicated to Indra (God of rains), Varun (God of wind) and Agni (God of fire) showcase the seeking of materialistic pleasures by rishis and the accreditation given to materialistic benefits as depicted by those books reveal the consciousness of humans towards quality even during those times. He further added that the 6th century BC period was of extreme importance as the culture of tolerance and resistance in the country was developed during the phase. The evening started with welcome address by KKSUSF secretary Pravir Krishna. After the felicitation of guests and the ceremonial lighting of the lamp, Ashok Priyadarshi of the Jan Mukti Sangharsh Morcha spoke about his association with K. K. Sinha and thanked him for contributing to Bihar's growth story. Other dignitaries were also invited to speak on relevant social issues and share their association with professor (late) K K Sinha. The event was organized by the foundation to carry forward Sinha's message and teachings. Prof. Shandilya presented a vote of thanks and KKSUSF president Dr Uma Sinha thanked the audience and dignitaries for making the event successful. 209 participants participated in this seminar.





2020

A One Day Symposium on contributions of Savitri bai Phule in Education and Women Empowerment

Date: 09-01-2020

One-day seminar on "Contribution of Savitri Bai Phule in Education and Women Empowerment," was organized to commemorate the 169th birth anniversary of Savitri bai Phule by Dr. Manju Kumari, Head of the Department of Maithili, held on January 9, 2020, at Vanijya Sabhagar, College of Commerce Arts and Science. The Distinguished Chairpersons of the event were Prof. T.K. Shandilya, the Principal of the College of Commerce; Prof. Bharti S. Kumar from Patna University; Prof. Usha Prasad, a Member of the Bihar State University Service



Commission; Dr. Tanuja from C.C.D.C. Patliputra University; and Shri Asrafi Kumar Sada, a Senate Member of B. N. Mandal University. The stage coordination was flawlessly handled by Prof Rajiv Ranjan, Dr. Santosh Kumar, Dr. G.P. Gadkar, and Smt. Anita Sagar. The day commenced with a floral tribute of Savitri Bai Phule. This was followed by warm welcome extended by Dr. Santosh Kumar and Dr. G.P. Gadkar, setting a positive tone for the engaging discussions. The highlight of the day was the enlightening presentations by the keynote speakers, Prof Bharti S. Kumar and Shri Asrafi Kumar Sada, who eloquently highlighted the profound impact of Savitri Bai Phule's work on education and women empowerment. The symposium saw active participation from Prof Usha Prasad, Dr. Tanuja, and Prof. T.K. Shandilya, who shared their perspectives and expertise. Prof Rajiv Ranjan delivered the final vote of thanks, expressing gratitude to the participants, organizers, and distinguished guests for making the symposium a resounding success. With a total of 200 participants actively engaging in discussions and presentations, the symposium provided a platform for intellectual exchange and reflection on the significant contributions of Savitri Bai Phule in shaping education and empowering women.





NATIONAL YOUTH DAY

12.01.2020

On National Youth Day, N.S.S volunteer in the leadership of program officer distributed warm clothes to poor people of Bahadurpur slum area.





Clothes distribution program

12.01.2020

Volunteers went to the slum area adopted by NSS and distributed warm clothes among the people and asked them to keep their surrounding clean.





Human Chain

Date: 19-01-2020

Students of College of Commerce Arts and Science Patna Participated in Human Chain to spread Awareness for preservation of the earth under the campaign of Jal-Jeevan-Hariyali by Government of Bihar to protect environment and human life. Messages regarding importance of Girl Education & evil of Child marriage are also conveyed.





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Jal Jeevan Hariyali Diwas

Date: 03/03/2020



A seminar cum workshop was organised in our college on the eve of International Women's' day in collaboration with C3 (centre for catalysing change). The entire discussion was centered towards "Women in Bihar": Work, Barriers and Enablers. The program was truly worth in today's perspective. 52 participants participated in this workshop.



माहौल बिना महिलाओं का पूर्ण विकास बाधित



महिलाओं को सम्मानित करते प्राचार्य डॉ. तपन कुमार शांडिल्य (दाएं)। • जागरण

जासं, पटना : कॉलेज ऑफ कॉमर्स, आर्ट्स एंड साइंस पटना में शुक्रवार को 'बिहार में महिला : कार्य, बाधाएं और समर्थक' विषय पर कार्यशाला का आयोजन किया गया। प्रधानाचार्य प्रो. तपन कुमार शांडिल्य ने कहा कि आजादी के बाद प्रारंभिक पांच वार्षिक योजनाओं में महिलाओं के सशक्तीकरण के लिए कोई ठोस योजना का अभाव दिखा।

सेंटर फॉर कैटालाइजिंग चेंज की अनामिका प्रियदर्शनी, गुंजन बिहारी और सोनाक्षी चौधरी ने पावर प्वाइंट

प्रेजेंटेशन से विभिन्न कार्यक्षेत्र में महिलाओं की भागीदारी की जानकारी दी। उन्होंने बताया कि सकारात्मक माहौल के अभाव में महिलाओं का पूर्ण विकास बाधित है। आयोजन अर्थशास्त्र विभाग और 'सेंटर फॉर कैटालाइजिंग चेंज' ने संयुक्त रूप से किया था। संचालन प्रो. मृदुला कुमारी व धन्यवाद ज्ञापन प्रो. रश्मि अखौरी ने किया। प्रो. उमेश प्रसाद, प्रो. संजय पांडेय, प्रो. आशुतोष कुमार सिन्हा, प्रो. खालिद अहमद, प्रो. संतोष कुमार, डॉ. बैकुंठ राय आदि कई मौजूद थे।



Nukkar-Natak

Date: 13-03-2020

Our college students performed Nukkar-Natak to spread the message of environmental consciousness in our annual outreach program “ STRIDE “. In the second part of this Nukkar Natak students highlighted precautionary measures for prevention of Corona Virus (Covid 19). Overall the program invited much accolades. It was a grand success in the sense that the innovative ideas of students were effectively expressed.





STRIDE : annual outreach program of college

Date: 13-03-2020



कॉलेज ऑफ कॉमर्स आर्ट्स एंड साइंस पटना में दो दिवसीय स्ट्राइड कार्यक्रम का हुआ आगाज, दिखा उल्साह

मॉडलों में दिखाई भविष्य की झलक

हिन्दुस्तान लाइव रिपोर्ट

पटना | वरीय संवाददाता
कॉलेज ऑफ कॉमर्स आर्ट्स एंड साइंस पटना में शुक्रवार को दो दिवसीय स्ट्राइड कार्यक्रम शुरू हुआ। उद्घाटन करते हुए प्रधानाचार्य प्रो. तपन कुमार शाहिल्व ने कहा कि स्ट्राइड कालेज में आयोजित होने वाला वार्षिक कार्यक्रम है। इसका मुख्य उद्देश्य विद्यार्थियों द्वारा वर्गों में और प्रयोगशालाओं में अजित ज्ञान को विभिन्न माडलों, पोस्टरों तथा नाटक के माध्यम से आम जनो के बीच प्रदर्शित करना है।

उन्होंने कहा कि इस तरह के कार्यक्रमों में विद्यार्थियों को अपनी प्रतिभाओं की पहचान का अवसर मिलता है। साथ ही स्ट्राइड के माध्यम से छात्रों द्वारा अर्थव्यवस्था व युवावसाहक विकास का प्रदर्शन उनकी योग्यता को प्रमाणित करता है। दो दिवसीय स्ट्राइड में 16 परंपरागत व व्यावसायिक पाठ्यक्रमों के छात्र-छात्राओं ने अपने मॉडल प्रस्तुत किए। विद्यार्थियों ने नुककड़ नाटक के माध्यम से कोरोना से बचने का संदेश दिया गया। छात्र-छात्राओं को अवगत कराया गया कि कैसे आप इस बीमारी से खुद को बचा सकते हैं। नुककड़ नाटक के माध्यम से बताया गया कि छात्र-छात्राओं ने हाथों को सफाई पर विशेष ध्यान देने, सदी, खानी या छीक आने पर रुमाल या कोहल को मीडकर छीकने के साथ संक्रमित व्यक्ति से दूरी से कम एक मीटर की दूरी बनाने, संक्रमित व्यक्ति से दूरी में मिलाने की सलाह दी। सेनेटाइजर का उपयोग करना चाहिए। इसके अलावा लोगों को ज्यादा से जागरूकता करने की अपील की।

मॉडल लैब टेक्नोलॉजी विभाग के छात्र-छात्राओं ने रक्त जांच सिमिटर साकारण को के स्वास्थ्य को जांच की। बायोटेक्नोलॉजी विभाग के छात्रों ने अपने मॉडल के माध्यम से पर्यावरण प्रदूषण की समस्या को दर्शाया। अर्थशास्त्र विभाग के छात्रों ने सतत विकास और पर्यावरण को दर्शाना माडल प्रस्तुत किया। वहीं, भौतिकी विभाग के छात्रों ने वैज्ञानिक जीवन में भौतिकी के उपयोग को दर्शाते हुए मॉडल प्रस्तुत किया। स्ट्राइड में



कॉलेज ऑफ कॉमर्स आर्ट्स एंड साइंस पटना में शुक्रवार से शुरू हुए दो दिवसीय स्ट्राइड कार्यक्रम में मॉडल प्रस्तुत करती छात्राएं। • हिन्दुस्तान

16 परंपरागत और व्यावसायिक कोर्स वाले मॉडल

04 ली से अधिक छात्र-छात्राओं ने लिया भाग



कॉलेज ऑफ कॉमर्स पटना में शुक्रवार को स्वास्थ्य जांच करती छात्राएं। • हिन्दुस्तान

मुंबई के डब्लूवाले की कहानी पर भी मॉडल
अर्थशास्त्र विभाग के छात्रों द्वारा पोषणीय विकास के लिए हरित अर्थव्यवस्था के महत्व पर कई पोस्टर प्रस्तुत किए। माडलों में बताया कि पीड़, जल, जमल तक वायु की सुरक्षा से ही जीवन स्वस्थ रह सकता है। एमबीए के छात्रों ने भ्रम शक्ति प्रबंधन तथा मार्किंग रिजल को प्रदर्शित करने के लिए मुंबई शहर के जवाबदारी की कहानी को अवगत आकर्षक तरीके से प्रस्तुत किया। बताया कि मुंबई शहर में वास्तु करने वाले लाखों लोगों को घर के खाने के इन्वे रोज दिलेवरी करना उनके भ्रम शक्ति प्रबंधन को दर्शाता है।

ये रहे खास मॉडल

इंडस्ट्रीयल इफेक्ट ऑन इन्वायरमेंट
छात्रों की ओर से बनाए गए मॉडल में कई महत्वपूर्ण जानकारी दी गई। इसमें पर्यावरण को सुरक्षित रखने के लिए कारखानों के बारे में बताया गया कि कैसे वे हमारे जीवन, पशु-पक्षी और पेड़ों को हानि पहुंचा रहे हैं। इससे कई बीमारियां फैल रही हैं। हमसे पहले नियंत्रण नहीं किया गया तो आगे बढ़कर काफी परेशानी होगी।

डीएनए वलॉनिंग एंड एलिकेशन इंसुलिन
इस मॉडल में बताया गया है कि रिफोर्मेड डीएनए टेक्नोलॉजी और डीएनए सक्सीनो डी प्रक्रिया है। इसमें डिजाइड जीन और डीएनए और उसके कई समानरूपी जीन के से बनाए जाते हैं, इस पर जानकारी उपलब्ध करवाई गई। छात्राओं ने भविष्य की पीढ़ी से सभी को स्वस्थ कराया।

रेन वाटर हार्वेस्टिंग
छात्रों की ओर से एक प्रोजेक्ट ऐसा बनाया गया था, जिसमें बरिश के पानी के संग्रहण और उसके बचाव की जानकारी दी गई थी। कैसे बारिश के पानी को उपयोग में लाया जा सकता है। इसके बारे में विस्तार से जानकारी दी गई। बड़े-बड़े भवन बनाने के पहले नीचे रेन वाटर के लिए कैसे जगह बनानी चाहिए, ताकि सूखे के समय में पानी का सही इस्तेमाल किया जा सके।

मनुसा कुमारी, प्रो. के. वी. पद्मेदेव, प्रो. अनिल कुमार टाकुर, प्रो. संतोष, प्रो. कुमार चन्द्रदीप, और प्रो. एके नाग समेत शिक्षक, शिक्षक सहायक और छात्र-छात्राएं उपस्थित रहे।

Living Under the Shadow of Covid 19: Webinar conducted by Department of English

Date : 09-06-2020

Department of English of College of Commerce, Arts & Science organised a webinar entitled “Living Under the Shadow of Covid 19” on 09-06-2020. The Webinar started with the speech of Principal who declared Covid 19 as the biggest disaster of the century and urged to take precautionary measures to deal with this pandemic. Prof.(Dr.) Kumar Chandradeep, Prof. (Dr.) Saloni Kumar, Dr. Afroz Ashrafi and many scholars also expressed their opinions. Over all the webinar proved to be quite healing and refreshing in this hour of crisis. 168 participants participated in this webinar.



कोविड-19 सदी की सबसे बड़ी त्रासदी : प्रो. शांडिल्य

पटना। कालेज ऑफ कॉमर्स आर्ट्स एंड साइंस पटना के अंग्रेजी विभाग द्वारा सोमवार को श्लोविंग अंडर द शैडो ऑफ कोविड 19 विषय पर वेबिनार आयोजित किया गया, जिसकी अध्यक्षता प्रिंसिपल प्रोफेसर तपन कुमार शांडिल्य ने की। अपने अध्यक्षीय संबोधन में प्रो. शांडिल्य ने इस महामारी को सदी की सबसे बड़ी त्रासदी बताते हुए कहा कि हमें कोरोना के साथ जीने की आदत डालनी होगी और इस महामारी का पूरी सतर्कता के साथ मुकाबला करना होगा। वेबिनार

में अपने विचार व्यक्त करते हुए प्रोफेसर कुमार चंद्रदीप ने कहा कि इस वैश्विक महामारी के आलोक में पुनर्निर्माण की आवश्यकता है। इसे से निपटने के लिए राजनीति, समाज और नैतिक स्तर पर मुकाबला करने की इच्छा शक्ति होनी चाहिए। डॉ. राजेन्द्र सिंह ने अपने व्याख्यान में कोविड 19 को सामाजिक न्याय से जोड़ते हुए झुआ झूत को पारिभाषित भी किया और सामाजिक दूरी जैसे शब्द को एक सामाजिक संदर्भ भी दिया। डॉ. शिव कुमार यादव ने कोविड-19 की

विवेचना करते हुए इसे एक ऐतिहासिक परिवेश में परखा और साहित्य महामारी के आपसी ताल मेल की विस्तार से विवेचना की।

डॉ. सैय्यद अफरोज अशरफो ने इसी दृष्टिकोण को आगे बढ़ाते हुए महामारी काल खंड में साहित्य को मरहम के रूप में प्रस्तुत करने की सलाह दी। वेबिनार की संयोजक अंग्रेजी की विभागाध्यक्ष प्रोफेसर सलोनी कुमार ने कोविड 19 के दुष्प्रभावों को साहित्य के माध्यम से उजागर करने और इस से निपटने के

सूझाव खोजने तथा समाज में इस बीमारी के प्रति फैली भ्रांतियों को दूर करने की सलाह दी। धन्यवाद ज्ञापन डॉ. अदिति ने किया। यह वेबिनार अंग्रेजी विभाग की उपलब्धियों में से एक है। वेबिनार से अन्य विभागों के प्रोफेसर डॉ. रश्मि अख्तरी, डॉ. पचिनी प्रसाद, डॉ. कौर्ति, डॉ. संतोष कुमार, डॉ. पदमदेव भी शामिल हुए। इस वेबिनार की अतिथि लगभग दो घंटे रही जिसमें छात्रों ने भी भाग लिया और अपने प्रश्नों के द्वारा अपनी जागरूकता भी दर्ज की।

मलि दास शह: की की आंठ वे 2 विव नारा सडू लग उन्हे राज

कोरोना के साथ जीने की आदत डाल लें

लाइफ रिपोर्टर@पटना

कॉलेज ऑफ कॉमर्स, आर्ट्स एंड साइंस पटना के अंग्रेजी विभाग द्वारा सोमवार को "लीविंग अंडर द शैडो ऑफ कोविड 19" विषय पर वेबिनार आयोजित किया गया. इसकी अध्यक्षता प्रिंसिपल प्रो तपन कुमार शांडिल्य ने की. अपने अध्यक्षीय संबोधन में प्रो. शांडिल्य ने इस महामारी को सदी की सबसे बड़ी त्रासदी बताते हुए कहा कि हमें कोरोना के साथ जीने की आदत डालनी होगी और इस महामारी का पूरी सतर्कता के साथ मुकाबला करना होगा. वेबिनार में अपने विचार व्यक्त करते हुए प्रोफेसर कुमार चंद्रदीप ने कहा कि इस वैश्विक महामारी के आलोक में पुनर्निर्माण की आवश्यकता है. इसे से निपटने के लिए राजनीति, समाज और नैतिक स्तर पर मुकाबला करना होगा.

छात्राओं ने अपने विचारों को रखा

पटना. गंगा देवी महिला कॉलेज में अंग्रेजी विभाग की ओर से ऑनलाइन वेबिनार का आयोजन किया गया. वेबिनार का विषय कोविड 19 पैडमिक का प्रभाव था. इसमें कुल 58 टीचर्स और छात्राओं ने भाग लिया. कॉलेज की प्राचार्या प्रो मणिबाला ने छात्राओं को कोविड 19 और स्वास्थ्य पर होने वाले इसके प्रभाव के बारे में बताया. उन्होंने छात्राओं से अग्रह किया वे सभी प्रॉपर डायट और समय पर खाना लें ताकि उनका इम्यून सिस्टम स्ट्रॉंग बना रहें.

कामगारों को उनके कौशल के अनुसार मिले काम

पटना. पाटलिपुत्र विश्वविद्यालय के एसएमडी कॉलेज, पुनपुन में 'कोविड-19: अप्रवासी कामगारों के दैनंदिनी जीवन' विषय पर वेबिनार हुआ. वेबिनार का उद्घाटन करते हुए कुलपति प्रो जीसीआर जायसवाल ने कहा कि कि कुशल, अर्द्ध कुशल एवं अकुशल कामगार जिन-जिन प्रदेशों में लौटे हैं, उन्हें उनके कौशल के अनुकूल काम दिया जाना चाहिए ताकि फिर से

उनके जीवन में आर्थिक, सामाजिक, सांस्कृतिक, शैक्षणिक एवं स्वास्थ्य संबंधी खुशी लौट सके. वे अपने को जड़ों से उखड़े हुए महसूस न करें. उन्होंने कहा कि उनकी समस्या इस वैश्विक महामारी में दोहरी हो चुकी है. पुराना काम छूट गया और नया मिला नहीं. ऐसी परिस्थिति में उन्हें देश की अर्थव्यवस्था की मुख्य धारा में लाने का प्रयास करना होगा.

Immunity Boosting Higher plants and Covid 19: Webinar conducted by Department of Botany

11-06-2020



A webinar entitled “Immunity Boosting Higher plants and Covid 19” was conducted by Department of Botany in collaboration with IQAC on 11-06-2020. Prof. N .N. Tripathi , Ex.H.O.D. Botany , Deen Dayal Upadhyaya University, Gorakhpur was the chief speaker who laid stress on the importance of Immunity and also suggested certain ways to make the immune system healthy. 183 participants participated in this webinar.

