CAREER POINT UNIVERSITY

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

INDUSTRY, INNOVATION AND INFRASTRUCTURE

Build resilient infrastructure, promote sustainable industrialization & foster innovation

SDG 9: Industry, Innovation, and Infrastructure

Sustainable Development Goal 9 (SDG 9) aims to build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation. This goal emphasizes the importance of technological advancement, research, and robust infrastructure as drivers of economic growth and sustainable development. It recognizes that industrialization, coupled with innovation and infrastructure, lays the foundation for strong, inclusive, and sustainable economies that can provide decent jobs and improve living standards.

Role and Contribution

Career Point University, Kota, plays a significant role in advancing the objectives of SDG 9 through its strong focus on innovation, research, entrepreneurship, and infrastructure development. The University fosters an ecosystem that encourages creativity, problem-solving, and technological advancement among students and faculty.

1. Academic Course

Career Point University, Kota, contributes significantly to **Sustainable Development Goal 9: Industry, Innovation, and Infrastructure** through its academic curriculum, which integrates technical education, research orientation, and innovation-driven learning across various disciplines. The courses offered by different schools of the University equip students with the knowledge, skills, and practical exposure necessary to foster sustainable industrialization and technological advancement.

List of Courses

Sr. No	Course Code	Course Name
1	CAL502	Fundamentals of Computers
2	SML642	Entrepreneurship Development
3	CSL803/CSL724	Advanced Computer Networks
4	RDT411	General orientation & On campus training by different faculties
5	CSL759	Cryptography and Computer Security
6	CSL583	Computer Graphics and Multimedia Programming
7	CAL613	Data Structures and Algorithms
8	CSL606	Computer Architecture
9	AML551	Fundamentals of Engineering Mechanics

10	CSL521	Introduction to AI, Data Science, Ethics and Foundation of Data Analysis
11	CST410	Practical Training
12	SML505	Supply Chain Management
13	CAL517	Fundamentals of Computers & Information Technology
14	MAL512	Mathematical Foundation for Computer Science
15	CSL554	Supply Chain & HR Analytics
16	CSL651	Statistics & Foundation of Data Analytics
17	CSL652	R Programming for Data Science & Data Analytics
18	CSL508	Basics of Computer Application
19	LSL851	Foundation of Library & Information Science
20	LSL852	Computer Basic & Application
21	CAL862/DCS402	Data Warehouse and Data Mining
22	CSL614/CAL861	Digital Marketing
23	CSL946	Advance Machine Learning
24	CSL802	Advance Data Structures
25	CSL801	Advance Software Engineering
26	CAL801	Computer Application & IT in Management
27	SML804	Entrepreneurship Development and Skills
28	CAL813	Advance Database Management System
29	CAT850	Industrial Training
30	CSL999	Computer Science & Statics
31	CSL421	Data Visulization
32	CSL423	Computer Vision
33	CSL612	R Programming for Data Science and Data Analysis
34	CSL381	Computer Graphics
35	CSL439	Data Mining & Warehousing
36	SML522	Retail Practice in India
37	SML523	Fundamentals of Digital Marketing
38	CSL556	Intelligence & Machine Learning On Cloud Computing

39	CSL551	Big Data Analytics
40	CSL552	Scala for Data Science
41	CAL563/CAL858	Information Security
42	PTL605	First Aid & Emergency Care
43	CSL967	Big-Data Analytics
44	SML887	Marketing Management of Hospital Services
45	SML835	Training and Development
46	SML876	Project Appraisal Planning & Control
47	SML862	Services Marketing
48	CAL884	Machine Learning and Pattern Recognition
49	CAL875	Digital Marketing Analytics and SEO
50	CAL990	Computer Application
51	CAL651	Overview of AI and Data Science
52	SML647	Foundations of Marketing
53	ABM723	Rural Marketing
54	ABM728	Management, Training Project report preparation & Evaluation
55	ABM727	Agri Supply Chain Management
56	ECL651	Agricultural Marketing Trade & Prices
57	CAL641/ABM722/CAL554	Management Information System
58	ZOL509	Animal Diversity from Arthropods to Protochordata
59	ABM712/SML827	Marketing Management
60	CAL623	Computer Organization and Architecture
61	CAL624	Data Communication and Network
62	CSL372	Computer Networks
63	CSL631	Introduction to Database Management Systems
64	EEL501	Fundamentals of Electrical Engineering
65	CSL523	Data Analysis using Python, Numpy, Pandas, Matplotlib, and Seaborn
66	CSL640	Principles of Software Engineering
67	CAL555	Data Analysis Using Python