प्याज, लहसुन व गिलोय का करें प्रयोग

पटना (एसएनबी)। दीनदयाल उपाध्याय विवि गोरखपुर के वनस्पति विभाग के पूर्व अध्यक्ष प्रो. एनएन त्रिपाठी ने कोरोना वायरस के बढ़ते प्रभाव के मद्देनजर रोग प्रतिरोधक क्षमता बढ़ाने के लिए औषधीय पौधों से बनी दवाओं के इस्तेमाल का सुझाव दिया। उन्होंने कहा कि मैथी, अजवाइन का इस्तेमाल कर उच्च रक्तचाप और पीलिया से बचा जा सकता है। उन्होंने ये बातें कॉलेज ऑफ कॉमर्स आर्ट्स एंड साइंस में वनस्पति विज्ञान और आईक्यूएसी के संयुक्त तत्वावधान में बुधवार को रोग प्रतिरोधक क्षमता बढ़ाने वाले औषधीय पौधे और कोविड -19 विषय पर राष्ट्रीय वेबिनार में कहीं। उन्होंने कहा कि कीवी में विटामिन सी प्रचुर मात्रा में पाया जाता है।

कोरोना से बचाव

यह फल दम्मा के मरीजों के लिए फायदेमंद है। ग्रीन टी, प्याज, लहसुन, काली मिर्च के अलावा अदरक, गिलोय, तुलसी और अश्वगंधा का प्रयोग कर कोरोना से बचा जा सकता है। अल्कोहल युक्त सैनिटाइजर के अधिक उपयोग से चर्म रोग खतरा बढ़ जाता है। इसलिए एलोवेरा को इसके विकल्प के रूप में इस्तेमाल करना चाहिए। वेबिनार की अध्यक्षता करते हुए प्राचार्य प्रो. तपन कुमार शान्दिल्य ने देसी चिकित्सा पद्धति को अपना कर रोग प्रतिरोधक क्षमता बढ़ाने का सुझाव दिया।

वनस्पति विभागाध्यक्ष प्रो. मनोज कुमार ने औषधीय पौधों के गुणों और

विभिन्न बिमारियों विशेष रूप से रोग प्रतिरोधक क्षमता विकसित करने में इसके योगदान पर विस्तार से प्रकाश डाला। वेबिनार के सचिव डॉ. मुन्वर फजल ने हल्दी, अदरक और दालचीनी के औषधीय गुणों पर प्रकाश डाला। कार्यक्रम का संचालन और धन्यवाद ज्ञापन प्रो. सांत्वना रानी ने किया। वेबिनार में पाटलिपुत्र विवि के कुलानुशासक प्रो. मनोज कुमार, एनएसएस के समन्वयक डॉ. मनोज कुमार, पटना विवि के चौधरी शरफुद्दीन, कॉलेज के मीडिया प्रभारी डॉ. तारिक फातमी के अलावा लखनऊ हैदराबाद, उड़ीसा, कोलकाता और उत्तराखंड के ढाई सौ से अधिक विशेषज्ञों और छात्र-छात्राओं ने भाग लिया।

रोग प्रतिरोधक शक्ति बढ़ाने के लिए औषधीय पौधे बेहतर विकल्प

पटना (आससे)। कॉलेज आफ कॉमर्स आर्ट्स एण्ड साइंस पटना में वनस्पति विज्ञान और आईक्यूएसी के संयुक्त तत्वावधान में रोग प्रतिरोधक क्षमता बढ़ाने वाले औषधीय पौधे और कोविड-19 विषय पर राष्ट्रीय वेबिनार का आयोजन किया गया।

वेबिनार के मुख्य वक्ता दीनदयाल उपाध्याय विश्वविद्यालय गोरखपुर के वनस्पति विभाग के पूर्व विभागाध्यक्ष प्रो एन एन त्रिपाठी ने कोरोना वाइरस के बढ़ते प्रभाव के मद्देनजर रोग प्रतिरोधक क्षमता बढ़ाने के लिए औषधीय पौधों से बनी दवाओं के इस्तेमाल का सुझाव दिया।

उन्होंने कहा कि मैथी, अजवाइन का इस्तेमाल कर के उच्च रक्तचाप और पीलिया की बीमारी से बचा जा सकता है।

उन्होंने कहा कि कीवी में विटामिन सी प्रचुर मात्रा में पाया जाता है और यह फल दम्मा के मरीजों के लिए

फायदेमंद है। उन्होंने कहा ग्रीन टी, प्याज, लहसुन, काली मिर्च के अलावा अदरक, गिलोय, तुलसी और अश्वगंधा का प्रयोग कर के कोरोना से बचा जा सकता है।

प्रो. तिवारी ने बताया कि अल्कोहल युक्त सेनाटाइजर के अधिक उपयोग से चर्म रोग होने की संभावना बढ़ जाती है इसलिए एलोवेरा को इसके विकल्प के रूप में इस्तेमाल किया जाना चाहिए।

वेबिनार की अध्यक्षता करते हुए प्रिंसिपल प्रो. तपन कुमार शान्दिल्य ने लोगों को देशी चिकित्सा पद्धति को अपना कर अपनी रोग प्रतिरोधक क्षमता बढ़ाने का सुझाव दिया।

उन्होंने कहा कि आयुर्वेद में भी देसी औषधीय पौधों का इस्तेमाल कर बहुत सारी जटिल बीमारियों की दवायें बनाई हैं जो रोग पर कारगर रूप से असर करती हैं और इसका कोई दुष्प्रभाव भी नहीं होता है। वनस्पति विभाग के

विभागाध्यक्ष प्रो. मनोज कुमार ने औषधीय पौधों के गुणों और विभिन्न बीमारियों विशेष रूप से रोग प्रतिरोधक क्षमता विकसित करने में इसके योगदान पर विस्तार से प्रकाश डाला।

वेबिनार के सचिव डॉ. मुन्वर फजल ने घर में इस्तेमाल होने वाले मसालों हल्दी, अदरक और दालचीनी औषधीय गुणों पर प्रकाश डाला। कार्यक्रम का संचालन और धन्यवाद ज्ञापन प्रो. सांत्वना रानी ने किया। वेबिनार से पाटलिपुत्र विश्वविद्यालय के कुलानुशासक प्रो. मनोज कुमार, एन एस एस के समन्वयक डॉ. मनोज कुमार, पटना विश्वविद्यालय के चौधरी शरफुद्दीन के अलावा लखनऊ, हैदराबाद, उड़ीसा, कोलकाता और उत्तराखंड के लगभग ढाई सौ से अधिक विशेषज्ञों और छात्र-छात्राओं ने भाग लिया।



Water Management and Administration : Webinar conducted by Department of Economics

12-06-2020

A national webinar entitled “Water Management and Administration” was conducted by Department of Economics in collaboration with IQAC on 12-06-2020. Meghna Mukherjee, a renowned social scientist from Netherland, was the chief speaker who emphasized the need of cooperative effort of government as well as local bodies and society in water management. 120 participants participated in this webinar.

जल प्रबंधन में स्थानीय समुदायों की भूमिका महत्वपूर्ण

पटना. जल प्रबंधन में सरकार की भूमिका के साथ-साथ स्थानीय समुदायों, स्वयंसेवी संस्थाओं तथा सामान्य जन की महत्वपूर्ण भूमिका होती है. यादगते नीदरलैंड की सामाजिक वैज्ञानिक मेघना मुखर्जी ने कही. वह गुरुवार को कॉलेज ऑफ कॉमर्स आर्ट्स एंड साइंस में अर्थशास्त्र विभाग और आईक्यूएसी की ओर से 'जल प्रबंधन और शासन' विषय पर आयोजित राष्ट्रीय वेबिनार



विश्व में है. जल एक अमूल्य प्राकृतिक संसाधन है, जो संपूर्ण परिस्थितिक तंत्र के लिए महत्वपूर्ण है. मुखर्जी ने कहा कि प्राकृतिक संसाधनों के प्रबंधन संबंधी नीति निर्माण में सदा ही पारंपरिक व्यवस्थाओं तथा कौशल को शामिल किया जाना चाहिए. जल विवादों का उचित निर्णयन, गुणवत्ता की सुनिश्चितता तथा जल की आपूर्ति संबंधी समस्याओं के उचित निर्वहन के लिए

विकसित अर्थव्यवस्था एक आवश्यक शर्त है. प्राकृतिक संसाधनों का समुचित प्रबंधन एवं वितरण ही अर्थव्यवस्था को विकसित करने में सहायक सिद्ध होगा. कार्यक्रम की अध्यक्षता करते हुए कॉलेज के प्राचार्य प्रो तपन कुमार शांडिल्य ने कहा कि अगर हम सही मायने में विकसित होना चाहते हैं तो हमें प्राकृतिक संसाधनों का समुचित प्रबंधन अनिवार्य रूप से करना होगा.

जल प्रबंधन में सरकार व सामान्य जन की भूमिका अहम

पटना (एसएनबी)। नीदरलैंड की सामाजिक वैज्ञानिक मेघना मुखर्जी ने कहा कि जल प्रबंधन में सरकार की आम भूमिका के साथ स्थानीय समुदायों, स्वयंसेवी संस्थाओं तथा सामान्य जन की महत्वपूर्ण भूमिका होती है। उन्होंने ये बातें कॉलेज ऑफ कॉमर्स आर्ट्स एण्ड साइंस में अर्थशास्त्र विभाग और आईक्यूएसी के संयुक्त तत्वावधान में जल प्रबंधन और शासन विषय पर आयोजित राष्ट्रीय वेबिनार में कहीं। उन्होंने कहा कि इस विषय की प्रासंगिकता सम्पूर्ण विश्व में है। जल अमूल्य प्राकृतिक संसाधन है, जो सम्पूर्ण परिस्थितिक तंत्र के लिए महत्वपूर्ण है। श्री

मुखर्जी ने कहा कि प्राकृतिक संसाधनों के प्रबंधन संबंधी नीति निर्माण में सदा ही पारंपरिक व्यवस्थाओं तथा कौशल को शामिल किया जाना चाहिए।

जल संसाधन प्रबंधन के अन्य आयामों तथा गुणवत्ता, विवाद तथा आपूर्ति संबंधी समस्याओं पर प्रकाश डालते हुए उन्होंने कहा कि जल विवादों का उचित निर्णयन, गुणवत्ता की सुनिश्चितता तथा जल की आपूर्ति संबंधी समस्याओं के उचित निर्वहन के लिए विकसित अर्थव्यवस्था एक आवश्यक शर्त है। उन्होंने कहा कि प्राकृतिक संसाधनों का समुचित प्रबंधन एवं वितरण ही अर्थव्यवस्था को

विकसित करने में सहायक सिद्ध होगा। प्राचार्य प्रो. तपन कुमार शांडिल्य ने कहा कि अगर हम सही मायने में विकसित होना चाहते हैं तो हमें प्राकृतिक संसाधनों का समुचित प्रबंधन अनिवार्य रूप से करना होगा। संचालन अर्थशास्त्र की विभागाध्यक्ष प्रो. रश्मि अखौरी ने किया। वेबिनार में अन्य लोगों के अलावा प्रो. मृदुला कुमारी, प्रो. उमेश प्रसाद, प्रो. प्रवीण कुमार, प्रो. केएन यादव, प्रो. विवेक कुमार, प्रो. रमेश चौधरी, प्रो. संजय पांडेय, प्रो. बैकुंठ राय, आईक्यूएसी के संयोजक प्रो. संतोष कुमार, अंग्रेजी की विभागाध्यक्ष प्रो. सलोना कुमार, मनोविज्ञान की प्रो. कीर्ति आदि मौजूद थे।



Covid 19 and its Impact on Indian Economy: A Webinar conducted by Department of Economics

13-06-2020

A webinar on the impact of Covid 19 on Indian Economy was organised by Department of Economics in collaboration with IQAC, Economic Association of Bihar and Indian Economic Association. Prof. Puleen B. Nayak from Delhi School of Economics, New Delhi was the chief speaker. He asserted the need of framing policies keeping in mind social, political and economic dimensions. 156 participants participated in this webinar.

श्रमिकों के कष्ट निवारण के लिए सामाजिक संरक्षण कार्यक्रम पर ध्यान देना होगा: प्रो. देव

पटना (आससे)। इंडियन इकोनॉमिक एसोसिएशन के अध्यक्ष प्रो. महेंद्र देव ने कहा कि भारतीय अर्थव्यवस्था पहले ही आर्थिक मंदी का शिकार थी और कोविड के कारण ऐसी संभावना है कि मुख्य उद्योगों का जीवीए ऋणात्मक होने के कारण जीडीपी का ऋणात्मक दर अनुमानित किया गया। उन्होंने कहा है कि भारतीय अर्थव्यवस्था कब इस प्रकोप से उभरेगी यह कहना मुश्किल है। श्रमिकों के कष्ट को दूर करने के लिए सामाजिक संरक्षण कार्यक्रम पर विशेष ध्यान होगा। यह बात कॉलेज ऑफ कामर्स आर्ट्स एंड साइंस में कोविड-१९ और भारतीय पर इसका प्रभाव विषय पर सम्बोधित कर रहे थे। यह आयोजन अर्थशास्त्र विभाग, इंडियन इकोनॉमिक एसोसिएशन तथा बिहार इकोनॉमिक एसोसिएशन के संयुक्त में तत्वावधान में

आयोजित की गयी।

कॉलेज के प्रिंसिपल प्रो. तपन कुमार शांडिल्य ने भारत में कोविड-१९ के प्रभाव विशेष रूप से प्रवासी मजदूरों की समस्याओं तथा उनकी आर्थिक स्थिति में सुधार लाने के उपायों की चर्चा की। उन्होंने कहा कि प्रवासी मजदूरों के लिए छोटे-छोटे उद्योगों को प्रोत्साहन देना जरूरी है। इसके अलावे वेबिनार को इकोनॉमिक एसोसिएशन ऑफ बिहार के सचिव प्रो. अनिल कुमार ठाकुर, इंडियन इकोनॉमिक एसोसिएशन के समन्वयक डॉ. एस नारायण, अर्थशास्त्र की विभागाध्यक्ष प्रो. रश्मि अखौरी, प्रो. उमेश प्रसाद, प्रो. के. यादव, प्रो. प्रवीण कुमार, डॉ. मुदुला कुमारी आदि ने अपने विचार व्यक्त किये। कार्यक्रम का धन्यवाद ज्ञापन आईक्यूएसी के संयोजक प्रो. संतोष कुमार ने किया।

भारतीय अर्थव्यवस्था कब उबरेगी कहना मुश्किल : प्रो. एस महेंद्र

■ पटना (एसएनबी)।

कॉलेज ऑफ कॉमर्स आर्ट्स एंड साइंस में कोविड-19 और भारतीय अर्थव्यवस्था पर इसका प्रभाव विषय पर शुक्रवार को अर्थशास्त्र विभाग और इंडियन इकोनॉमिक एसोसिएशन तथा बिहार इकोनॉमिक एसोसिएशन के संयुक्त तत्वावधान में राष्ट्रीय वेबिनार का आयोजन किया गया।

कोविड-19 और भारतीय अर्थव्यवस्था पर इसका प्रभाव विषय पर राष्ट्रीय वेबिनार

इंडियन इकोनॉमिक एसोसिएशन के अध्यक्ष तथा इंटरनेशनल फुड पॉलिसी रिसर्च इंस्टीट्यूट वाशिंगटन डीसी के उपाध्यक्ष प्रो. एस महेंद्र देव ने कहा कि भारतीय अर्थव्यवस्था पहले ही आर्थिक मंदी का शिकार थी और कोविड के कारण ऐसी संभावना है कि मुख्य उद्योगों का जीवीए ऋणात्मक दर अनुमानित किया गया है।

उनका कहना था कि भारतीय अर्थव्यवस्था कब इस प्रकोप से उबरेगी कहना मुश्किल है। अधिकतम श्रमिक असंगठित क्षेत्र में काम करते हैं। श्रमिकों के कष्ट को दूर करने के लिए सामाजिक संरक्षण कार्यक्रम पर विशेष ध्यान देना होगा। उन्होंने सुरक्षा और संवर्धन के उपायों की चर्चा करते हुए कहा कि प्रवासी मजदूरों के लिए न्यूनतम सामाजिक सुरक्षा और निपुणता निर्माण प्रावधान आवश्यक है। प्रिंसिपल प्रो. तपन कुमार शांडिल्य ने कहा कि प्रवासी मजदूरों के लिए छोटे-छोटे उद्योगों को प्रोत्साहन देना जरूरी है। इकोनॉमिक एसोसिएशन ऑफ बिहार के सचिव प्रो. अनिल कुमार ठाकुर ने कहा कि कोविड-19 ने भारत सहित विश्व की अर्थव्यवस्था को प्रभावित किया है। इस समस्या से निपटने के लिए केंद्र और राज्य सरकारों के बीच सामंजस्य की आवश्यकता है।



लॉकडाउन व्याख्यान श्रृंखला-5 का आयोजन

पटना। अर्थशास्त्र विभाग और आइक्यूएसी, कॉलेज ऑफ कॉमर्स, आर्ट्स एंड साइंस, इकोनॉमिक एसोसिएशन ऑफ बिहार और इंडियन इकोनॉमिक एसोसिएशन के सहयोग के साथ लॉकडाउन व्याख्यान श्रृंखला-5 का आयोजन किया गया। व्याख्यान का विषय भारतीय अर्थव्यवस्था पर कोविड-19 का प्रभाव था। प्रो. पुलीन बी. नायक, दिल्ली स्कूल ऑफ इकोनॉमिक्स, नई दिल्ली प्रमुख वक्ता थे। उन्होंने कहा कि भारतीय अर्थव्यवस्था में आय और संपत्ति में असमानता है। उन्होंने पिछले 25 वर्षों के जीडीपी वृद्धि दर को ध्यान में रखते हुए कहा कि भारतीय अर्थव्यवस्था पहले से ही अप्रत्याशित गिरती हुई जीडीपी वृद्धि दर से प्रभावित था। कोविड-19 के कारण आय असमानता और भी गहरी हो गई है। किसी भी समस्या के समाधान के लिए सामाजिक, आर्थिक और राजनीतिक आयाम को ध्यान में रखते हुए ही नीतियों का निर्माण होना चाहिए। स्वास्थ्य क्षेत्र में बीमा को उन्होंने अपनी सहमति नहीं दी। उनके अनुसार लोगों के मानसिक विचारों में परिवर्तन लाना होगा। उन्होंने भारतीय अर्थव्यवस्था के संभावित वृद्धि पथ पर अपने विचार व्यक्त करते हुए कहा कि अर्थव्यवस्था के पुनः प्रवर्तन में समय लगेगा क्योंकि जीडीपी वृद्धि दर ऋणात्मक अनुमानित है।

Impact of Covid 19 & Policy Implications: A Webinar conducted by Department of Economics

18-06-2020

A webinar entitled “Impact of Covid 19 & Policy Implications” was organised by Department of Economics in collaboration with IQAC of the college. Prof. Sukhdev Thorat, Ex -chairman, UGC was the chief speaker. He explained extensively the impact of Covid 19 on informal workers especially daily wages labours. 164 participants participated in this webinar.



कोविड से मजदूर अधिक प्रभावित

पटना . विश्वविद्यालय अनुदान आयोग के पूर्व अध्यक्ष प्रो सुखदेव थोराट ने कहा कि कोविड-19 से 38 प्रतिशत अनौपचारिक श्रमिक और 10 प्रतिशत स्वनियोजित श्रमिक सबसे अधिक प्रभावित हुए हैं. वे बुधवार को अर्थशास्त्र विभाग कॉलेज ऑफ कॉमर्स आर्ट्स एंड साइंस और आईक्यूएसी के संयुक्त तत्वावधान में 'कोविड-19 उसके परिणाम और अपेक्षित नीतियां' विषय पर आयोजित वेबिनार को संबोधित कर रहे थे.

उन्होंने कहा कि कोविड के प्रभाव से उबरने के लिए लोगों को भूख से बचाने के लिए हमें मांग का सृजन करना होगा. वेबिनार की अध्यक्षता करते हुए

प्रिंसिपल प्रो तपन कुमार शांडिल्य ने कोविड की विभीषिका और उस से उत्पन्न स्थिति विशेष रूप से प्रवासी श्रमिकों और उद्योग जगत पर पड़ने वाले प्रभाव पर विस्तार से प्रकाश डाला.

इंडियन इकोनॉमिक एसोसिएशन के समन्वयक प्रो एस नारायण ने लॉकडाउन के कारण संक्रमण के मामले में कमी आयी है और इस से स्वास्थ्य प्रणाली को संसाधन जुटाने और बुनियादी ढांचे को मजबूत करने में मदद मिली है. वेबिनार को अन्य लोगों के अलावा छत्तीसगढ़ के प्रो रवींद्र ब्राह्म, प्रो बीपी चंद्रमोहन, प्रो. अनिल कुमार ठाकुर ने भी अपने विचार व्यक्त किये.

कोविड से श्रमिक सबसे अधिक प्रभावित

सोले प्रो. सुखदेव

पटना (एसएनबी). विश्वविद्यालय अनुदान आयोग के पूर्व अध्यक्ष प्रो. सुखदेव थोराट ने कहा कि कोविड - 19 से 38 प्रतिशत अनौपचारिक श्रमिक और दस प्रतिशत स्वनियोजित श्रमिक सबसे अधिक प्रभावित हुए हैं। वे बुधवार को कॉलेज ऑफ कॉमर्स आर्ट्स एण्ड साइंस और आईक्यूएसी के संयुक्त तत्वावधान में अर्थशास्त्र विभाग में 'कोविड - 19 उसके परिणाम और अपेक्षित नीतियां' विषय पर आयोजित वेबिनार को संबोधित कर रहे थे। उन्होंने कहा कि कोविड के प्रभाव से उबरने के लिए लोगों को भूख से

बचाने के लिए हमें मांग का सृजन करना होगा। वेबिनार की अध्यक्षता करते हुए प्रिंसिपल प्रो. तपन कुमार शांडिल्य ने कोविड की विभीषिका और उससे उत्पन्न स्थिति में विशेष रूप से

लोगों को भूख से बचाने के लिए हमें मांग का सृजन करना होगा

प्रवासी श्रमिकों और उद्योग जगत पर पड़ने वाले प्रभाव पर विस्तार से प्रकाश डाला। इंडियन इकोनॉमिक एसोसिएशन के समन्वयक प्रो. एस नारायण ने कहा कि लॉकडाउन के कारण संक्रमण के मामले में कमी आई है और इससे स्वास्थ्य प्रणाली को संसाधन जुटाने और

बुनियादी ढांचे को मजबूत करने में मदद मिली है। वेबिनार में अन्य लोगों के अलावा छत्तीसगढ़ के प्रो. रवींद्र ब्रो, प्रो. बीपी चंद्रमोहन, प्रो. अनिल कुमार ठाकुर ने भी अपने विचार व्यक्त किए। अर्थशास्त्र की विभागाध्यक्ष प्रो. रश्मि अखौरी ने विषय प्रवेश कराते हुए अर्थव्यवस्था को सुदृढ़ करने के लिए लघु अवधि और दीर्घकालीन अवधि के उपायों की चर्चा की। वेबिनार का संचालन प्रो. संजय पांडेय ने किया। व्याख्यान श्रृंखला में प्रो. उमेश प्रसाद, प्रो. प्रवीण कुमार, प्रो. केएन यादव, प्रो. मृदुला कुमारी, प्रो. विवेक कुमार, प्रो. रमेश चौधरी, प्रो. वैकुण्ठ राय, कॉलेज के मीडिया प्रभारी डॉ. तारिक फातिमी शामिल हुए।

Webinar on Free Door to Door Sanitization & Free Water Hygiene Testing

19-07-2020

College of Commerce, Arts & Science in collaboration with Service Facility India PVT LTD organised a webinar entitled "How to safeguard home during Covid 19 pandemic". Prof. Tapan Kumar Shandilya, Principal of the college, was the chief guest. He explained the necessity of social distancing and sanitization in the hour of covid 19 pandemic and requested everyone to follow strictly the guidelines issued by the government from time to time. 136 participants participated in this webinar.



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WEBINAR ON FREE DOOR TO DOOR SANITIZATION &
FREE WATER HYGIENE TESTING

COLLEGE OF COMMERCE ARTS AND
SCIENCE
&
SERVICELLO FACILITY INDIA PVT LTD
IS ORGANISING A WEBINAR ON

"HOW TO SAFEGUARD HOME DURING
COVID19 PANDEMIC"

CHIEF GUEST
PROF. TAPAN KR SHANDILYA

JULY 19, 2020
TIME 2PM

Moral implication of Growth and Development: A Webinar

19-07-2020



A webinar on the moral implications of growth and development was organised by Department of Philosophy in collaboration with IQAC of the college. Prof. R. C. Sinha, Ex H.O.D. Philosophy, Patna University, was the chief speaker who touched upon the emotional and psychological aspects of man under Covid 19 pandemic scenario. 167 participants participated in this webinar.

अर्थव्यवस्था के साथ मनुष्य भी चिंता या अवसाद से गुजर रहा है

एजुकेशन रिपोर्टर | पटना

कॉलेज ऑफ कॉमर्स, आर्ट्स एंड साइंस में शनिवार को विकास की नैतिकता पर व्याख्यान आयोजित किया गया। इस दौरान पटना विश्वविद्यालय के दर्शनशास्त्र विभाग के पूर्व विभागाध्यक्ष प्रो. आरसी सिन्हा ने कहा कि मनुष्य का आर्थिक ही नहीं सांस्कृतिक पहलू भी है। उन्होंने मनुष्य के भावनात्मक और संज्ञानात्मक पहलुओं की चर्चा की। विकासशील देशों में सीमांत व्यक्ति विकसित नहीं होता है। विकास के लिए अगर हम नैतिकता की बात करें तो विकास की प्रकृति

समावेशी होनी चाहिए। आज अर्थव्यवस्था के साथ-साथ मनुष्य भी चिंता या अवसाद से गुजर रहा है। वहीं कॉलेज ऑफ कॉमर्स के प्राचार्य प्रो. तपन कुमार शांडिल्य ने बताया कि आज के समय में विकास में नैतिकता के सिद्धांत का महत्व है। कोविड-19 के दौर में इस विषय की प्रासंगिकता की चर्चा करते हुए कहा कि विकास सामाजिक न्याय के साथ होना चाहिए। इस अवसर पर प्रो. रश्मि अखौरी, डॉ. पूर्णिमा सिंह, प्रो. उमेश प्रसाद, प्रो. श्यामल किशोर, प्रो. सलोनी, प्रो. कीर्ति, प्रो. अनिल नाथ, प्रो. बीके सिन्हा, प्रो. अरविंद कुमार नाग, प्रो. मृदुला कुमारी आदि मौजूद रहे।

विकास सामाजिक न्याय के साथ होना चाहिए

पटना (आससे) । कॉलेज ऑफ कॉमर्स आर्ट्स एंड साइंस पटना में शनिवार को विकास की नैतिकता विषय पर वेबिनार का आयोजन किया गया। वेबिनार के मुख्य वक्ता पटना विश्वविद्यालय दर्शन शास्त्र विभाग के पूर्व विभागाध्यक्ष प्रो. आर. सी. सिन्हा ने कहा कि विकास के लिए अगर हम नैतिकता की बात करें तो विकास की प्रकृति समावेशी होनी चाहिए। उन्होंने कहा कि आज अर्थव्यवस्था के साथ साथ मनुष्य भी चिंता या अवसाद से गुजर रहा है। ऐसी परिस्थिति में उन्होंने ने मिल और बेन्थम के सिद्धांतों की प्रासंगिकता पर विस्तार से प्रकाश डाला। वेबिनार की अध्यक्षता करते हुए प्रधानाचार्य प्रो तपन कुमार शांडिल्य ने कहा कि आज के समय में विकास में नैतिकता के सिद्धांत का काफी महत्व है। उन्होंने कहा कि प्रो. एडम स्मिथ भी इसी विचारधारा के ससमर्थक थे। उन्होंने कहा कि विकास सामाजिक न्याय के साथ होना चाहिए। वेबिनार का संचालन करते हुए अर्थ शास्त्र विभाग की विभागाध्यक्ष प्रो रश्मि अखौरी ने कहा कि विकास के लक्ष्यों की प्राप्ति करते समय हमें नैतिक सीमाओं का भी ध्यान रखना चाहिए। वेबिनार में प्रो. उमेश प्रसाद, प्रो. श्यामल किशोर, प्रो. कीर्ति, प्रो. सलोनी कुमार, प्रो. बी.के सिन्हा, प्रो ए के नाग प्रो. मृदुला कुमारी, प्रो. संतोष कुमार और डॉ पूर्णिमा सिंह समेत विभिन्न विश्वविद्यालयों के शिक्षकों और छात्रों ने भी अपने विचार व्यक्त किए। वेबिनार का आयोजन अर्थशास्त्र विभाग और आईक्यूएसी ने संयुक्त रूप से किया था।



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NSS Award 2018-19

25-09-2020

Neeraj Kumar, a student of our college, was given NSS Award 2018-19 by the President of India. He was the first student from Bihar who got this prestigious award. NSS Regional Director, Vinay Kumar, was also present in the award ceremony.



कॉलेज ऑफ कॉमर्स के छात्र नीरज को राष्ट्रपति ने किया सम्मानित

पटना. कॉलेज ऑफ कॉमर्स, आर्ट्स एंड साइंस के छात्र और राष्ट्रीय सेवा योजना एनएसएस



के स्वयंसेवक नीरज कुमार को गुरुवार को वेबकास्ट द्वारा आयोजित भव्य समारोह में राष्ट्रपति रामनाथ कोविंद ने राष्ट्रीय सेवा योजना पुरस्कार 2018-19 से सम्मानित किया. नीरज बिहार से यह सम्मान पाने वाले पहले छात्र हैं. पुरस्कार समारोह में राष्ट्रीय सेवा योजना के क्षेत्रीय निदेशक विनय कुमार भी उपस्थित थे. कॉलेज के प्रधानाचार्य प्रो तपन कुमार शांडिल्य ने नीरज कुमार की इस उपलब्धि पर उन्हें बधाई दी. राष्ट्रीय सेवा योजना की कार्यक्रम पदाधिकारी प्रो कीर्ति ने नीरज कुमार, महाविद्यालय के कुलानुशासक प्रो मनोज कुमार, शिक्षक संघ के अध्यक्ष प्रो एके नाग, महासचिव प्रो ए भास्कर, प्रो उमेश प्रसाद, आइक्यूएसी के समन्वयक प्रो संतोष कुमार, प्रो खालिद अहमद, प्रो सलोनी कुमार, प्रो मंगला रानी, डॉ संगीता सिंह, डॉ संयुक्ता समेत अन्य शिक्षकों ने भी उन्हें शुभकामनाएं दी हैं.






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On the occasion of Gandhi Jayanti, a talk was organised in the college on the topic,

“Understanding Gandhi through the Lens of a Developmental Ecologist”. Dr. Somnath Bandopadhyaya, School of Ecology and Environment Studies, was the invited speaker while Dr. Santosh Kumar, Co-ordinator IQAC, was the moderator. 187 participants participated in this webinar.




College of Commerce, Arts & Science
Kankarbagh, Patna – 800020
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A talk on

**Understanding Gandhi through the Lens of a
Development Ecologist**


As a tribute to the father of the Nation on the occasion of
GANDHI JAYANTI




Inaugural Address
Prof.(Dr.) Tapan Kumar Shandilya
Principal,
College of Commerce, Arts and Science, Patna.



Invited Speaker
Dr. SOMNATH BANDYOPADHYAY
School of Ecology & Environment Studies,
Nalanda University, Rajgir (Bihar), India.



Vote of Thanks
Prof. Rachna Suchinmayee
Professor of Political Science,
College of Commerce, Arts and Science, Patna.



Moderator
Dr. Santosh Kumar
Associate Professor of Physics & IQAC Co-ordinator,
College of Commerce, Arts and Science, Patna.

Organized By
IQAC, College of Commerce, Arts and Science, Patna.



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**A National Webinar conducted on Pandit Madan Mohan Malviya evam Bhartiya
Bhasha mein Nyaya**

24-12-2020

A National Webinar conducted on Pandit Madan Mohan Malviya evam Bhartiya Bhasha mein Nyaya. 143 participants participated in this webinar.



कॉलेज ऑफ़ कॉमर्स, आर्ट्स एंड साइंस
कंकड़बाग, पटना - 800020

(पाटलिपुत्र विश्वविद्यालय की अंगीभूत इकाई)

एवं



भारतीय भाषा अभियान,
शिक्षा संस्कृति उत्थान न्यास (बिहार प्रदेश)

द्वारा राष्ट्रीय वेबिनार का आयोजन



विषय :- पंडित मदन मोहन मालवीय एवं भारतीय भाषा में न्याय

सान्निध्य :- प्रो० डॉ० विजयकान्त दास

सदस्य, बिहार राज्य विश्वविद्यालय सेवा आयोग, पटना

एवं क्षेत्र संयोजक, बिहार और झारखंड

अध्यक्षता :- प्रो० डॉ० तपन कुमार शांडिल्य

प्राचार्य, कॉलेज ऑफ़ कॉमर्स, आर्ट्स एंड साइंस

कंकड़बाग, पटना - 20

मुख्य वक्ता :-

1. डॉ० आनंद शंकर सिंह,
प्राचार्य, ईश्वर शरण पी० जी० कॉलेज, प्रयागराज
पूर्व सदस्य सचिव, भारतीय इतिहास अनुसंधान परिषद्
नई-दिल्ली
2. डॉ० दिलीप कुमार,
वरिय एग्जीक्यूटिव, एन० सी० ए० ई० आर०, नई-दिल्ली
3. प्रो० विनय कुमार सिन्हा,
विधि विभाग, कॉलेज ऑफ़ कॉमर्स, आर्ट्स एंड साइंस, पटना

धन्यवाद ज्ञापन :- प्रो० संजय कुमार पाण्डेय, अर्थशास्त्र विभाग

कॉलेज ऑफ़ कॉमर्स, आर्ट्स एंड साइंस, पटना



Google Meet Link : <https://meet.google.com/sra-rruc-qsr>

तिथि: 25 दिसम्बर 2020 (शुक्रवार) समय: 11:00 सुबह (भारतीय समयानुसार)

2021

BLOOD DONATION CAMP
07.01.2021



The NSS of the college organized a blood donation camp on 07th January, 2021 in the college campus with collaboration of Bihar State Aids Control Society. More than dozen volunteers donated blood in the camp.

The principal of the college, Prof. Tapan Kumar Shandilya started the program with his speech in which he emphasized that blood donation is a great cause and is the highest kind of donation that one can give to the mankind. The NSS organizer, Prof Kirti further elaborated that such camps are quite regular in the college. Moreover, the NSS of the college also organized such a camp during the COVID pandemic last year and many of the students volunteered for blood donation along with distribution of blankets, food packets and water.





..... خون عطیہ کیجیے کا انعقاد.....

कॉलेज ऑफ कॉमर्स में रक्तदान शिविर का आयोजन

पटना | कॉलेज ऑफ कॉमर्स, आर्ट्स एंड साइंस की राष्ट्रीय सेवा योजना इकाई और बिहार एड्स कंट्रोल सोसाइटी के संयुक्त तत्वावधान में गुरुवार को रक्तदान शिविर का आयोजन किया गया। प्राचार्य प्रो. तपन कुमार शांडिल्य ने उद्घाटन करते हुए कहा कि रक्तदान, महादान है और पीड़ित मानवता की सेवा का अमूल्य अवसर है। एनएसएस की कार्यक्रम पदाधिकारी प्रो. कीर्ति ने कहा कि कोरोना काल में आयोजित इस शिविर में एक दर्जन से अधिक छात्र-छात्राओं ने रक्तदान किया। इनमें ट्विंकल, श्रुति, रोहित, नीरज, आनंद, विकास, अमन और नितिन समेत लगभग एक दर्जन से अधिक स्वयंसेवक शामिल रहे।



कालेज ऑफ कामर्स में रक्तदान शिविर का आयोजन

पटना (आससे)। कालेज ऑफ कामर्स आर्ट्स एण्ड साइंस पटना की राष्ट्रीय सेवा योजना ईकाई और बिहार एड्स कंट्रोल सोसाइटी के संयुक्त तत्वावधान में गुरुवार को महाविद्यालय में रक्त दान शिविर का आयोजन किया गया।

प्रधानाचार्य प्रो तपन कुमार शान्दिल्य ने शिविर का उद्घाटन करते हुए कहा कि रक्तदान एक महा दान है और पीड़ित मानवता की सेवा का अमूल्य अवसर है। एनएसएस की कार्यक्रम पदाधिकारी प्रो. कीर्ति ने

बताया कि कोरोना काल में आयोजित इस शिविर में एक दर्जन से अधिक छात्र-छात्राओं ने रक्त दान किया। रक्त दान करने वालों में ट्विंकल, श्रुति, रोहित, नीरज, आनंद, विकास, अमन और नितिन समेत लगभग एक दर्जन से अधिक स्वयंसेवक शामिल थे।

इस अवसर पर माडल बल्ड सेंटर के डॉ अखिलेश्वर सिंहा, रेड रीबन कल्ब के आलोक कुमार, राजेश रंजन और कुलानुशासक डॉ मनोज कुमार उपस्थित थे।

WEBINAR ON DHAMMA- CENTRIC SECULARISM, SOCIAL CONTRACT & POLITICS: A BUDDHIST PERSPECTIVE

19/01/2021

The department of Philosophy and IQAC of the college organized the webinar on the Buddhists believe. The topic of the webinar was “Dhamma- Centric Secularism, Social Contract & Politics: A Buddhist Perspective” on 19 January, 2021 at 11.30 am. The webinar shed light on various concepts related to Dhamma that is a central belief in Buddhism which means 'to uphold' the religion and the natural order of the universe. The chief speaker Prof. H. S. Prasad discussed said that the main principles of Dhamma are based on the teachings and actions of the Buddha and the social contract is based on the idea of mutual benefit and the interdependence of individuals in society. The inequality in the society is neither natural nor permanent. The inaugural address was given by Prof. Tapan Kumar Shandilya, Principal, College of Commerce, Arts & Science, Patna. The chief speaker of the webinar was Prof. H. S. Prasad, Professor & Head (Rtd.), Department of Philosophy, University of Delhi, Delhi. The webinar was moderated by Prof. Pramod Kumar, Professor & Head, Department of Philosophy, College of Commerce, Arts & Science, Patna. Vote of thanks was given by Dr. Sushma Kumari, Assistant Professor, College of Commerce, Arts & Science, Patna. Overall, 180 participants participated in the webinar.



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WEBINAR
ON

TOPIC : DHAMMA-CENTRIC SECULARISM, SOCIAL CONTRACT & POLITICS : A BUDDHIST PERSPECTIVE

Inaugural Address
Prof. (Dr.) Tapan Kumar Shandilya
Principal,
College of Commerce, Arts and Science, Patna.

Invited Speaker (Chief Speaker)
Prof. H. S. Prasad
Professor & Head (Retd.), Department of Philosophy,
University of Delhi, Delhi.

Moderator
Prof. Pramod Kumar
Professor & Head, Department of Philosophy,
College of Commerce, Arts and Science, Patna.

Vote of Thanks
Dr. Sushma Kumari
Assistant Professor, Department of Philosophy,
College of Commerce, Arts and Science, Patna.

Organized By
Department of PHILOSOPHY & IQAC,
College of Commerce, Arts and Science, Patna.

Google Meet Link : <https://meet.google.com/ozs-nhdk-asz>
Date: 19th January, 2021 (Tuesday)
Time: 11:30 AM IST

NETAJI SUBHASH CHANDRA BOSE JAYANTI

23-1-2021

The NSS of the college organised the 125th Netaji Subhash Chandra Bose Jayanti on 23rd January, 2021 in the Vanijya Sabhagar of the college. This program was organised by the NSS Coordinator Prof. Kirti in which the Principal of the college gave an inspirational speech on the motto of NSS, that is, **Not me but you**. All the head of the departments, faculty members, students and other staff members of the college were present on this occasion.







REPUBLIC DAY CELEBRATION

26-1-2021

The 72nd Republic day was celebrated in College of Commerce, Arts and Science, Patna with a great feeling of patriotism in every one's heart. The Principal of the college, Prof. Tapan Kumar Shandilya gave an inspirational and patriotic speech on the occasion. Students and teachers gathered in large numbers on the day. The NSS of the college performed on the republican beat. A spectacular cultural program was performed by the students of the college presenting the colours of the republic day.





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PANCHAYATI RAJ: EMPOWERMENT & ACCOUNTABILITY

THE 10th K.K SINHA MEMORIAL LECTURE

31-1-2021

K.K. Sinha Uma Sinha Foundation in association with College of Commerce, Arts and Science, Patliputra University, Patna organized the 10th K.K. Sinha Memorial Lecture on Panchayati Raj: Empowerment and Accountability by Dr. Ashok Lahiri (keynote speaker) on Sunday, 31st January, 2021. Total 223 participants participated in this lecture.

K.K. Sinha Uma Sinha Foundation
in association with
College of Commerce, Arts & Science, Patliputra University, Patna
presents
The 10th K.K. Sinha Memorial Lecture
by
Dr. Ashok Lahiri
on the topic
Panchayati Raj: Empowerment & Accountability
Sunday, January 31 2021, 4pm onwards



Our Keynote Speaker:
Dr. Ashok Lahiri

Dr. Ashok Lahiri currently serves as a member of the 15th Finance Commission and has held the following positions in the past:

- Chief Economic Adviser to the Government of India
- Executive Director of the Asian Development Bank
- Senior Economist, International Monetary Fund
- Consultant, World Bank
- Chairman of Bandhan Bank
- Director of the National Institute of Public Finance and Policy
- Reader at the Delhi School of Economics, Delhi University

His academic works have been widely published in eminent international and national journals.

K. K. Sinha Uma Sinha Foundation

WORKSHOP ON GLOBAL WOMEN BREAKFAST (GWB)- 2021

11-02-2021

The International Union of Pure and Applied Chemistry (IUPAC) is an international federation of “National Adhering Organizations” that represents chemists in individual countries. IUPAC was established in 1919 and well known for IUPAC nomenclature of organic compounds. IUPAC organizes Global Women’s Breakfast on different themes. First IUPAC Global Women’s Breakfast (Women Sharing a Chemical Moment in Time) was organized as part of the International Year of Chemistry (IYC2011) on 18, January, 2011. There were close to 100 breakfasts in 44 countries attended by approximately 5000 women chemists, making it one of the largest gatherings of women scientists at that time. Successful Global Women’s Breakfast events held in 2019 and 2020 have demonstrated the need to build a network of both women and men working together to address the barriers and inequalities faced by women in science.

Department of chemistry, College of Commerce, Arts and Science, Patna had organized an online program on 11th February 2021 for this occasion of IUPAC - Global Women Breakfast



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2021. The program was registered on IUPAC's website with the topic of "Women Empowerment in Education". The program was focused on women empowerment. There were three lectures delivered by three female faculty members of COCAS, Patna Prof. Dr. Bindu Singh, Department of Zoology, Prof. Dr. Mangala Rani, Dept. of Hindi and Dr. Padimini from the Dept. of Commerce. The program was coordinated by Dr. Dimple Kumari, Assistant professor Dept. of Chemistry. Vote of thanks was given by Prof. Dr. Mridula Kumari, dept. of Economics. Technical support of program was done by Prof. Dr. Rashmi Akhouri, Dept. of Economics and Dr. Santosh Kumar, coordinator IQAC, COCAS, Patna. Total 105 participants participated in this event.

The image shows a screenshot of the IUPAC website event page and a flyer for the Women Empowerment in Education program. The website page features a navigation menu with options like WHO WE ARE, WHAT WE DO, EVENTS, PROJECTS, and NEWS. The main content area displays the event title "Women Empowerment in Education" and a "JOIN THE CONVERSATION" button. Below this, there is a contact section for Dr. Dimple Kumari, a venue section for Commerce College E Rd, Patna, BR 800020, India, and a time section for 11:00 (UTC +05:30). A summary section provides details about the IUPAC Global Women's Breakfast at the College of Commerce, Arts and Science Patna. A map shows the location of the college. The flyer below the website page features logos for GI Wo B, Patliputra University, and Patliputra University. It announces a program on Women Empowerment in Education (IUPAC Global Women's Breakfast 2021) organized by the College of Commerce, Arts and Science, Patna. The program is scheduled for 09th February, 2021, at 11:00 A.M. The flyer also includes a cordial invitation to participate in the program, the platform (Zoom), and the link: <https://us02web.zoom.us/j/85743328739?pwd=MHU0a2NGUzM2MFgwNmJmM1teVVCdz09>, Meeting ID: 85743328739, and Passcode: COCAS.

SEMINAR ON NATIONAL SCIENCE DAY



1-3-2021

The College organized a one- day seminar on the National Science Day on 1st March, 2021 at 11 am at Vanijya Sabhagar of the college campus. There were three lectures on the day. The first lecture was by Prof. N.K. Pandey, Department of Physics, University of Lucknow on ‘**Scientific Temper**’. The second lecture was by Smt. Pragya Nopani, New Delhi on ‘**Role of Observation in Scientific Inquiry**’ and the third lecture was by Prof. Rajmani Prasad Sinha, Former VC, Lalit Narayan Mithila University, Darbhanga on ‘**Raman Spectroscopy**’. The event was presided by Principal, Prof. Tapan Kumar Shandilya, the welcome address was given by Dr. B.C.Rai. Prof. Bindu Singh was the observer while Dr. Manoj Kumar II and Dr. Santosh Kumar were the moderators. The vote of Thanks was proposed by Dr. Smita Kumari. Overall, 164 participants participated in this seminar.