68	CAL559	Database Management System
69	CSL654	Data Analytics and Visualization - Tools & Techniques
70	LSL863	Information storage & retrieval system
71	MPH203T	Computer Aided Drug Delivery System
72	CAL520/CAL820	Overview of Data Science and Foundation of Data Analysis
73	CYL820	Computer For Chemists.
74	CAL877	Mobile Communicaion
75	CAL857	Data Communication & Computer Networks
76	CAL636/CAL883	R Programming for Data Science and Analysis
77	BPL413	Pharma Marketing Management
78	CAL652	Data Analysis
79	CSL336	Data Science- Tools and Techniques
80	CSL633	Machine Learning & Pattern Analysis
81	SML621	Industrial Marketing Concept & Practice
82	CSP602	Case Studies & Projects in Data Analytics and Visualization
83	CSL617	Information Security - Policy, Standard And Practice
84	CAL648	Foundation of Machine Learning and Pattern Recognition
85	CAL656	Data Analytics and Visualization -Tools & Techniques
86	LSL865	Public Library and Information System
87	CAL859	R Programming for Data Analysis
88	CSL988	Computer Science Engineering
89	CSL031	Elementary Computer Application
90	EDP031	Practicum - Special Training Programme - I
91	EDP041	Practicum - Special Training Programme - II
92	CAL612/CAL811	Software Engineering

2. Contribution and Role through Activities

Career Point University, Kota, is deeply committed to advancing **Sustainable Development Goal 9 (SDG 9)**, which focuses on building resilient infrastructure, promoting sustainable industrialization, and fostering innovation. The University actively engages students, faculty, and industry partners in a wide range of **academic, research, and extension activities** that nurture creativity, technological progress, and sustainable development.

Name of the Event	Brief Description of the event	Photographs
International Conference on Recent Innovation in Engineering, Technology & Science for Sustainable Living (RIETSSL-2024)	International Conference on "Recent Innovations in Engineering, Technology & Science for Sustainable Living (RIETSSL-2024)" is organized with the objective of bringing together innovative scientists, professors, research scholars, students and industrial experts in the field of Computing and Communication to a common forum. The primary goal of the conference is to promote the exchange of innovative scientific information between researchers, developers, engineers, students, and practitioners. Another goal is to promote the transformation of fundamental research into institutional and industrialized research and to convert applied exploration into real time application. Overall the conference will provide the researchers and attendees with prospects for national and international collaboration and networking among universities and institutions from India and abroad for promoting research.	  

Name of the Event	Brief Description of the event	Photographs
A Hands-On RedHat Linux Workshop	School of Computer Applications and Technology, CPU recently hosted a highly successful two-day workshop on Linux, in collaboration with RedHat Academy. The event witnessed enthusiastic participation and engaging sessions aimed at enhancing participants' understanding of Linux systems. **Objectives** • The objective of the Linux workshop is to provide participants with comprehensive knowledge and hands-on experience in Linux operating systems. • Through interactive sessions, attendees will learn essential Linux commands, file system navigation, user management, and shell scripting, empowering them to proficiently utilize Linux environments for various computing tasks.	  

Awareness programme on Government Policies & Incentives for Farmer using Digital platform

Brief Description of the event	Photographs
Our event- "Awareness Programme on Government Policies & Incentives Programme for Farmers Using Digital Platform" aimed to empower farmers by disseminating information on government schemes and incentives via digital platforms through "Nukkad natak".	 

International Conference on "Emerging cutting-edge Research and Innovations in Pharmaceutical, life Sciences and Technology"

Brief Description of the event	Photographs
The "International Conference on Emerging Cutting-edge Research and Innovations in Pharmaceutical, Life Sciences, and Technology" is a premier gathering aimed at fostering collaboration, sharing knowledge, and showcasing advancements in the intersecting domains of pharmaceuticals, life sciences, and technology.	 