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College of Commerce, Arts & Science

Kankarbagh, Patna - 800020

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NATIONAL SCIENCE DAY CELEBRATION

On Monday, 1st March, 2021 at 11 A.M,

Venue :- Vanijya Sabhagar, College of Commerce, Arts & Science, Patna.

Program Schedule

Lecture - 1 "SCIENTIFIC TEMPER"

By Prof. N. K. Pandey, Department of Physics,
University of Lucknow.

Lecture - 2 "ROLE OF OBSERVATION IN SCIENTIFIC INQUIRY"

By Smt. Pragya Nopani, New-Delhi.

Lecture - 3 "RAMAN SPECTROSCOPY"

By Prof. Rajmani Prasad Sinha, Former V. C.,
Lalit Narayan Mithila University, Darbhanga.



WELCOME ADDRESS

Dr. B. C. Rai

VOTE OF THANKS

Dr. Smita Kumari

PRESIDED BY

Prof.(Dr.) Tapan Kumar Shandilya
Principal,

College of Commerce, Arts and Science, Patna.

OBSERVATION

Prof. Bindu Singh

MODERATION

Dr. Manoj Kumar II
Dr. Santosh Kumar



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SEMINAR ON UNION AND BIHAR BUDGET

2-3-2021

Gandhi Arth Parishad, Department of Economics of the college organized a seminar on Union and Bihar Budget on 2nd March, 2021 at 11.30 am. The faculty members and students of the Economics department were actively engaged in the program. Faculty members and students of other departments also participated in this symposium. The program was anchored by Sourabh Kumar, MA IIIrd Semester and vote of thanks was given by Soni Singh, MA IVth Semester. 57 participants participated in this seminar.

बजट में कृषि के लिए आवंटित राशि में की गई कटौती

■ सहारा न्यूज व्यूरो

पटना।

गंधी अर्थ परिषद कॉलेज ऑफ कॉमर्स अर्द्धस एंड साइंस, पटना के तत्वावधान में मंगलवार को बिहार और केंद्र सरकार के बजट पर परिचर्चा आयोजित किया गया। परिचर्चा की अध्यक्षता प्रधानाचार्य प्रो. तपन कुमार शान्दिल्य ने की। परिचर्चा में

कॉलेज ऑफ कॉमर्स अर्द्धस एंड साइंस में बिहार और केंद्र सरकार के बजट पर आयोजित परिचर्चा में बोले प्रोफेसर



अर्थशास्त्र विभाग के छात्र और छात्राओं ने केंद्र और राज्य के बजट के विभिन्न अंगों विशेष रूप से इंफ्रस्ट्रक्चर, वित्तीय पूंजी, कृषि, स्वास्थ्य, स्पेंडिंग और युवा जगत जैसे मुद्दों पर अपने विचार रखे।

प्रो. संजय पांडेय ने बिहार बजट की समीक्षा करते हुए कहा कि बजट में कृषि के लिए आवंटित फंड में कटौती की गई है। अपने अध्यक्षीय भाषण में प्रधानाचार्य प्रो.

कॉलेज ऑफ कॉमर्स में परिचर्चा के दौरान मौजूद अतिथि।

तपन कुमार शान्दिल्य ने केंद्रीय बजट में 'ज्ञान है, ज्ञान है' पर विशेष बल दिया गया है। शिक्षा की हिस्सेदारी सबसे अधिक है जबकि योजना मद का 60 प्रतिशत ग्रामीण अंचली के जीवन स्तर पर सुधार लाने पर खर्च होगा। उन्होंने कहा कि बिहार के बजट में रोजगार सृजन के लिए उद्योगों के विकास पर ध्यान दिया जाना चाहिए था। उन्होंने कहा

कि बिहार में कृषि आधारित उद्योगों की कमी संभावनाएं हैं।

परिचर्चा में अर्थशास्त्र विभाग की विभाग अध्यक्ष प्रो. रश्मि अखौरी, प्रो. मुदुला कुमारी, प्रो. वैकुण्ठ राय, प्रो. संगीता कुमारी, प्रो. एके भास्कर के अलावा अर्थशास्त्र विभाग के छात्र अभिषेक कुमार, कन्हैया कुमार, सौरभ कुमार, मुस्कान आनंद, राहुल

सिंह और ऋषभ राज ने बजट की खूबियों और खामियों पर विस्तार से प्रकाश डाला। कार्यक्रम का संचालन एमए तृतीय वर्ष सेमेस्टर के छात्र सौरभ कुमार ने किया जबकि भन्ववाद ज्ञान एमए चतुर्थ सेमेस्टर की छात्र सोनी सिंह ने किया। परिचर्चा में विभिन्न विभागों के शिक्षकों के अलावा बड़ी संख्या में छात्र-छात्राएं उपस्थित रहे।



रोजगार सृजन के लिए उद्योगों के विकास पर ध्यान दिया जाना चाहिए

पटना। कॉलेज ऑफ कॉमर्स, आर्ट्स एंड साइंस में गांधी अर्थ परिषद द्वारा मंगलवार को बिहार और केंद्र सरकार के बजट पर परिचर्चा का आयोजन किया गया। परिचर्चा के दौरान प्राचार्य प्रो. तपन कुमार शांडिल्य ने कहा कि केंद्रीय बजट में जान है जहान है पर विशेष बल दिया गया है। शिक्षा की हिस्सेदारी सबसे अधिक है जबकि योजना मद का 60 प्रतिशत ग्रामीण आबादी के जीवनस्तर पर सुधार लाने पर खर्च होगा। उन्होंने कहा कि बिहार के बजट में रोजगार सृजन के लिए उद्योगों के विकास पर ध्यान दिया जाना चाहिए था। उन्होंने कहा कि बिहार में कृषि आधारित उद्योगों की काफी संभावनाएं हैं। परिचर्चा में अर्थशास्त्र विभाग की विभागाध्यक्ष प्रो. रश्मि अखौरी, प्रो. मृदुला कुमारी, प्रो. वैकुण्ठ राय, प्रो. संगीता कुमारी, प्रो एके भास्कर भी मौजूद रहे।





SEMINAR ON INTERNATIONAL WOMEN'S DAY

8-3-2021

International Women's Day was celebrated in the Vanijya Sabhagar of the college on 8th March, 2021. This seminar was organized by the department of Economics and the department of History of the college in collaboration with the Centre for gender studies, Patna. The topic of the symposium was **Leadership: Achieving an Equal Future in a Covid-19 World**. The guest speakers of the program were Prof. Shefali Rai, Department of Political Science, Patna University and Prof. Bharti S. Kumar, Department of History (retired), Patna University. Overall, 148 participants participated in this seminar.





**SEMINAR ON “INSTITUTIONAL CHALLENGES AND OPPORTUNITIES AMIDST
AND POST COVID 19”**

16-3-2021

A seminar on “**Institutional challenges and opportunities amidst and post Covid 19**” was organised at the college on 16-3-2021. Prof. (Dr.) Rajvardhan Azad, Hon’ble Chairman Bihar State University Service commission was the chief guest along with Prof. (Dr.) Vijay Kant Das, member, Bihar State University Service Commission, Patna and Prof. (Dr.) Usha Prasad, member, Bihar State University Service Commission, Patna. 182 participants participated in this seminar.



INTERNATIONAL SEMINAR ON ENVIRONMENTAL DAY

5-6-2021



An international seminar on ‘Sustainable Development for Protection of Nature’ was organized by College of Commerce, Arts and Science in collaboration with Global Leader Foundation on World Environment Day. Padmashree M.H. Mehta, Ex-Vice Chancellor of Gujarat Agricultural University emphasized on protection of rivers. On this occasion, were present, the Principal of the college, Prof. Tapan Kumar Shandilya, Chairman of ASDI, A.I.Ajit, Chairman of Dangusham Cement Corporation, Mr. Dorgi Norbi, Chairman of Leader Foundation, Mr. Ramesh Tripathi. Among the audience were Miss Swati Gupta from Chandigarh, Mr. Dilip Kumar from University of Delhi, Prof. Aruni Kumar from Begusarai and all the Head of the departments along with other faculty members and students of the college. 139 participants participated in this seminar.

पर्यावरण और सामाजिक प्रबंधन जरूरी : शांडिल्य

पटना। विश्व पर्यावरण दिवस पर कॉलेज ऑफ कॉमर्स और ग्लोबल लीडर फाउंडेशन के संयुक्त तत्वावधान में शनिवार को सस्टेनेबल डेवलपमेंट फॉर प्रोटेक्शन ऑफ नैचर विषय पर अंतरराष्ट्रीय संगोष्ठी हुई। इसमें गुजरात एग्रीकल्चर यूनिवर्सिटी के पूर्व कुलपति पद्मश्री एमएच मेहता ने पर्यावरण संरक्षण के लिए नदी नवोन्मेष पर बल दिया। मौके पर प्रधानाचार्य प्रो. तपन कुमार शांडिल्य, एएसडीआई के चेयरमैन प्रो. आई अजित, डंगूशाम सीमेंट कारपोरेशन भूटान के चेयरमैन डोरगी नोरबी, ग्लोबल लीडर फाउंडेशन के चेयरमैन रमेश त्रिपाठी, दिलीप कुमार, चंडीगढ़ की स्वाति गुप्ता, बेगुसराय के प्रो. अरुणी कुमार, प्रो. रश्मि अखौरी, डॉ. बैकुंठ, प्रो. प्रवीण कुमार, प्रो. कीर्ति, प्रो. एके नाग, प्रो. सलोनी कुमार, डॉ. संगीता सिंहा उपस्थित थे।



पर्यावरण संरक्षण को प्रबंधन आवश्यक

पटना. कॉलेज ऑफ कॉमर्स और ग्लोबल लीडर फाउंडेशन के संयुक्त तत्वावधान में शनिवार को सस्टेनेबल डेवलपमेंट फॉर प्रोटेक्शन ऑफ नचर विषय पर अंतरराष्ट्रीय संगोष्ठी हुई. जूम के माध्यम से आयोजित संगोष्ठी में गुजरात एग्रीकल्चर यूनिवर्सिटी के पूर्व कुलपति पद्मश्री एमएच मेहता ने पर्यावरण के संरक्षण के लिए नदी नवोन्निवेश पर बल दिया. प्रधानाचार्य प्रो तपन कुमार शान्दिल्य ने पर्यावरण संरक्षण के विभिन्न उपायों का उल्लेख किया. संगोष्ठी को एएसडीआइ के चेयरमैन प्रो अजित, डंगूशाम सिमेंट कारपोरेशन भूटान के चेयरमैन डोरगी नोरबी, ग्लोबल लीडर फाउंडेशन के चेयरमैन रमेश त्रिपाठी समेत बड़ी संख्या में शिक्षक और छात्र उपस्थित थे.



एजुकेशनल न्यूज

शिक्षा ही सर्वोपरि

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पर्यावरण संरक्षण के लिए पर्यावरण और सामाजिक प्रबंधन आवश्यक – शांडिल्य

संवाददाता | एजुकेशनल न्यूज

अंतरराष्ट्रीय पर्यावरण दिवस पर अंतरराष्ट्रीय संगोष्ठी का आयोजन

पटना। विश्व पर्यावरण दिवस के अवसर पर कॉलेज ऑफ कॉमर्स और ग्लोबल लीडर फाउंडेशन के संयुक्त तत्वाधान में शनिवार को "सस्टेनेबल डेवलपमेंट फार् प्रोटेक्शन ऑफ नगर" विषय पर अंतरराष्ट्रीय संगोष्ठी का आयोजन किया गया। जूम के माध्यम से आयोजित संगोष्ठी को संबोधित करते हुए गुजरात एग्रीकल्चर यूनिवर्सिटी के पूर्व कुलपति पद्मश्री एम. एच. मेहता ने पर्यावरण के संरक्षण के लिए नदी नवोन्मेष पर बल दिया। संगोष्ठी को संबोधित करते हुए प्रधानाचार्य प्रो. तपन कुमार शांडिल्य ने पर्यावरण संरक्षण के विभिन्न उपायों का उल्लेख किया तथा पर्यावरण प्रबंधन, सामाजिक प्रबंधन तथा पालिटिकल इम्पैक्ट की आवश्यकता पर जोर दिया। संगोष्ठी को संबोधित करते हुए ए. एस. डी. आई. के चेयरमैन प्रो. ए. ई. अजित ने ग्रीन इन्फ्रास्ट्रक्चर तथा जीरो इनर्जी बिल्डिंग पर



विस्तार से प्रकाश डाला। इंगूशाम सिमेंट कारपोरेशन भूटान के चेयरमैन श्री डोरगी नोर्बी ने पर्यावरण संरक्षण के भूटान ग्रीन इन्फ्रास्ट्रक्चर की वकालत की। जबकि ग्लोबल लीडर फाउंडेशन के चेयरमैन रमेश त्रिपाठी ने नदियों को बचाने तथा बड़े पैमाने पर वृक्षारोपण की जरूरत पर जोर दिया। इस अवसर पर अन्य

लोगों के अलावा दिल्ली विश्वविद्यालय के दिलीप कुमार, चंडीगढ़ की स्वाति गुप्ता, बेगुराय के प्रो. अरुणी कुमार, प्रो. रश्मि अखौरी, डॉ. बैकुंठ, प्रो. प्रवीण कुमार, प्रो. कीर्ति, प्रो. ए. के. नाग, प्रो. सलोनी कुमार, डॉ. संगीता सिंहा और प्रो. अदिति समेत बड़ी संख्या में शिक्षक और छात्र - छात्राएं - उपस्थित थे।

WEBINAR ON INTERNATIONAL YOGA DAY

21-6-2021

College of Commerce, Arts and Science in collaboration with Shiksha Sanskriti Utthan Nyas organized a one-day national webinar on the topic 'YOG AND VIGYAN' on 21st June, 2021 from 1.00 to 3 pm. The program started with a introductory note by Dr. Harish Das, Assistant



Professor, Sanskrit department, Patna University with a yoga session by Dr. Vinayak Kumar Dubey and Dr. Ravikant Tiwari from BHU. Prof. Tapan Kumar Shandilya, the principal of the college was the chairperson and gave the presidential speech of the program while the Vote of Thanks was proposed by the IQAC Coordinator, Dr. Santosh Kumar. 189 participants participated in this seminar.



कॉलेज ऑफ़ कॉमर्स आर्ट्स एंड साइंस

एवं



भारतीय शिक्षा

देश बढतना हे, तो शिक्षा की बढती

शिक्षा संस्कृति उत्थान न्यास, बिहार प्रान्त

के सहयोग से

अंतर्राष्ट्रीय योग दिवस के अवसर पर "योग एवं विज्ञान" विषयक राष्ट्रीय वेबीनार

21st जून 2021, समय - दोपहर 1:00 - 3:00 बजे तक

TENTATIVE PROGRAMME SCHEDULE	
कार्यक्रम के प्रारम्भ में सरस्वती-वन्दना और अंत में कल्याण-मंत्र का गायन करेगी डॉ. साधना शर्मा, सहायक-आचार्य, व्याकरण-विभाग, कामेश्वर सिंह दम्भंग संस्कृत विश्वविद्यालय, दरभंगा	
 डॉ. हरीश दास सहायक आचार्य स्नातकोत्तर संस्कृत-विभाग पटना विश्वविद्यालय, पटना-800005	विषय प्रवेश - योग समय: 1:00-1:15
 डॉ. विनायक कुमार दुबे सहायक-आचार्य शारीरिक-शिक्षा विभाग काशी हिन्दू विश्वविद्यालय, वाराणसी-05	(प्रमुख-वक्ता) विषय : योगसन का वैज्ञानिक-दृष्टिकोण समय: 1:15-2:05
 डॉ. रविकान्त तिवारी योग-प्रशिक्षक छत्र-स्वास्थ्य कल्याण केन्द्र काशी हिन्दू विश्वविद्यालय, वाराणसी-05	(विभिन्न-वक्ता) विषय : अष्टाङ्ग-योग समय: 2:05-2:25
 डॉ. तपन कुमार शण्डिल्य प्रचार्य, कॉलेज ऑफ़ कॉमर्स आर्ट्स एंड साइंस, पटना	अध्यक्षीय भाषण समय: 2:25-2:55
 डॉ. संतोष कुमार संयोजक IQAC कॉलेज ऑफ़ कॉमर्स आर्ट्स एंड साइंस, पटना	धन्यवाद प्रस्ताव समय: 2:55-3:00pm



Registration : Pl send the Name, Affiliation and Whatsapp number in the email mentioned below
Google Meet - Meeting ID: <https://meet.google.com/mbd-aypf-sqr>
E-Certificate will be issued only to the registered participants
Whatsapp: 9431049871/ email: principalcocaspatna@gmail.com
Registration - https://docs.google.com/forms/d/1vtgfNRYX1eAJIXuU9o10g6_w5AIFfoiqqCapAXnAE0

Covid Vaccination Camp 01-07-2021

Covid Vaccination Camp was inaugurated by the principal of the college. Hundreds of students, faculties, staffs and others were vaccinated in the camp.

INAUGURATION OF SEHAT KENDRA

1-7-2021



Sehat Kendra was inaugurated in our college premises on 1st July, 2021. Vaccination for COVID was done for all age groups at this Sehat Kendra. All those who were not vaccinated were requested to get vaccinated. The Principal of the college inaugurated the occasion. This Sehat Kendra was inaugurated to ensure well-being of the students, teachers and staff members and provide timely medical assistance. The health centre is also intended to create awareness about Covid-appropriate behaviour, gender equality, HIV, AIDS and blood donation.





OVERCOMING THE CHALLENGES: BIHAR POPULATION PROSPECTS

11.07.2021 to 12.07.2021

On the occasion of World Population Day, 2021 P.G. Department of Geography in Collaboration with IQAC of College organized webinar on 11th and 12th July, 2021. The theme of the Population day for 2021 was “**The Impact of the Covid-19 Pandemic on Fertility**”. Based on above theme we based our webinar on “**Overcoming the Challenges: Bihar Population Prospects**”. Two speakers have presented their lectures:

Topic 1: “**The silent Killer and the Power of Prevention**” by **Dr. Prashant Kumar Singh**. Scientist ‘D’ (Population Studies), ICMR – National Institute of Cancer Prevention & Research (NICPR), Indian Council of Medical Research (ICMR), Dept. of Health Research, Ministry of Health & Family Welfare, GoI, New Delhi.

Topic 2: “**Population and Development in Bihar: Issues and Challenges**” by **Dr. U.V. Somayajulu**, President of Indian Association for The Study of Population (IASP), Vice President of Indian Association for Social Sciences and Health (IASSH), Co-Founder, CEO and Executive Director at Sigma Research and Consulting.

Total students joined the webinar through google meet link and attended the lecture. The lecture witnessed 95 students and 8 faculty members from different departments (total 103 participants). The topic being too interesting and multidimensional was particularly fascinating to the audience. The first speaker addressed the students on how substance abuse is dangerous and can be prevented. And the second speaker addressed the demographic detail of Bihar state and its development scenario in context to issues and challenges. At the end the question answer session was also conducted where students actively participated. The session received positive feedback from the participants. The event was well coordinated by teaching, non-teaching members and student volunteers of the Department of Geography.



COLLEGE OF COMMERCE, ARTS & SCIENCE, PATNA
A constituent unit of Patliputra University, Patna


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NAAC Re-Accredited
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COLLEGE OF COMMERCE, ARTS & SCIENCE, PATNA
(A Constituent Unit of Patliputra University, Patna, Bihar)
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On the occasion of **World Population Day: 2021**
P.G. Department of Geography in Collaboration with the IQAC of College
INVITES YOU ALL TO ATTEND THE WEBINAR
On 11th and 12th July, 2021
Theme: "Overcoming the Challenges: Bihar Population Prospects"

Topic 1: "The Silent Killer and The Power of Prevention"
11th July, 2021 (11:00 AM)

Topic 2: "Population and Development in Bihar: Issues and Challenges"
12th July, 2021 (2:00 PM)

Speaker 1  **Dr. Prashant Kumar Singh**
Scientist 'D' (Population Studies)
ICMR – National Institute of Cancer Prevention & Research (NICPR)
Indian Council of Medical Research (ICMR), Dept. of Health Research
Ministry of Health & Family Welfare, Govt. New Delhi

Speaker 2  **Dr. U.V. Somayajulu**
President of Indian Association For The Study of Population (IASP),
Vice President of Indian Association For Social Sciences And Health (IASSH),
Co-Founder, CEO and Executive Director at Sigma Research and Consulting

COCAS, Patna Pg. 1

Chairperson cum Principal
 **Prof. Tapan Kumar Shandilya**
College of Commerce, Arts & Science, Patna

Coordinator IQAC & NAAC
 **Dr. Santosh Kumar**
Associate Professor
Dept. of Physics, COCAS

Cowener	Coordinator	Organizing Secretary/ Moderator
		
Dr. Rashmi Ranjana HoD, Assistant Professor	Dr. Abhay Shankar Assistant Professor	Dr. Vidya Yadav Assistant Professor

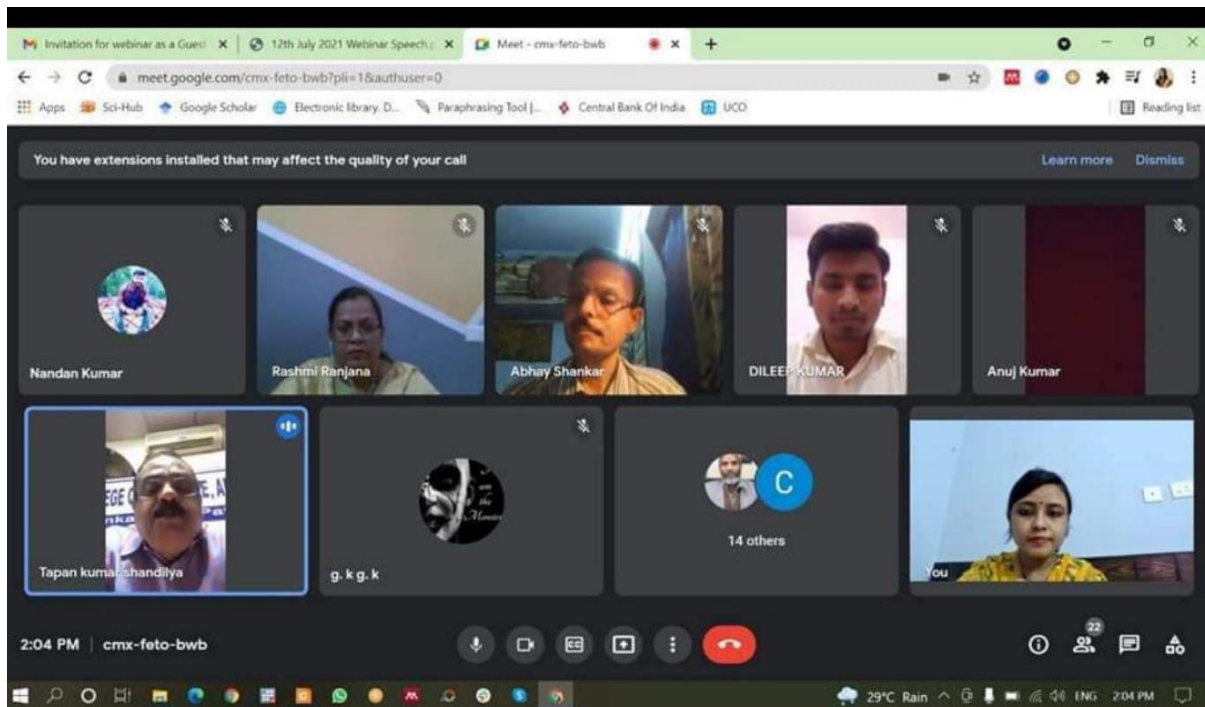
Advisory Committee Members:
1. Prof. Navin Chandra Sinha (Head, P.G. Dept. of Geography, Patliputra University)
2. Dr. Manoj Kumar (Associate Professor, P.G. Dept. of Geography, Patliputra University)
3. Dr. Anoop Kumar Singh (Associate Professor, P.G. Dept. of Geography, Patliputra University)

Programme flow

1. Inaugural address & welcome speech by Moderator
2. Address by Chairperson
3. Speech by Expert Speaker
4. Discussion session
5. Vote of thanks

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COCAS, Patna Pg. 2





देश में छिड़ी जनसंख्या वृद्धि पर बहस, प्रधानाचार्य प्रो. तपन कुमार खाडिल्य बोते, जनसंख्या वृद्धि रोकने व रोजगार बढ़ाने के लिए रोड मैप की आवश्यकता



विश्व जनसंख्या दिवस के उपलक्ष्य में कॉलेज ऑफ कॉमर्स, आईएस एफ्टीएस, पटना के सहकार्यीय भूवैज्ञानिक विभाग और आइ-एन-ए-ए-सी-ए-सी के संयुक्त आयोजन में आयोजित हो दिवसीय वैश्वीकरण कार्यक्रम को सम्पन्न हो गया। "ओपरेटिविंग द वैश्वीकरण: विद्यार्थी पायुर्वेचन प्रोसेसिंग" विषय पर आयोजित हो दिवसीय ऑनलाइन कैंबेजार की अध्यक्षता करते हुए प्रिंसिपल प्रो. तपन कुमार खाडिल्य ने विद्यार्थी को उत्साही की राह पर आगे ले जाने के लिए जनसंख्या के दृष्टिकोण उपयोग और कृषि आधारित पर बात देते हुए कहा कि इस के लिए सरकार को एक रोजगार योजना बनाना महत्वपूर्ण उपयोग के लिए निवेश करना चाहिए ताकि लोगों को रोजगार में ही रोजगार उपलब्ध हो सके।

उन्होंने बताया कि रोजगार तथा आर्थिक स्थिति में इसके उपयोग के कारण कृषि की भारतीय आवश्यकता का मूल्यांकन

UNWFP: 2020-21 on population growth in the country

जनसंख्या वृद्धि पर बहस, प्रधानाचार्य प्रो. तपन कुमार खाडिल्य बोते, जनसंख्या वृद्धि रोकने व रोजगार बढ़ाने के लिए रोड मैप की आवश्यकता

महान बताया है। यह एक प्रतिष्ठित कार्यक्रम को रोजगार उपलब्ध कराने और विद्यार्थियों के अधिक लोगों को उत्साह देता है। यह केवल एक ही उपलब्ध में इसका योजना वर्ष 2008-07 में लगभग 38.5 प्रतिशत है। यह काफी सामग्री का भी एक महत्वपूर्ण खोज है काफी अधिक औद्योगिक उपकरणों विभिन्न उद्योग, कौशल, कृषि आधारित तथा अन्य प्रकार की उपलब्धता यद्यपि के लिए इसकी शर्तों को देना है।

वैश्वीकरण को संश्लेषित करते हुए आई-सी-एन-ए-सी-ए-सी के वैश्वीकरण कार्यक्रम प्रमुख प्रो. तपन कुमार खाडिल्य ने भारतीय जनसंख्या, आर्थिक, वैश्वीकरण, टीसी, इनमें एक ही संश्लेषित विकास के साथ व संश्लेषित, सफल अर्थिक होने वाली वैश्वीकरण व उनके दुष्प्रभाव को रोकना से प्रस्ताव दिया।

आईएसएफ्टीएस के प्रिंसिपल डॉ. यू. बी. सोमनाथु ने विद्यार्थी जनसंख्या और विकास से संबंधित मुद्दों एवं चुनौतियों के बारे में बताया हुए मान्य एवं संश्लेषित के दृष्टिकोण उपयोग पर बात किया। उन्होंने कौशल, वैश्वीकरण, वैश्वीकरण, परिवार नियोजन, मातृ स्वास्थ्य एवं मातृ स्वास्थ्य अर्थिक मुद्दों पर चर्चा की जो कि के प्रस्ताव को रोकने तथा राज्य में परिवारों की रोजगार उपलब्ध करने के लिए उन्होंने कृषि आधारित उद्योगों के साथ-साथ उद्योगिक आधारित उद्योगों, कृषि प्रोसेसिंग, वेमई, स्वास्थ्य उद्योगों, अर्थिक विकास का सुझाव दिया। हेल्थ केयर सेक्टर में सुधार के साथ हेल्थ इंफ्रेस्ट्रक्चर को बढ़ाने की आवश्यकता बताई।

कैंबेजार का संश्लेषण डॉ. विद्या साहय ने किया। संश्लेषण सफल भूवैज्ञानिक विभाग के डॉ. रवि कुमार ने किया। कैंबेजार में आइ-एन-ए-ए-सी-ए-सी के अध्यक्ष प्रोफेसर डॉ. तपन कुमार, कुलपति डॉ. मनीष कुमार, सहकार्यीय भूवैज्ञानिक विभाग के डॉ. अजय कुमार सिंह, पटना विश्वविद्यालय के भूवैज्ञानिक विभाग के प्रोफेसर अजय कुमार, प्रोफेसर रवि कुमार, डॉ. ए. ए. खाडिल्य की डॉ. विनीत प्रसाद और डॉ. अमर निवास अर्थिक चर्चा विद्यार्थी ने भाग लिया प्रिंसिपल ने कड़ी संकाय में विद्यार्थी और छात्र - छात्राओं ने भाग लिया।

कॉलेज ऑफ कॉमर्स के प्रधानाचार्य तपन कुमार खाडिल्य बोते, जनसंख्या वृद्धि में गुणात्मक सुधार लाने की आवश्यकता



विश्व जनसंख्या दिवस पर कॉलेज ऑफ कॉमर्स, आईएस एफ्टीएस पटना के भूवैज्ञानिक विभाग और आइ-एन-ए-सी-ए-सी के संयुक्त आयोजन में आयोजित हो दिवसीय वैश्वीकरण कार्यक्रम को सम्पन्न हो गया। "ओपरेटिविंग द वैश्वीकरण: विद्यार्थी पायुर्वेचन प्रोसेसिंग" विषय पर हो दिवसीय ऑनलाइन कैंबेजार का अध्यक्षता किया गया।

वैश्वीकरण की आवश्यकता प्रधानाचार्य प्रो. तपन कुमार खाडिल्य ने बोली। उन्होंने भारत में कौशल से बढ़ा रही जनसंख्या पर चिंता व्यक्त की तथा इसकी निवारण करने की बात कही है। इस अवसर पर अपने अध्यक्षीय संबोधन में प्रो. खाडिल्य ने जनसंख्या वृद्धि में गुणात्मक सुधार लाने की आवश्यकता पर बात देते हुए इसे राष्ट्रीय विकास में कड़ी बाधा बताया।

भारत में जनसंख्या वृद्धि में गुणात्मक सुधार लाने की आवश्यकता

भारत में जनसंख्या वृद्धि में गुणात्मक सुधार लाने की आवश्यकता पर और देते हुए, उन्होंने कहा कि संश्लेषण एक बहुत महत्वपूर्ण खोज है। भारत में विकास की गति की अर्थिक जनसंख्या वृद्धि

UNWFP: 2020-21 on population growth in the country

जनसंख्या वृद्धि पर बहस, प्रधानाचार्य प्रो. तपन कुमार खाडिल्य बोते, जनसंख्या वृद्धि रोकने व रोजगार बढ़ाने के लिए रोड मैप की आवश्यकता

एन-ए-सी-ए-सी-ए-सी के संयुक्त आयोजन में आयोजित हो दिवसीय वैश्वीकरण कार्यक्रम को सम्पन्न हो गया। "ओपरेटिविंग द वैश्वीकरण: विद्यार्थी पायुर्वेचन प्रोसेसिंग" विषय पर आयोजित हो दिवसीय ऑनलाइन कैंबेजार का अध्यक्षता किया गया। उन्होंने भारत में कौशल से बढ़ा रही जनसंख्या पर चिंता व्यक्त की तथा इसकी निवारण करने की बात कही है। इस अवसर पर अपने अध्यक्षीय संबोधन में प्रो. खाडिल्य ने जनसंख्या वृद्धि में गुणात्मक सुधार लाने की आवश्यकता पर बात देते हुए इसे राष्ट्रीय विकास में कड़ी बाधा बताया।



वैश्वीकरण को संश्लेषित करते हुए आई-सी-एन-ए-सी-ए-सी के वैश्वीकरण कार्यक्रम प्रमुख प्रो. तपन कुमार खाडिल्य ने भारतीय जनसंख्या, आर्थिक, वैश्वीकरण, टीसी, इनमें एक ही संश्लेषित विकास के साथ व संश्लेषित, सफल अर्थिक होने वाली वैश्वीकरण व उनके दुष्प्रभाव को रोकना से प्रस्ताव दिया।



Premchand jayanti was celebrated in the college campus on 31st July, 2021. Premchand was an Indian writer famous for his modern Hindustani literature and was also a pioneer of Hindi and Urdu literature. This program was organised by the department of Hindi of the college. The coordinator of the program was Dr. B.K.Mangalam, Associate Professor, Department of Hindi. The chief guest of the program, Prof. Surendra Pratap Singh, VC, Patliputra University inaugurated the program and threw light on the famous Indian author, Premchand.



SEMINAR ON EVOLUTION OF AN EDUCATIONAL INSTITUTION



5-9-2021

Foundation day of the college was organized in the Indu Shekhar Jha Memorial Hall of the college. The Principal of the college, Prof. Tapan Kumar Shandilya commenced the program with his introductory speech while the DSW of the Patliputra University, Prof. A.K.Nag welcomed the guest of honours. The guest speakers for the occasion were renowned Padmashree Dr. C.P. Thakur, former member of Rajya Sabha, physician and a leader of BJP along with the eminent Indian experimental physicist, author and emeritus professor of the Indian Institute of Technology Kanpur, Padmashree Prof. H.C.Verma. They emphasized that educational institutions like colleges are a temple and a source of power but he was dejected that education today, is not connecting students with the real world and its problems. Prof. H.C. Verma also implanted a tree in the campus. The stage organiser of the program was Prof. Saloni while the vote of Thanks was proposed by Prof. Kirti. The hall was full with the distinguished teachers, students and staff of the college. 217 participants participated in the seminar.

छात्र अपने लक्ष्य के प्रति प्रतिबद्ध हों : डॉ. सीपी ठाकुर

पटना (आससे)। पूर्व केंद्रीय मंत्री डॉ. सी पी ठाकुर ने छात्रों में व्यावहारिक शिक्षा के साथ साथ तकनीकी शिक्षा और देश भक्ति की भावना को

करते हुए आई आई टी कानपुर के प्रोफेसर पद्मश्री डॉ. एच सी वर्मा ने कहा कि शिक्षण संस्थान जीवन की शक्ति का स्रोत होता है और भारतीय संस्कृति

ले कर आती हैं। कार्यक्रम की अध्यक्षता प्रधानाचार्य प्रो. तपन कुमार शान्दिल्य ने की। अपने अध्यक्षीय भाषण में प्रो. शान्दिल्य ने कहा कि पंडित इंदू शेखर झा विकट परिस्थितियों में राज्य में कामर्स की शिक्षा के विकास के उद्देश्य से इस महाविद्यालय की स्थापना की और वर्तमान में इस महाविद्यालय में कामर्स के साथ साथ विज्ञान, कला के आलावा व्यवसायिक कोर्सों की पढ़ाई हो रही है। उन्होंने कहा कि कालेज में गुणवत्ता पूर्ण शिक्षा और योग्य शिक्षकों के कारण महाविद्यालय को नैक से **कएक** ग्रेड प्राप्त है। इस से पहले पाटलिपुत्र विश्वविद्यालय के डीएसडब्ल्यू प्रो. ए. के. नाग ने अतिथियों का स्वागत किया। मंच का संचालन प्रो. सलोनी कुमार न जबकि धन्यवाद ज्ञापन प्रो. कीर्ति ने किया। इस अवसर पर अन्य लोगों के अलावा प्रो. संतोष कुमार, कुलानुशासक डॉ. मनोज कुमार, शिक्षक संघ के सचिव डॉ. ए. के. भास्कर, प्रो. के. वी. पद्मदेव, प्रो. राजीव रंजन, प्रो. कंचना सिंह, प्रो. अशुतोष कुमार सिन्हा, पुस्तकालय अध्यक्ष उपेन्द्र कुमार, विनोद कुमार सिंह, संजीव तिवारी समेत बड़ी संख्या में शिक्षक शिक्षकेतर कर्मचारी तथा छात्र छात्राएं उपस्थित थे। इस अवसर पर प्रो. एच. सी. वर्मा ने महाविद्यालय में वृक्षारोपण भी किया।



जागृत करने की आवश्यकता पर बल दिया। वे सोमवार को कालेज आफ कामर्स आर्ट्स एण्ड साइंस पटना के 72 वें स्थापना दिवस के अवसर पर आयोजित पंडित इंदू शेखर झा स्मृति व्याख्यान को संबोधित कर रहे थे। उन्होंने कहा कि विकट परिस्थितियों में भी उन्हें अपने लक्ष्य की प्राप्ति के लिए प्रतिबद्ध होना चाहिए। व्याख्यान को संबोधित

में इसे मंदिर भी कहा जाता है। उन्होंने कहा कि जिस तरह मंदिरों में सिर्फ मूर्तियों का दर्शन होता भगवान का नहीं उसी तरह आज ज्यादातर शिक्षण संस्थानों में सत्य के दर्शन नहीं हो रहे हैं। उन्होंने कहा कि हम पढ़ाई को जिन्दगी के साथ कनेक्ट नहीं कर पा रहे हैं। उन्होंने कहा कि जीवन में कठिनाईयां होंगी तभी अवसर प्राप्त होगा क्योंकि कठिनाईयां अवसर



GIS LAB INAUGURATION

7-9-2021

The GIS (Geographic Information System) Laboratory was inaugurated in the Geography Department of the college under the headship of Dr. Rashmi Ranjana and the Principal of the college, Prof. Tapan Kumar Shandilya. Among all the colleges of the University, our college is the pioneer in having this software which has been designed by ISRO. Many of the faculty members and students of the college were present on this occasion.

**कॉलेज ऑफ कॉमर्स में
आइजीआइएस लैब शुरू
पटना.** कॉलेज ऑफ कॉमर्स, साइंस
एवं आर्ट्स के स्नातकोत्तर भूगोल
विभाग में भौगोलिक सूचना प्रणाली के
नये सॉफ्टवेयर आइजीआइएस का
मंगलवार को प्राचार्य प्रो तपन कुमार
शांडिल्य ने उद्घाटन किया.
सॉफ्टवेयर को इसरो द्वारा डिजाइन कर
विकसित किया गया है. इस अवसर
पर बड़ी संख्या में शिक्षक और छात्र-
छात्राएं उपस्थित थे.



COLLEGE OF COMMERCE, ARTS & SCIENCE, PATNA
A constituent unit of Patliputra University, Patna

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P.G. DEPARTMENT OF GEOGRAPHY
College of Commerce, Arts & Science
CORDIALLY INVITES YOU ALL FOR THE



INAUGURATION OF THE GIS LAB
BY
PROF. TAPAN KUMAR SHANDILYA



Principal, College of Commerce, Arts & Science, Patna
On Tuesday, 7th September, 2021
at 11:30 A.M.



Dr. Abhay Shankar
Assistant Professor,

Dr. Vidya Yadav
Assistant Professor

Dr. Rashmi Ranjana
Head & Assist. Professor
P. G. Dept. of Geography
COCAS, Patna





समाचार सार

कालेज ऑफ कामर्स के भूगोल विभाग में नए आईजीआईएस लैब का उद्घाटन

पटना। प्रधानाचार्य प्रो तपन कुमार शान्दिल्य ने मंगलवार को कालेज आफ कामर्स आर्ट्स एण्ड साइंस के स्नातकोत्तर भूगोल विभाग में भौगोलिक सूचना प्रणाली के नए साफ्टवेयर आईजीआईएस का उद्घाटन किया। इस साफ्टवेयर को इसरो द्वारा डिजाइन कर विकसित किया गया है। इस अवसर पर अपने संबोधन में प्रो. शान्दिल्य ने कहा कि यह पाटलिपुत्र विश्वविद्यालय का पहला महाविद्यालय है जहां जीआईएस जैसे अत्याधुनिक साफ्टवेयर की सुविधा से लैस लैब की शुरुआत की गई है।

अपने अध्यक्षीय भाषण में विभागाध्यक्ष डॉ रश्मि रंजना ने बताया कि भौगोलिक सूचना प्रणाली एक ?सी प्रणाली है जो सभी प्रकार के आंकड़ों का निर्माण, प्रबंधन, विश्लेषण और मानचित्रण करता है। इस अवसर पर अन्य लोगों के अलावा डॉ अभय शंकर, डॉ. मनोज कुमार, डॉ. संतोष कुमार, डॉ. के. बी. पद्मदेव, प्रो. कीर्ति, डॉ. ए. के. भास्कर, उपेन्द्र कुमार समेत बड़ी संख्या में शिक्षक और छात्र छात्राएं उपस्थित थे।





SEMINAR ON BHARATENDU HARISHCHANDRA JAYANTI

9-9-2021

A symposium on Bharatendu Jayanti was organised by IQAC, College of Commerce, Arts & science, Patna on 9th September, 2021. The principal of the college, Prof. Tapan Kumar Shandilya delivered a lecture on Bharatendu Harishchandra Jayanti. 66 participants participated in this seminar.



SEMINAR ON 21ST NATIONAL LEADERS SUMMIT & EXCELLENCE AWARD

25-9-2021 and 26-9-2021

21st National Leaders Summit & Excellence Award-2021 ceremony was organised by College of Commerce, Arts & Science, Patna with Global Leaders Foundation, Delhi. It was a two-day seminar. The theme of the seminar was **Transformational Reforms in Nation Building**. Teachers and students of our college as well as from other colleges participated in this seminar. Total 216 participants participated and all the participants were given certificates.



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SEMINAR ON ROLE OF SOCIETY IN THE PRESERVATION OF MONUMENTS

4-10-2021

Padmashree KK Muhammed a well-known archaeologist visited our college and gave a keynote address in a seminar organised by the Department of History, College of Commerce, Arts & Science, Patna and Itihas Sankalan Samiti, Patna on the topic 'Role of Society in the Preservation of Monuments'. Presenting his lecture on Bateshwar Temple Complex, Muraina, Madhya Pradesh, where he had collected the scattered remains of the history in the form of broken stone pillars of the temples of the bygone days. After a long, strenuous and tedious time spent on the complex he finally managed to bring it back to its old pristine glory. The romance of the story and the irony of the situation lies in the fact that the entire area was dacoits infected and the place was more or less in their control and one cannot venture into the area / region without taking them into the confidence.



However, he succeeded in his historical and archaeological enterprise and handed over the restored heritage site to the ASI and the locals for future preservation, protection and maintenance. 232 participants participated in this seminar.



SEMINAR ON MENTAL HEALTH DURING COVID-19 PANDEMIC



8-10-2021

Department of Psychology in collaboration with IQAC celebrated Mental Health Awareness Month on 08.10.2021 and organized a seminar on the topic “Corona Kaal Mein Mansik Swasthya” shading the light on the mental health issues during COVID-19 era and strategies to maintain mental health. Dr. Rajesh Kumar, Professor & Head, Department of Psychiatry, IGIMS, Patna shared his views on the topic: Mental Health in Times of COVID-19 Pandemic while Ms. Priya Kumar, Clinical Psychologist, IGIMS, Patna discussed on the topic: Coping with Mental Health Issues During the Pandemic. The programme co-ordinator was Prof.(Dr.) Kirti-H.O.D., Dept. of Psychology, COCAS, Patna, the convenor was Prof. Jai Mangal Deo, co-convenor was Dr. Pranay Gupta and the program was moderated by Dr. Vandana Maurya, and Dr. Pranay Gupta, Dept of Psychology, COCAS, Patna. 130 participants participated in this seminar.



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COLLEGE OF COMMERCE, ARTS AND SCIENCE, PATNA

Department of Psychology & IQAC

Celebrating Mental Health Awareness Month
Seminar: "Mental Health During COVID-19 Pandemic"

“कोरोना काल में मानसिक स्वास्थ्य”

Date: 08th October, 2021 | Time: 11.00 AM to 1.00 PM

Venue: Vanijya Sabhagar, COCAS, Patna-20





OUR SPEAKERS



Dr. Rajesh Kumar
Professor & Head,
Department of Psychiatry, IGIMS, Patna
Topic: Mental Health in Times of COVID-19
Pandemic



Ms. Priya Kumar
Clinical Psychologist, IGIMS, Patna
Topic: Coping with Mental Health Issues
During the Pandemic

PATRON



Prof. Tapan Kumar Shandilya
Principal, College of Commerce, Arts
and Science, Patna

Programme Co-ordinator: Prof.(Dr.) Kirti-H.O.D., Dept. of Psychology, COCAS, Patna

Convenor: Prof. Jai Mangal Deo, Dept. of Psychology, COCAS, Patna

Co-Convenor: Dr. Pranay Gupta, Dept of Psychology, COCAS, Patna

Moderators: Dr. Vandana Maurya, Dept. of Psychology, COCAS, Patna
Dr. Pranay Gupta, Dept of Psychology, COCAS, Patna



SEMINAR ON INTERCONNECTION AND ERADICATION OF PHYSICAL AND MENTAL POLLUTION

22-10-2021

A talk was delivered on 22nd October, 2021 in the college campus (conference hall) by Sh. B.K. Bharat Bhushan ji, National Co-ordinator, Scientists and Engineering wing, Brahmakumari Ishwariya Vishwavidyalaya. He deliberated on the topic “Interconnection and eradication of physical and mental pollution “. The chairperson of the program was Prof. Tapan Kumar Shandilya, Principal of the college. It was a fulfilling experience for the audience.





कालेज आफ कामर्स में मनी विवेकानंद की जयंती

जासं, पटना : राष्ट्रीय युवा दिवस के अवसर पर कालेज आफ कामर्स आर्ट्स एंड साइंस पटना में बुधवार को स्वामी विवेकानंद की जयंती पर संगोष्ठी का आयोजन किया गया। कालेज के प्राचार्य प्रो. तपन कुमार शान्दिल्य ने युवाओं को स्वामी जी के आदर्शों पर अमल करने की सलाह दी। उन्होंने कहा कि वर्तमान दौर में स्वामी विवेकानंद के विचारों की प्रासंगिकता और बढ़ गई है।

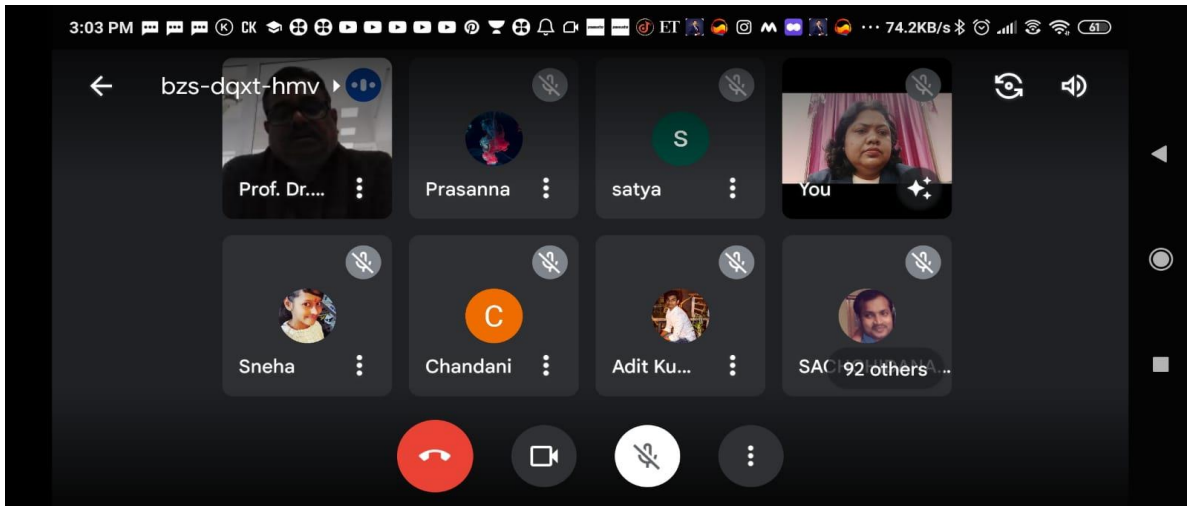
स्वामी विवेकानंद के आदर्शों को अपनाने की जरूरत : प्राचार्य

पटना। राष्ट्रीय युवा दिवस पर कॉलेज ऑफ कॉमर्स आर्ट्स एंड साइंस में बुधवार को स्वामी विवेकानंद की जयंती पर संगोष्ठी हुई। अध्यक्षता करते हुए प्रधानाचार्य प्रो. तपन कुमार शान्दिल्य ने युवाओं को स्वामी जी के आदर्शों को अपनाने की सलाह दी। उन्होंने कहा कि वर्तमान दौर में स्वामी विवेकानंद के विचारों की प्रासंगिकता और बढ़ गई है। स्वामी विवेकानंद ने मानव जीवन की विभिन्न समस्याओं पर गहन चिंतन किया था। उनके चिंतन क्षेत्र में कर्म, दर्शन, सामाजिक एवं राजनीतिक व्यवस्था, शिक्षा प्रणाली, महिलाओं की स्थिति और राष्ट्र का सम्मान शामिल थे। वनस्पति विभागाध्यक्ष प्रो. मनोज कुमार ने कहा कि युवाओं को स्वामी जी की शिक्षा को अपना कर देश और समाज के विकास में अपनी भूमिका निभानी चाहिए। इस अवसर पर विनोद कुमार सिंह, छात्र नेता नन्हक यादव और हिमांशु यादव ने भी विचार व्यक्त किए।

Netaji Subhas Chandra Bose Jayanti Parakram Diwas

23.01.2022

Prakram Diwas was celebrated in the chairmanship of Principal, COCAS. Many students gave speech on Subhash Chandra Bose in the webinar.





73th Republic Day Celebration

Date: 26th January 2022

The college of Commerce, Arts & Science, Patna celebrated the 73rd Republic Day vigorously. NCC, NSS and the college community participated enthusiastically.



Painting competition

22.02.2022



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Participated in State level painting competition organised by BSACS, at Shaheed Veer Kunwar Singh park, Patna. The theme of the competition was HIV/AIDS and Blood donation.





Felicitation of Sportspersons of the College

Date: 25th February 2022

The college sportspersons were felicitated. It was realised to promote sports culture in the college and society.



Seminar on Self-reliance through Productivity

Date: 26th February 2022



The college organized a seminar in association with Bihar State Productivity Council on the topic “Self-reliance through Productivity” dt. 26.02.2022. 63 participants participated in this event.



World Wildlife Day

Date: 3rd March 2022

College of Commerce, Arts & Science, Patna was celebrated World Wildlife Day on 3rd March 2022. A talk on “Cancer awareness” was delivered by Padmashree Prof. Prof. J.K. Singh. Principal of this college had been facilitated to the speaker with memento. 184 participants participated in this event.



Talk on Cancer Awareness

3/03/2022

lecture on "Cancer Management: Present Perspective & Future Direction." In a significant collaborative effort, the PG Department of Zoology at Patliputra University, Patna and the Department of Zoology,



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College of Commerce, Arts & Science, organized a compelling event on Cancer Awareness. The event was graced by Padma Shri Dr. Jitendra Kumar Singh, a distinguished expert in the field, who delivered an enlightening lecture on "Cancer Management: Present Perspective & Future Direction."

Dr. Jitendra Kumar Singh's lecture provided valuable insights into the current state of cancer management and the anticipated advancements in the field. His expertise and experience shone through as he highlighted crucial aspects of cancer care and research. Prof. R. K. Singh, Vice Chancellor of Patliputra University, as the Chief Guest, stressed and emphasized on the academic and institutional importance of various awareness programmes.

Interestingly, this date coincided with World Wildlife Day, so general discussion also took place on this theme. The vice-chancellor Prof RK Singh was the chief guest on this occasion.

The programme was attended by students, faculty, and enthusiasts eager to expand their understanding of cancer management and raise awareness about this pressing health issue. The event not only promoted knowledge dissemination but also facilitated a platform for collaboration and exchange of ideas in the pursuit of effective cancer care. Such initiatives play a vital role in empowering the community with information that can lead to early detection, prevention, and ultimately, better outcomes in the battle against cancer. 184 participants participated in this event.





कैंसर से बचाव के लिए जागरूकता जरूरी

पटना. पाटलिपुत्र विश्वविद्यालय के कुलपति प्रो आरके सिंह ने कहा कि कैंसर से बचाव के लिए लोगों को इस रोग के कारण और बचाव के उपायों के प्रति जागरूक करने की जरूरत है . वे गुरुवार को पाटलिपुत्र विश्वविद्यालय जीव विज्ञान और कॉलेज ऑफ कॉमर्स रंजीव विज्ञान के संयुक्त तत्वावधान में आयोजित कैंसर जागरूकता कार्यक्रम को संबोधित कर रहे थे . उन्होंने कहा कि कैंसर की शुरुआत में ही पहचान होने पर उसका इलाज संभव है और रोगी की जान बचायी जा सकती है . कार्यक्रम को संबोधित करते हुए प्रिंसिपल प्रो तपन कुमार शांडिल्य ने छात्रों से आग्रह किया कि वह लोगों को कैंसर के प्रति जागरूक करने में भागीदारी सुनिश्चित कर पीड़ित लोगों की सेवा करें . कैंसर विशेषज्ञ डॉ जेके सिंह ने कहा कि सर्वाइकल कैंसर से बचाव के लिए टीका उपलब्ध है और यह नौ वर्ष से उन्नीस वर्ष की लड़कियों पर कारगर है .

कैंसर जैसी बीमारी से बचा जा सकता है - कुलपति आरके सिंह, पाटलिपुत्र विश्वविद्यालय



संस्कार | लुधियाना न्यूज

आज कॉलेज में स्वास्थ्यचेतन जंतु विज्ञान विभाग पाटलिपुत्र एवं स्वास्थ्यचेतन जंतु विज्ञान विभाग कॉलेज ऑफ कॉमर्स के संयुक्त रूप से "कैंसर जागरूकता" विभाग पर सेमिनार का आयोजन किया गया। इस सेमिनार के मुख्य अतिथि एवं संप्रदायक कर्ता प्रोफेसर अरुणोदय सिंह, कुलपति, पाटलिपुत्र विश्वविद्यालय थे। सेमिनार के मुख्य वक्ता पदवी डॉ० विवेक कुमार सिंह, डॉ० मिहिरा, महावीर कैंसर संस्थान पटना थे। इस अवसर पर बोले हुए पाटलिपुत्र

विश्वविद्यालय के कुलपति प्रोफेसर आरके सिंह ने जनसमुदाय के सदस्य पर जीवविज्ञान और कहा कि कैंसर का जन्म पत लगाने से जन्म कायांजंजं हो सकती है। पदवी डॉ० विवेक कुमार सिंह में विभिन्न प्रकार के कैंसर और उनके कारणों के बारे में बताया। उन्होंने यह भी कहा कि नर्सों को भी कैंसर रोकथाम के लिए फैसलें का कार्य संचार है। 19 वर्ष से 19 वर्ष की उम्र की लड़कियों को फैसलें बचाने का काम है, 19 वर्ष उम्र का कार्य प्रारंभ हो सकता है। कॉलेज के प्रचार प्रसार डॉ० लज्जा कुमार साहिल्य ने आयोजन शुभकामना में बताया कि कैंसर जागरूकता अभियान गति से चल रहा है।



को इस बीमारी से बचाव जा सकता है। सभी युवा का प्रयोग करे, यह बुरी उदाहरण है और यह भीम में कैंसर का रूप धारण कर सकता है। ज्ञान विभागका प्रोफेसर विदु सिंह ने अधिकारी का स्वागत करते हुए विभाग पर प्रकाश डाला। ज्ञानों से कैंसर के कारणों के बारे में जागरूकता फैलाने के लिए एक और परामर्शक डॉ० एन पीरारट व पीडिए प्रोफेसरिता का भी आयोजन स्वास्थ्यविभाग में किया गया। अंत में अल्लखन डॉ० रंजित शर्मा के द्वारा कैंसर तथा एवं सम्बन्धित प्रश्न प्रोफेसर रंजित शर्मा द्वारा किया गया।



International Women's Day

08.03.2022

An awareness rally was organized in the college premises.





Session on Importance of Helmet

10.03.2022

A session on importance of helmet was organized in the college with the collaboration of times group. In this session, the resource person discussed on importance of helmet to save life. The session was very interactive and students promised to wear helmet properly.



National Webinar organised on “Vision, Structure and Assessment System in Higher Education with reference to National Education Policy (2020): Challenges in Implementation”.



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Date: 15th March 2022

The NEP 2020 is the first education policy of the 21st century and replaces the thirty-four year old National Policy on Education (NPE), 1986. Built on the foundational pillars of Access, Equity, Quality, Affordability and Accountability, this policy is aligned to the 2030 Agenda for Sustainable Development and aims to transform India into a vibrant knowledge society and global knowledge superpower by making both school and college education more holistic, flexible, multidisciplinary, suited to 21st century needs and aimed at bringing out the unique capabilities. 191 participants participated in this event.

National Webinar on 15th March 2022

"Vision, Structure and Assessment System in Higher Education with Reference to National Education Policy (2020): Challenges in Implementation"

Patron: Dr. Pragyesh Kumar Agrawal, Director, Institute for Excellence in Higher Education, Bhopal, Madhya Pradesh, Chair Person

Chief Guest: Prof. Dipak Kumar Sharma, Vice Chancellor, Kumar Bhaskar Varma Sanskrit and Ancient Studies University, Nalanda, Assam

Special Guest: Prof. Tapan Kumar Shandilya, Former Vice-Chancellor and Professor in Economics, Principal, College of Commerce, Art and Science, Patliputra University, Invited speaker

Convener: Prof. Mahipal Singh Yadav, Chairman, Examination Cell, Institute for Excellence in Higher Education, Bhopal, Madhya Pradesh

Organising Secretary: Dr. Ran Krishna Shrivastava, Deputy Controller, Examination Cell, Institute for Excellence in Higher Education, Bhopal, Madhya Pradesh, Invited speaker; Dr. Mahendra Singhai, Deputy Controller, Examination Cell, Institute for Excellence in Higher Education, Bhopal, Madhya Pradesh

Joint Secretary: Dr. Makhani Singh Chauhan, Assistant Controller, Examination Cell, Institute for Excellence in Higher Education, Bhopal, Madhya Pradesh; Dr. Sahakant Dwivedi, Assistant Controller, Examination Cell, Institute for Excellence in Higher Education, Bhopal, Madhya Pradesh

Institute for Excellence in Higher Education (IEHE)
Kalyanpur Dam, Kolar Road, Bhopal, M.P., 462018 Ph. No., 0731-262423, 0731-262500, E-Mail: ieh@iuehe.org.in, Website: <https://www.iehe.ac.in>

Seminar on Rural Study Camp organized by Bihar Mathematical Society

Date: 23rd March 2022

A seminar on Rural Study Camp was organized by Bihar Mathematical Society and College of Commerce Arts and Science, Patna on Wednesday. The vice-chancellor of Nalanda Open University Respected K. C. Sinha graced the occasion. NOU Vice Chancellor Prof. in the seminar. KC Sinha said that qualitative education can be provided to the children of rural areas through rural study camps. College of Commerce Principal Prof. Tapan Kumar Shandilya said that interest in children's education can be generated through teachers' meetings, ICT lab and animation-based teaching. 62 participants participated in the seminar.

دیہی علاقہ کے بچوں کو نئی تہلک سے تعلیم کی ضرورت: کے سی سنہا



پتہ (پرنس) اعلیٰ (بھارتیہ) تعلیمی سوسائٹی اور کالج آف کامرس آف ایڈوانسڈ اسٹڈیز کے مشترکہ زیر اہتمام چھ روزہ ورلڈ ایڈوانسڈ کیمپ پر ایک سیمینار کا انعقاد کیا گیا۔ سیمینار سے خطاب کرتے ہوئے ناظمہ اویس نے بیہوشی کے دہس چائلڈ پر ویڈیو کے سی سیمینار کے چھ روزہ ورلڈ ایڈوانسڈ اسٹڈیز کے علاقوں کے بچوں کو نئی تہلک سے اور ڈریس میجر کی تعلیم فراہم کی جاسکتی ہے اور بہار کے سکولوں میں داخلے کے مجموعی تناسب کو بڑھایا جاسکتا ہے۔ تعاون، انکوائری، اساتذہ کی تربیت، ایجوکیشنل ٹیکنالوجی اور ریاضی کا کالج آف کامرس کی ضرورت ہے۔ کالج آف کامرس کے پرنسپل ڈاکٹر پریم چند کمار نے خطاب کیا۔ کہا کہ اساتذہ کی بات چیت اور شاہد بنانے کا کام اساتذہ کی بات چیت اور آئی سی ٹی کی لیب اور اینی میٹریں پر مبنی تدریس کے ذریعے بچوں کی پڑھائی میں دلچسپی پیدا کی جاسکتی ہے۔ ڈاکٹر اے کے کونیر نے کہا کہ ریاضی بہار میں تعلیمی سوسائٹی کے لیے ایک چیلنج ہے۔ تعاون، انکوائری، اساتذہ کی تربیت، ایجوکیشنل ٹیکنالوجی اور ریاضی کا کالج آف کامرس کی ضرورت ہے۔ کالج آف کامرس کے پرنسپل ڈاکٹر پریم چند کمار نے خطاب کیا۔ کہا کہ اساتذہ کی بات چیت اور شاہد بنانے کا کام اساتذہ کی بات چیت اور آئی سی ٹی کی لیب اور اینی میٹریں پر مبنی تدریس کے ذریعے بچوں کی پڑھائی میں دلچسپی پیدا کی جاسکتی ہے۔ ڈاکٹر اے کے کونیر نے کہا کہ ریاضی بہار میں تعلیمی سوسائٹی کے لیے ایک چیلنج ہے۔

گرامیण क्षेत्र में भी उपलब्ध कराई जा सकती है गुणात्मक शिक्षा

जगमगण संवाददाता, पटना : आधुनिक तकनीकों के आधार पर ग्रामीण क्षेत्रों के बच्चों को रूरल स्टडी कैम्प के माध्यम से गुणात्मक शिक्षा उपलब्ध कराई जा सकती है। राज्य में सकल नामांकन अनुपात को बढ़ाने के लिए विद्यालयों की संख्या में वृद्धि, आधारभूत संरचना, शिक्षकों का प्रशिक्षण, कंप्यूटर लिटरेसी और जागरूकता पैदा करने की आवश्यकता है।

यह बातें नालंदा खुला विवि

के कुलपति प्रो. केसी सिन्हा ने कहीं। वह बिहार मैथमेटिकल सोसायटी एवं कालेज आफ कामर्स आर्ट्स एंड साइंस पटना के संयुक्त तत्वाधान में बुधवार को रूरल स्टडी कैम्प पर सेमिनार को संबोधित कर रहे थे। कालेज के प्राचार्य प्रो. तपन कुमार शांडिल्य ने कहा कि शिक्षक समागम तथा आइसीटी लैब और एनिमेशन वेस्ट टीचिंग से बच्चों के शिक्षण में इंटरैस्ट पैदा किया जा सकता है।

Bihar Divas

Date: 22-24th March 2022

On the occasion of Bihar Divas, the students of College of Commerce, Arts & Science, Patna was participated and given their presentation in rich historical and cultural heritage of Bihar in this event.



Seminar on Employment Opportunities and Career Prospects

Date: 6th April 2022



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A seminar on “Employment Opportunities and Career Prospects” was organised on 6th April 2022 at our college by the Department of History. 179 participants participated in the seminar.





Breast Cancer Awareness

Date: 12th April 2022

An awareness workshop on “Breast Cancer Awareness Programme” was organised **collaboration with Maitri Club** on 12th April 2022 at our college in collaboration with Maitri Club sponsored by Paras Hospital, Patna. 200 participants participated in the seminar.



World Earth Day Celebrated



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Date: 22nd April 2022

Department of Geography, College of Commerce, Arts & Science, Patna celebrated Earth Day. On this occasion, our principal Prof. T.K. Shandilya graced the occasion and gave their talk to the students. World Earth Day was celebrated in the college by planting trees on this Day volunteers tied bands and took oath to protect mother earth.





कॉलेज ऑफ कॉमर्स में मना पृथ्वी दिवस

पटना (एसएनबी)। पर्यावरण का संरक्षण आज समय की सबसे बड़ी आवश्यकता है और छात्रों को इसके लिए अपनी महत्वपूर्ण भूमिका निभानी चाहिए। पर्यावरण संरक्षण के लिए लोगों को जागरूक करने की जरूरत है। यह बातें पृथ्वी दिवस के अवसर पर आयोजित कार्यक्रम के उद्घाटन के मौके पर कॉलेज ऑफ कॉमर्स, आर्ट्स एंड साइंस के प्रिंसिपल तपन कुमार शांडिल्य ने कही। इस मौके पर महाविद्यालय के भूगोल, वनस्पति और जंतु विभाग की ओर से वाद-विवाद, निबंध लेखन प्रतियोगिता और वृक्षारोपण कार्यक्रम का आयोजन भी किया गया। पृथ्वी दिवस



पौधरोपण कार्यक्रम में हिस्सा लेने वाली छात्राओं के साथ कॉलेज के शिक्षक और शिक्षिका।

पर महाविद्यालय परिसर में वृक्षारोपण और वाद विवाद और निबंध लेखन प्रतियोगिता के सफल छात्रों को प्रिंसिपल तपन कुमार शांडिल्य ने पुरस्कृत किया। इस अवसर पर

संतोष कुमार, प्रो. मनोज कुमार, प्रो. विद्या यादव, प्रो. बिंदु सिंह, प्रो. अनूप कुमार, प्रो. संजय पांडेय समेत बड़ी संख्या में छात्र-छात्राएं भी मौजूद थे।

Rangoli competition

Date: 28th April 2022

Rangoli competition for the students of college was organised today in college campus. Perused the event and distributed certificates to winners.



ANTI TERRORISM DAY

21MAY2022



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Anti-Terrorism day was organized in the college campus. Speech Competition on the importance of Education in eradicating terrorism was conducted on this occasion. Monu Kumar and Pooja Singh got first and Second position respectively. Volunteers took oath against terrorism.





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INDUCTION MEET

21.05.2022

Induction meet of Volunteers was organized on 21.05.2022. They were welcomed by Programme Officers. Volunteers were oriented by former programme officer, Dr. Kirti and president awardee former volunteer Niraj Kumar.





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ORIENTATION PROGRAM

24.05.2022



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An orientation programme of newly admitted volunteers was organized. Former NSS P.O Prof. Kirti was the resource person. She explained very extensively on the working of NSS. The session was very interactive and volunteers motivated to serve society and nation.





A Seminar on Higher Education in India-Critical Evaluation in Today's Perspective

Date: 30th May 2022

A seminar on "Higher Education in India-Critical Evaluation in Today's Perspective" was organised on 30th May 2022 at our college by the Department of Commerce.

Felicitating Professor Jagat Bhushan Nadda in our college premises in a programme. Professor Nadda is Director of Consortium for Educational Communication which is an inter University centre of UGC. Professor Nadda delivered a lecture on "Higher Education in India: A critical evaluation in today's perspective". 186 participants participated in the seminar.





World Tobacco Day

30.05.2022 TO 31.05.2022

A two days programme was organized on World no Tobacco day. On 30.05.2022, Volunteers surveyed the consumption of tobacco by different age group person and they educated them about the diseases caused by use of tobacco and appealed them not to get addicted. On 31.05.2022 Volunteers submitted their survey report and a short film directed by NSS Volunteers were displayed in the programme. In this programme volunteers presented slogans, poems and speeches on anti-tobacco.



Survey by volunteers





Short film making team



N.S.S(P.O) , teaching staff, HoD of physics department and all volunteers

Release of the newspaper 'Samanantar'

Date: 1st June 2022

कॉलेज ऑफ़ कामर्स आर्ट्स एंड साइयन्स पटना में आधुनिक स्टूडीओ के उद्घाटन के मौके पर प्रकाशित समाचार पत्र समानान्तर का विमोचन करते अतिथि। साथ ही डिजिटल कोर्स तैयार करने पर सहमति बनी।



कॉलेज ऑफ कॉमर्स आर्ट्स एंड साइंस पटना में आधुनिक स्टूडियो के उद्घाटन के मौके पर प्रकाशित समाचार पत्र समानांतर का विमोचन करते अतिथि।

डिजिटल कोर्स तैयार करने पर सहमति

पटना, वरीय संवाददाता। यूजीसी का शैक्षणिक संचार संकाय कॉलेज ऑफ कॉमर्स आर्ट्स एंड साइंस पटना के पत्रकारिता विभाग के सहयोग से छात्रों के लिए डिजिटल पाठ्यक्रम तैयार करने में सहयोग करने पर सहमति जताई है। प्राचार्य प्रो. तपन कुमार शांडिल्य ने बताया कि पत्रकारिता विभाग के आधुनिक स्टूडियो के उद्घाटन के बाद यूजीसी के शैक्षणिक संचार संकाय के निदेशक प्रो. जेबी नड्डा ने कहा कि शैक्षणिक संचार संकाय

तंबाकू निषेध दिवस पर पोस्टर प्रतियोगिता हुई

पटना। विश्व तंबाकू निषेध दिवस पर कॉलेज ऑफ कॉमर्स, आर्ट्स एंड साइंस में मंगलवार को कार्यक्रम का आयोजन किया गया। छात्र-छात्राओं ने कम से कम दो लोगों को तंबाकू मुक्त कराने का प्रयास करने की भी शपथ ली। कार्यक्रम का आकर्षण तंबाकू पर बनी लघु फिल्म थी।

पत्रकारिता विभाग के सहयोग से डिजिटल पाठ्यक्रम तैयार करेगा।

प्रिसिपल प्रो. शांडिल्य ने पत्रकारिता विभाग की अन्य गतिविधियों और उपलब्धियों से प्रो. नड्डा को अवगत कराते हुए कहा कि विभाग से

पत्रकारिता कोर्स करके सैकड़ों छात्र अपनी प्रतिभा का प्रदर्शन कर रहे हैं। इस अवसर पर विभाग के समन्वयक प्रो. तारिक फातमी ने बताया कि प्रो. नड्डा ने विभाग द्वारा प्रकाशित समाचार पत्र समानांतर का विमोचन भी किया।

World Environment Day

04.06.2022 - 05.06.2022

A two days programme organized on 04.06.2022 Say No to Single Use Plastic Campaign was organized in the Campus and nearby area. Students, faculties, Staffs and others were appealed to Say 'No' for single use plastic. On 05.06.2022 an awareness rally on environment protection was organized. The rally ended at Brahm Kumari Ishwariya Viswavidyalaya divine University where volunteer meditated and taken promise to protect the earth and planet.





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World Blood Donor Day

13.06.2022-14.06.2022

A two day programme was organised. On 13.06.2022. Essay and Poster making Competiton on bood donation and role of youth was organized. On 14.06.2022 volunteers motivated persons of their locality and few volunteers donated blood in the donation Camp in IGIMS.





International Yoga Day

21.06.2022

International Yoga day was celebrated in the college Campus. Volunteers practiced Yoga under the guidance of Yoga Guru Ffom Kolkata. NSS Volunteers along with P.O also practiced Yoga in College and University Campus.



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Covid Vaccination and Campign

08.07.2022 - 09.07.2022

Covid Vaccination Camp was inaugurated by the principal of the college. More than two hundred fifty persons, students, faculties staffs and others were vaccinated in the camp.



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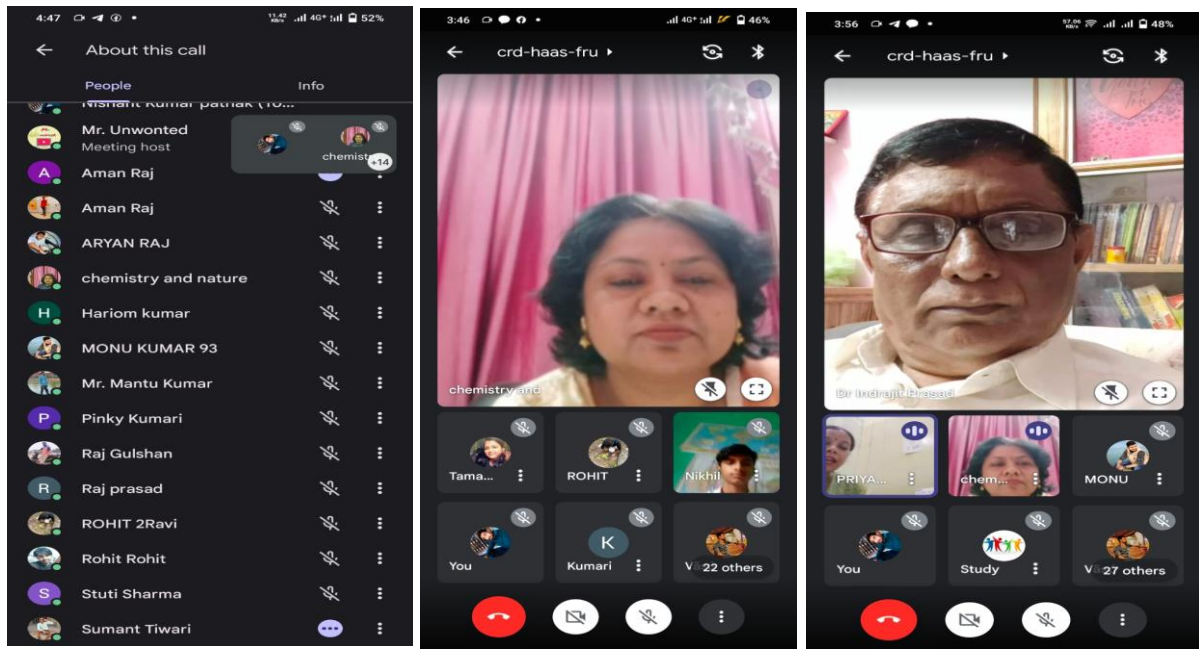




World Population Day

11.07.2022

Organized a webinar on topic family planning and population control Dr. Priyanka Anupam SMO, Referral hospital sherghati was the resource person



प्रेमचंद जयंती सेमिनार: भारतीय समाज और प्रेमचंद

दिनांक: 29th July 2022

इस संगोष्ठी में मुख्य अतिथि प्रो. वीरेन्द्र नारायण यादव (पू. हिंदी विभागाध्यक्ष व पू. मानविकी संकायाध्यक्ष, जे. पी. विश्वविद्यालय, छपरा एवं सदस्य, बिहार विधान परिषद्), प्रो. छाया सिन्हा (विभागाध्यक्ष हिंदी विभाग, पाटलिपुत्र विश्वविद्यालय) और प्रो. शिवनारायण (संपादक, नई धारा एवं चर्चित साहित्यकार) थे। इस कार्यक्रम में “भारतीय समाज और प्रेमचंद” विषय पर विस्तृत चर्चा की गयी जिसमें प्रेमचंद की रचनाओं के परिप्रेक्ष्य में भारतीय समाज के स्वरूप और उसकी प्रवृत्तियों पर गहन विचार-विमर्श हुआ। इस चर्चा



में मुख्य वक्ताओं के अतिरिक्त महाविद्यालय के प्रधानाचार्य, हिंदी विभाग के अध्यक्ष, अन्य कई विभागों के अध्यक्ष, हिंदी व अन्य विभागों के प्राध्यापक एवं 214 छात्र और छात्राएं उपस्थित रहे।



तुलसी जयंती: वर्तमान समय और तुलसीदास

दिनांक: 5th August 2022



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आज कॉलेज ऑफ कॉमर्स, आर्ट्स एंड साइंस, पटना में हिंदी विभाग एवम् IQAC के तत्वाधान में तुलसी जयंती मनाई गई तथा एक संगोष्ठी का आयोजन किया गया। इस संगोष्ठी में मुख्य अतिथि प्रो. तरुण कुमार (हिंदी विभागाध्यक्ष व मानविकी संकायाध्यक्ष, पटना विश्वविद्यालय, पटना) और डॉ. कुणाल कुमार (पू. प्राध्यापक व पू. संपादक, राजभाषा पत्रिका) थे। इस कार्यक्रम में “वर्तमान समय और तुलसीदास” विषय पर विस्तृत चर्चा की गयी जिसमें वर्तमान समय की विसंगतियों और समस्याओं के सन्दर्भ में तुलसी साहित्य की प्रासंगिकता पर विचार किया गया। इस चर्चा में मुख्य वक्ताओं के अतिरिक्त महाविद्यालय के प्रधानाचार्य, हिंदी विभाग के अध्यक्ष, अन्य कई विभागों के अध्यक्ष, हिंदी व अन्य विभागों के प्राध्यापक एवं 178 छात्र और छात्राएं उपस्थित रहे।





Sawan Mahotsava

06.08.2022

NSS volunteers participated in Sawan Mahotsava organized by cultural wing of the college. NSS volunteer Pragya Singh got second position in solo dance and Sachin & group in second position in folk dance.





International Youth Day

12.08.2022

On this occasion, poster making and painting competition was organized in Mahatma Gandhi Bhawan of Maha Vidyalaya Aditi Kumari, Anjali Kumari got first and second position respectively.





Har Ghar Trianga Campaign

13.08.2022

Volunteers educated the students and others in the campus for flag hoisting under Har Ghar Tiranga Campaign.



PARK and PPU CLEANLINES DRIVE

13.08.2022



NSS Volunteers Cleaned PPU Campus and Chandrashekhar Park under cleanliness drive. The Statue in the park was also cleaned by them.





वाद-विवाद प्रतियोगिता

दिनांक: 13th August 2022

आजादी के अमृत महोत्सव के उपलक्ष में वाद विवाद प्रतियोगिता, निबंध लेखन प्रतियोगिता, किज प्रतियोगिता एवम् पेंटिंग प्रतियोगिता और पोस्टर मेकिंग प्रतियोगिता कॉलेज ऑफ कॉमर्स, आर्ट्स एंड साइंस कॉलेज में आज दिनांक 13.08.2022 को आयोजित किया गया।



NIT Ghat Cleanliness

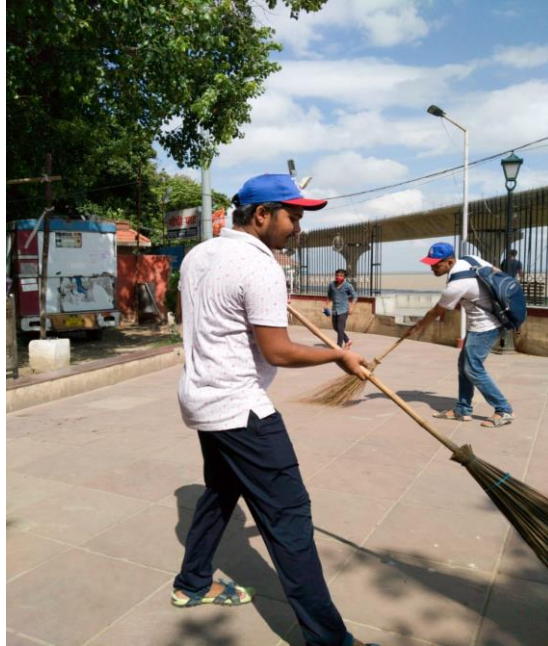
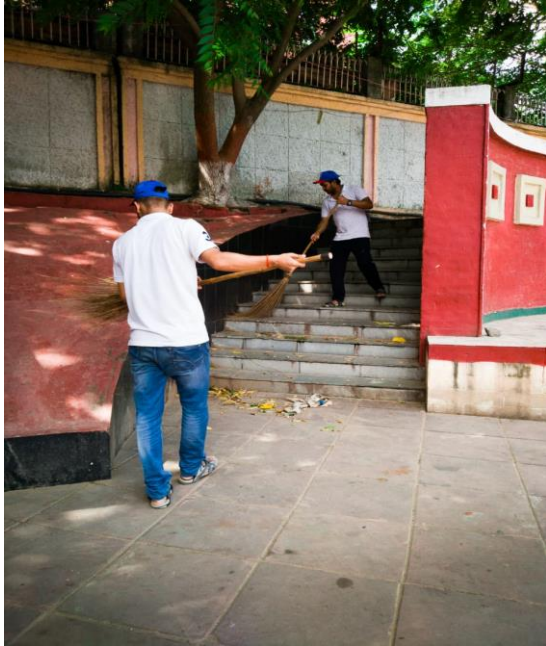
14.08.2022

NSS Volunteers Cleaned Gandhi ghat on the river ganga under Swachchta Pakhwada and motivated the persons on the ghat to keep clean water bodies and ghats to save water resources.



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Independence Day 2022

दिनांक: 15th August 2022



कॉलेज ऑफ कॉमर्स, आर्ट्स एंड साइंस, पटना में आयोजित 75 आजादी का अमृत महोत्सव 15 अगस्त 2022 के अवसर पर झंडोतोलन कार्यक्रम। वर्षा के दौरान ही 10 बजे निर्धारित समय पर झंडोतोलन किया गया। विभिन्न प्रतियोगिताओं में शामिल एवम् विजेता विद्यार्थियों को पुरस्कृत भी किया गया।





International Youth Day

17.08.2022

NSS Volunteers participate in the reel making and extempore Competition organized by BSACS AT J.D. WOMEN COLLEGE, PATNA. The theme of the competition was HIV/AIDs and roles of youth in awareness.



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74th Foundation Day of the College

Date: 5th September 2022.



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74th foundation day and Teachers Day of College of Commerce, Arts and Science, Patna has been celebrated on 5th September 2022. Chief guest was Honourable Education Minister, Government of Bihar Prof. Chandrashekhar, Guest of honour was Dr Ramand Yadav, Honourable Mines and Geology Minister, Government of Bihar with Chairperson Prof R K Singh Honourable Vice Chancellor of Patliputra University, Patna.





World Literacy Day

08.09.2022

On World Literacy Day NSS Volunteers in the leadership of program officer visited Anganwadi Centre, Bhootnath road. Volunteer entrusted with children educated them about nutrition. Drawing books, pencils books and biscuits were distributed among children at the center.





हिन्दी दिवस संगोष्ठी: साहित्य, संस्कृति और मीडिया

दिनांक: 8 सितम्बर 2022

आज दिनांक 8 सितम्बर 2022 को हिन्दी दिवस के उपलक्ष्य में एक संगोष्ठी, विषय साहित्य, संस्कृति और मीडिया पर हिन्दी विभाग, कॉलेज ऑफ कॉमर्स, आर्ट्स एंड साइंस, पटना द्वारा कॉलेज के सभागार में आयोजित किया गया जिसके मुख्यअतिथि वक्ता हिन्दी साहित्य के विद्वान एवम् गगनांचल के सम्पादक डॉक्टर आशीष कांधवे थे। इस कार्यक्रम में साहित्य, संस्कृति और मीडिया के अंतर्संबंध पर चर्चा की गयी। इस कार्यक्रम में हिंदी विभागाध्यक्ष प्रो श्रीकांत सिंह ने स्वागत भाषण दिया, प्रो मंगला रानी ने मंच का संचालन किया तथा डॉक्टर अजय कुमार ने कविता पाठ किया तथा डॉक्टर विनीता गुप्ता ने धन्यवाद ज्ञापित किया। इस चर्चा में मुख्य वक्ताओं के अतिरिक्त महाविद्यालय के प्रधानाचार्य, हिंदी, अन्य कई विभागों के अध्यक्ष, हिंदी व अन्य विभागों के प्राध्यापक एवं 43 छात्र और छात्राएं उपस्थित रहे।



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ORIENTATION PRAGRAM: Solid Waste Management

16.09.2022

Human Matrix Security Indore team. Oriented volunteers about solid waste management and sanitation.





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Induction Meet of Part 1-year 2022

Date: 20th September 2022

Induction Meet of first year 2022 students of traditional courses of Commerce, Arts and Science was organised on 20th Sep 2022. All the heads and faculty members of traditional department was present to welcome and giving good wishes to all newly admitted students of this college.



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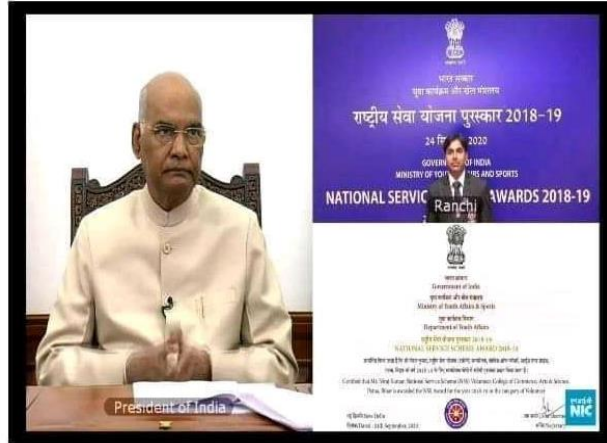
PRESIDENT AWARD



20.09.2022

N.S.S volunteer Niraj Kumar got President award for extra ordinary work as N.S.S volunteer during 2018-19.





NSS DAY

24.09.2022

College Cultural program was organised at this occasion. Programme officer presented the report of activities of NSS. The Principal, COCAS encouraged volunteers to do service for society. Nukkad Natak on Blood donation was played.





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National Seminar on Dimensions of Tribal and Dalit Movement

Date: 24-25th September 2022

Two days National Seminar on “Dimensions of Tribal and Dalit Movement” organised by the department of History, College of Commerce, Arts and Science Patna on 24th and 25th, September 2022 sponsored by ICHR, New Delhi. Prof. Bal Mukund Pandey, Secretary ICHR, New Delhi, Prof. Girish Kumar Chaudhary, VC Patna University, Prof. Ram Kishore Singh, Head, University P.G. Department of History was the speaker in this conference. 234 participants were participated in this national seminar.



जन शब्द की परिकल्पना वेद में किन्तु दलित राजनीतिक शब्द : बालमुकुन्द पाण्डेय

खबरों की तरह तक

पटना/ डा. आलोक सिन्हा। भारतीय इतिहास अनुसंधान परिषद्, नई दिल्ली द्वारा प्रायोजित भारत में जनजातीय एवं दलित आन्दोलन के अध्ययन दो दिवसीय राष्ट्रीय संगोष्ठी का आयोजन इतिहास संकलन समिति, बिहार के द्वारा कॉलेज ऑफ कॉमर्स आर्ट्स एंड साइंस पटना के वाणिज्य सभागार में किया गया। राष्ट्रीय संगोष्ठी का उद्घाटन पटना विश्वविद्यालय के कुलपति विरीश कुमार चौधरी, इतिहास संकलन समिति, नई दिल्ली के संसदन सचिव बालमुकुन्द पांडे, इतिहास संकलन समिति, बिहार प्रो राजीव रंजन, प्राचार्य प्रो इंद्रजीत कुमार राय, मंडीविट्ट इतिहास विभाग के पूर्व विभागाध्यक्ष डॉ मनीष कुमार, टीवीएस कॉलेज प्राचार्य जयेंद्र प्रसाद मिश्र, एसडीएस कॉलेज प्राचार्य प्रो राम किशोर सिंह, ने संयुक्त रूप से दीप प्रज्ज्वलित कर संगोष्ठी की शुरुआत



किया। राष्ट्रीय संगोष्ठी के आयोजन अल्पकालीन राजीव रंजन ने विषय प्रवेश करते हुए कहा कि देश गुलाम बनने के बावजूद हमें समग्र तक जनजातीय स्वतंत्र रहे, क्योंकि इनका स्व जाति था। जनजातीय संघर्ष लगतः उनके स्व के रक्षण का संघर्ष है। संसदन सचिव बालमुकुन्द पांडे ने कहा कि जन शब्द की परिकल्पना वेद में मिलती है, किन्तु दलित शब्द भारतीय संस्कृति की नहीं

है, वह राजनीतिक शब्द है। साम्राज्यवादीयों ने वैदिक वर्ण व्यवस्था को स्वतंत्र के तहत जाति व्यवस्था में बदल दिया। कुलपति विरीश चौधरी ने शिल्पकर्मियों को स्मरण किया। प्रो राम किशोर सिंह ने एकरसक मानववाद के अवलोक में जनजातीय एवं दलित आन्दोलन की रखा। महाविद्यालय प्राचार्य प्रो इंद्रजीत कुमार राय ने अपने अध्यक्षीय उद्घोषण में प्राथमिक स्वीकृति

के महत्व और वैज्ञानिक सोच पर जोर देने की बात कही। बीज पत्रालय दीप प्रोड्रु मनीष ने जनजातीय संघर्ष के अध्ययन के लिए मौखिक शोधों के महत्व पर प्रकाश डाला।

संगोष्ठी में मुठ गोविंद सिंह महाविद्यालय के दिवंगत शिक्षक डॉ गौरी नाथ राय को ब्रह्मजाल अर्पित की गई तथा उनके द्वारा संपादित पुस्तक युग-वर्गीय, मंदराफल का विमोचन किया गया। कार्यक्रम में उनकी पत्नी रेखा झा एवं पुत्री उपस्थित थीं। संगोष्ठी में स्मारक का भी विमोचन हुआ जिसमें 160 शोध आलेखों का सार प्रस्तुत किया गया। विभाजन की आसदी विषय पर एक छात्राध्यक्ष प्रदर्शनी का उद्घाटन भी कार्यक्रम में हुआ। कार्यक्रम सत्र का संचालन प्रोड्रु अनिता एवं धनबाद ज्ञान संगोष्ठी समन्वयक इतिहास संकलन समिति बिहार के माससचिव डॉ सौरीश कुमार ने किया।



PAINTING COMPETITION

01.10.2022

NSS Volunteer participated in the State level painting Competition organized by bsacs in Ganga Devi Mahila College, Patna.





World Mental Health Day Seminar: Make Mental Health & Well-Being for all a Global Priority

10/10/2022

On 10th October 2022 World Mental Health Day Seminar was organised by the department of Psychology, College of Commerce, Arts and Science, Patna on 10/10/2022, Speakers were Prof Riti Kumari of S M D College, Punpun, Patna and Shri Niraj Kumar of Paras Hospital, Patna in presence of all the faculty members of the department including HOD Prof Kriti and IQAC Incharge Dr Santosh Kumar and departmental students. 81 participants participated in this seminar.





QUIZ COMPETITION: General Awareness, Health, Current Affairs, Social Media
17.10.2022

A quiz Competition on General Awareness, Health, Current Affairs, Social Media etc. was organised. Shashwat Singh and Suruchi Raj got 1st position and 2nd Position respectively for the district level competition.





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Workshop on Entrepreneurship Development

Date: 17th October 2022

Workshop on Entrepreneurship Development was organised at College of Commerce, Arts and Science, Patna and Atal Incubation Centre Bihar Vidyapith, Patna. Chief Guest was Shri Vijay Prakash Rtd IAS and it's Chairman cum CEO and secretary Shri Pramod Karn. A MOU was also signed today with incubation centre. 67 participants were participated in this workshop.



सेमिनार- आधुनिक भारत का इतिहास लेखन और संभावित साहित्य लेखन

दिनांक 12th November 2022

आज दिनांक 12.11.2022 को कॉलेज ऑफ कॉमर्स, आर्ट्स एंड साइंस, पटना के सभागार में पाटलिपुत्र विश्वविद्यालय स्नातकोत्तर इतिहास विभाग द्वारा एक सिंपोजियम आयोजित किया गया जिसका विषय "आधुनिक भारत का इतिहास लेखन और संभावित साहित्य लेखन" जिसकी अध्यक्षता प्रो छाया सिन्हा,



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अध्यक्ष हिंदी विभाग ने की। मुख्य वक्ता प्रो हितेंद्र पटेल, रविन्द्र विश्वविद्यालय, कोलकाता तथा प्रो प्रमोदा नंद दास थे। इस कार्यक्रम में प्रो जयदेव मिश्र पटना विश्वविद्यालय, प्रो डी एन सिन्हा, अर्थशास्त्र विभागाध्यक्ष प्रो वी पी त्रिपाठी प्रो राजीव रंजन, प्रो विनय कुमार, अविनाश कुमार झा, शोध छात्र छात्रा एवम् अन्य कई गणमान्य लोग उपस्थित थे। हिंदी व अन्य विभागों के प्राध्यापक एवं 60 छात्र और छात्राएं उपस्थित रहे।





STATE LEVEL PAINTING COMPETITION

19.11.2022

In the State Level Painting Competition on topic Blood Donation and HIV/AIDS by BSACS. NSS Volunteer Prity Azad got first position in the competition.





अंतर महाविद्यालय कबड्डी चयन खेल प्रतियोगिता

दिनांक 20th November 2022

आज दिनांक 20.11.2022 को पाटलिपुत्र विश्वविद्यालय, पटना अंतर महाविद्यालय कबड्डी चयन खेल प्रतियोगिता का आयोजन कॉलेज ऑफ कॉमर्स, आर्ट्स एंड साइंस, पटना में किया गया। इससे चयनित खिलाड़ियों को पूर्वी क्षेत्र अंतर विश्वविद्यालय में खेलने के लिए पाटलिपुत्र विश्वविद्यालय टीम में खेलने का अवसर मिलेगा जिसका आयोजन ओडिसा में होगा।





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22 Days TATA CONSULTANCY SERVICES (TCS) Youth Employment Programme Workshop

Date: 24th November 2022

TATA CONSULTANCY SERVICES (TCS) Youth Employment Programme with IQAC, College of Commerce, Arts and Science, Patna 22 days Training Programme started from 3rd Nov to 24th Nov 2022 ended today in the interest of the students. Programme was very successful. Congratulations to the college family members especially to Dr Santosh Kumar Coordinator, IQAC and Prof Rashmi Akhori HOD Econ for their efforts



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Constitution Day celebration and use of Hindi

Date: 26th November 2022

Constitution Day celebration and use of Hindi by general public in judiciary and other places. Chief Guest was Dr Motilal Gupta and well-known advocate Shri Indradeo Kumar, HOD of Law Dr Anil Kumar, Dr Vinay Kumar of Law faculty, Dr Ajay Kumar and Prof Mangala Rani of Hindi Department as coordinator of this function were present. Students of law faculty and others participated in this historic occasion at College of Commerce, Arts and Science, Patna.





Constitution Day: Celebrated by NSS Volunteers

26.11.2022

On the Constitution Day Volunteers discussed about the importance of Constitution. Volunteers took oath to follow the preamble of the Constitution.





World AIDS Day

01.12.2022

On the World AIDS Day Slogan Competition was organized on the topic of AIDS. On this occasion handbook on disease among Youth were distributed.





Road Safety

09.12.2022

Volunteers Participated in Oath Ceremony For Road Safety Organized By Patliputra University, Patna





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World Human Rights Day

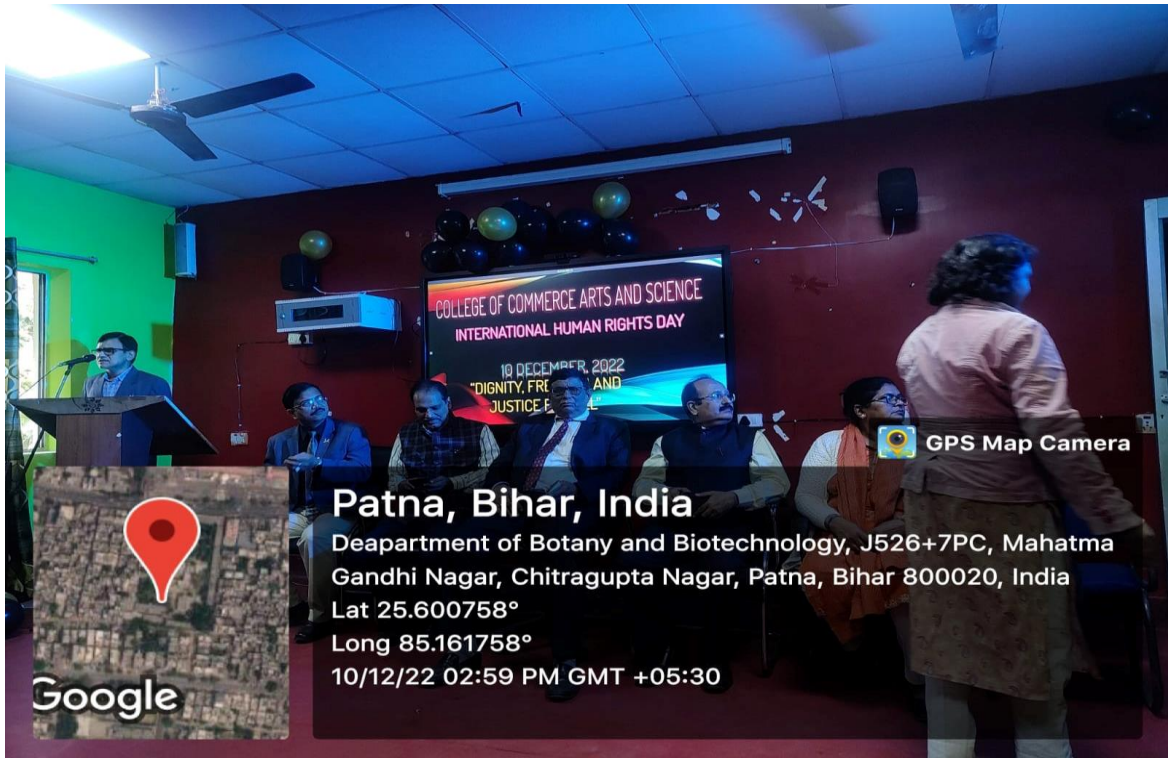
Date: 10th December 2022

World Human Rights Day celebrated at College of Commerce, Arts and Science, Patna on 10th December 2022. The principal, cocas encouraged students to respect human rights and focused on the theme dignity, freedom and justice for all. 78 participants participated in this event.



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हर व्यक्ति मर्यादा के साथ जिंदगी जी सके यह मानवाधिकार का अर्थ'

(एसएनबी)। विश्व मानवाधिकार दिवस के अवसर नेवार को कॉलेज ऑफ कॉमर्स आर्ट्स एण्ड साइंस पटना एसएस और विधि विभाग द्वारा कार्यक्रमों का आयोजन लोगों को मानवाधिकारों के प्रति जागरूक किया गया। म की अध्यक्षता प्रधानाचार्य प्रो. इन्द्रजीत प्रसाद राय ने उन्होंने कहा कि मानव अधिकार का अर्थ हर व्यक्ति के साथ जिंदगी जी सके यह सुनिश्चित करना है। विधि के इंचार्ज प्रो. अनिल कुमार सिंह ने राष्ट्रीय और राष्ट्रीय परिदृश्य में मानवाधिकार के महत्व पर प्रकाश। इतिहास के विभागाध्यक्ष प्रो. राजीव रंजन ने अधिकार के ऐतिहासिक पृष्ठभूमि की विस्तार से चर्चा की। तबसे पर अन्य लोगों के अलावा प्रो. रश्मि अखौरी, एस के कार्यक्रम अधिकारी डॉ राजीव रंजन, डॉ विनय सिन्हा, डॉ स्मिता कुमारी, आईक्यूएसी के समन्वयक प्रो. कुमार और कुलानुशासक डॉ मनव्वर फजल समेत वड़ी में शिक्षक और छात्र छात्राओं ने भाग लिया।

Workshop on YOUTH LEADERSHIP DEVELOPMENT

11.12.2022

The college NSS Volunteers participate in a workshop on Youth leadership development at A.N. College, Patna, organised by VIVEKANANDAN KENDRA KANYAKUMARI ,BIHAR- JHARKHAND ,.PRANT. They actively participated in the workshop.



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2022/12/11 14:32



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2023

BLOOD DONATION AWARENESS PROGRAM ORGANISED BY NSS ON 06.01.2023





Blood Donation Awareness programme was organised in the college. Dr. Niraj was the resource person. He discussed in detail about the Thalassemia blood cancer and importance of blood donation. The principal, COCAS also appealed youth to be part of blood donation as it is the best donation by any human being.

BLOOD DONATION CAMP ORGANISED BY NSS ON 11.01.2023





Blood Donation Camp was organised in the college and Nineteen Units of blood were donated by students and staffs.

NATIONAL YOUTH DAY CELEBRATED BY NSS ON 12 .01.2023



innovation as we came together to celebrate the energy, ideas, and aspirations of the youth. It was a duty that ignited the flame of inspiration, reminding us that within the vigour of our



youth lay the power to shape a brighter future. The celebration served as a catalyst for positive change, encouraging each of us to harness our potential and contribute meaningfully to the world around us.

PARIKSHA PE CHARCHA



NSS volunteers participated in the live telecast programme of pariksha pe charcha by Honourable Prime Minister at Raj Bhawan Patna.





WORLD ENVIRONMENT DAY 05.05.2023



The NCC wing's organization of world Environment Day in college underscores the significance of environmental stewardship, fostering a sense of responsibility among students. Through awareness campaigns and eco-friendly initiatives, it inspires collective action, emphasizing the crucial role the youth play in preserving and protecting the planet.

WORLD NO TOBACCO DAY 31.05.2023



The world no Tobacco Day celebrations organised by the NCC wing in college serve as a vital platform to raise awareness about the harmful effects of tobacco. These events engage the youth in informative sessions, promoting a tobacco-free lifestyle. By fostering a sense of responsibility, the functions contribute to building a healthier future for the youth, encouraging them to make informed choices and steer clear of tobacco-related risks.

WORLD BLOOD DONOR DAY 14.06.2023



Jun 14, 2023, 11:47



The NCC wing's celebration of World Blood Donor Day in college highlights the critical importance of voluntary blood donation. Through awareness drives and blood donation camps, it encourages students to contribute to the lifesaving act of donating blood, emphasizing their role in addressing the constant need for a stable and safe blood supply in healthcare systems.

WORLD YOGA DAY 21.06.2023



The NCC wing's celebration of World Yoga Day in college promotes holistic well-being among students, fostering physical fitness and mental resilience. Through yoga sessions and awareness programs, it emphasizes the importance of incorporating the ancient practice into daily life, enhancing overall health and mindfulness.

WORLD POPULATION DAY 11.07.2023





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The NCC wing's celebration of world population Day in college underscores the significance of population awareness and responsible family planning. Through informative sessions and discussions, it aims to educate students about the challenges and opportunities associated with population dynamics, fostering a sense of responsibility towards sustainable development.

AZADI KA AMRIT MAHOTSAV HAR GHAR TIRANGA 14.08.2023



The NCC wing's celebration of "Aazadi Amrit Mahotsav Har Ghar Tiranga" in college is significant as it instills a sense of patriotism and national pride among students. By encouraging the display of the national flag in every home, it fosters a collective spirit of unity and commitment to the values that symbolize India's journey towards independence and

CLEANSNESS DRIVE IN COLLEGE CAMPUS 14.08.2023





NSS volunteers and NCC cadets jointly organized cleanliness drive in the guidance of programme officers. NSS and NCC in the college campus. On the occasion, volunteers and cadets directed to develop cleanliness as habit in their life.

DISTRICT LEVEL RED RIBBON FEST ON 25.08.2023



Red Ribbon fest organized by Patna university, Patna .Marathon was organized at Gandhi Maidan for awareness of HIV/AIDS. NSS volunteers participated in Marathon and Aakash kumar got third position. Volunteers also participated in nukkad natak and reels making competition which was organized at College Of Arts and Crafts, Patna. Saloni kumari got first position in district level.

RED RIBBON FEST ON 13.09.2023



NSS volunteers participated in Red Ribbon festival organized by BSACS for awarene HIV/ AIIIDS at patliputra sports complex, Patna. NSS volunteer Saloni Kumari got second position in state level reels making competition.



WORLD ENVIRONMENTAL HEALTH DAY 26.09.2023



NSS volunteers participated in the world environmental health day which was organized by state health society, Government of Bihar. They participated in extempore speech /competition, model display competition and poster making competition on the theme of Role of youth in protection of environmental health. MD Sahzaad Hussain kadri got fifth position in model display competition.

MEGA PLANTATION DRIVE ON 27.09.2023





Mega plantation drive was organized in the college with the collaboration with LIC. About 100 plants were planted in the college campus. In the plantation drive NSS volunteers actively participated.

GARBAGE FREE INDIA 01.10.2023



The NCC wing's celebration of "Garbage-Free India" in college underscores the importance of environmental responsibility and waste management. Through awareness campaigns and cleanliness drives, it encourages students to actively contribute a cleaner and more sustainable environment, fostering a sense of civic duty and pride in maintaining a garbage-free nation.



SWACCH BHARAT ABHIYAAN GANDHI JAYANTI RALLY 2.10.2023



The NCC wing's celebration of Swachh Bharat Abhiyaan on Gandhi Jayanti in college pays homage to Mahatma Gandhi's ideals of cleanliness and self-discipline. Through cleanliness initiatives and awareness campaigns, it promotes a cleaner and healthier environment, aligning with the vision of a pristine India that resonates with the teachings of the Father of the Nation.

NATIONAL UNITY DAY 31.10.2023





Oct 31, 2023, 12:31

An oath ceremony was organised on national unity day. Volunteers were oriented about the role of NSS in National unity. National unity day was celebrated in the college on the birth anniversary of Sardar Vallabh Bhai Patel. He was remembered for his contribution to national unity and paid heart felt tribute. Everyone present in the programme took oath for unity of nation. The principal COCAS encouraged volunteers to do their best and oriented them to work for national unity.

WORKSHOP ON SOCIAL MEDIA CAMPAIGN ON POSITIVE GENDER NORMS 1.11.2023 TO 3.11.2023.





NSS volunteers participated in capacity building workshop and youth leaders for social media campaign on positive gender norm organized by UNFA at Patna. Volunteers were trained how to use social media with security and privacy and basic concept of cyber security. They were trained about how to make posts and videos on social media with positive gender norms.

LITERACY AWARENESS PROGRAM-BANKIPUR SLUM AREA DATED 06.11.2023



The Department of Political Science at the College of Commerce, Arts, and Science visited the Bankipur Club slum area to raise awareness among children about the benefits of literacy and empower them to exercise their fundamental right to education.

SAMVIDHAN DIVAS DATED 26.11.2023



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The Department of political science at college of commerce Arts and science in patna celebrated Constitution Day on 26.11.2023 and raised awareness among students about their rights and duties towards the nation.

INTERNATIONAL MENTORSHIP PROGRAM





The International mentorship program, led by Professor Indira Sinha, Department of Political Science, on the impact of public policy on ethnic identity through a Zoom meeting, was also encouraging for students of political science at this college.

progress.

TRAINING GROUND FOR PARADE



The designated training ground for NCC parade in college serves as the crucible where discipline, precision, and teamwork converge. It becomes the hallowed space where NCC cadets hone their marching skills, instilling a sense of camaraderie and instilling values of leadership, essential for their roles as responsible citizens and future defenders of the nation.

N.C.C STORE ROOM





The NCC store room in college is a vital hub for equipment and resources, serving as the logistical backbone for training and activities. From uniforms to essential gear, it ensures that NCC cadets have access to the necessary tools, fostering preparedness and efficiency in their pursuit of leadership, discipline, and service to the community.

HUMAN RIGHTS DAY 11.12.2023





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The Department of Political science's celebration of Human Rights Day and Climate change underscores the intersectionality of global challenges. Through discussions and initiatives, it emphasizes the inextricable link between environmental sustainability and human rights, fostering awareness about the need for inclusive policies that address both issues for a more just and sustainable future.