Innovation and Entrepreneurship Outreach Program

Brief Description of the event	Photographs

The Entrepreneurship Development session, hosted by the ED Cell with IIC kicked off with an inspiring short clip showcasing the journey of a successful start-up (Phool), setting an encouraging tone for the event. Ms. Richa Gulati, the ED Cell Convenor, then delivered a comprehensive talk on the essentials of entrepreneurship, emphasizing the significance of innovation, risk-taking, and persistence in building a successful business and about government schemes.

Following this, Ms. Shalini Chawla, the ED Cell Co-convenor, led a dynamic brainstorming session where students were divided into teams of 4-5 members. Each team was tasked with addressing real-world issues, including finding alternatives to plastic, reducing food wastage, and promoting sustainable practices within their school. After thoughtful discussions, the teams presented their innovative solutions.

The winning idea was presented by Sidharth and his team, who proposed a detailed plan for maintaining sustainability in schools. Their approach included reducing plastic usage, implementing recycling programs, and encouraging energy conservation practices. Their practical and impactful solution earned them the top spot in the competition. Overall, the session was highly successful, fostering creativity, teamwork, and an entrepreneurial mind-set among the participants.

दैनिक भास्कर कोटा 08-08-2024

सीपीयू की उद्यमिता और नवाचार पर वर्कशॉप

कोटा| करियर पॉइंट यूनिवर्सिटी के उद्यमिता विकास विभाग और संस्थान नवाचार परिषद की ओर से ग्लोबल पब्लिक स्कूल में उद्यमिता और नवाचार पर वर्कशॉप आयोजित की गई। इसमें यूनिवर्सिटी की ईडी सेल संयोजक रिचा गुलाटी ने स्टार्टअप स्थापित करने की प्रक्रिया के बारे में बताया। इसके लिए सरकार द्वारा दिए जाने वाले प्रोत्साहन के बारे में भी बताया। यूनिवर्सिटी द्वारा स्थापित बिजनस इंक्यूबेटर के बारे में बताया की कोई भी विद्यार्थी या व्यक्ति, जिसके पास अपना कोई यूनिक बिजनेस आइडिया है तो वो इंक्यूबेटर में संपर्क कर सकता है। ईडी सेल की सदस्य शालिनी चावला ने नवाचार पर विशेष ब्रेन स्टोर्मिंग सेशन का आयोजन किया।

सीपीयू द्वारा ग्लोबल पब्लिक स्कूल में नवाचार और उद्यमिता कार्यक्रम का आयोजन

कोटा@नि.सं.। करियर पॉइंट यूनिवर्सिटी (सीपीयू) के उद्यमिता विकास विभाग और संस्थान नवाचार परिषद द्वारा ग्लोबल पब्लिक स्कूल में उद्यमिता और नवाचार पर एक वर्कशॉप का आयोजन किया गया। इस कार्यक्रम का उद्देश्य विद्यार्थियों में उद्यमशीलता और नवाचार के प्रति जागरूकता विकसित करना था। कार्यक्रम में यूनिवर्सिटी की ईडी सेल संयोजक ऋचा गुलाटी ने स्टार्टअप स्थापित करने की प्रक्रिया के बारे में विस्तार से समझाया। उन्होंने स्टूडेंट्स को एक स्टार्टअप स्थापित करने के लिए सरकार द्वारा दिये जाने वाले प्रोत्साहन के बारे में भी बताया।

उन्होंने स्टूडेंट्स को यूनिवर्सिटी द्वारा उद्यमिता को प्रोत्साहित करने के उद्देश्य से स्थापित बिजनस इंक्यूबेटर के बारे में जानकारी देते हुए बताया कि कोई भी स्टूडेंट या व्यक्ति जिसके पास अपना कोई यूनिक बिजनस आइडिया है तो वो यूनिवर्सिटी के बिजनस इंक्यूबेटर में संपर्क कर सकता है। स्टार्टअप एक्सपर्ट उक्त व्यक्ति की स्टार्टअप स्थापित करने में टेक्निकल और आर्थिक सहायता प्रदान करेंगे। इसके बाद ईडी सेल की सदस्य शालिनी चावला द्वारा नवाचार पर एक विशेष ब्रेन स्टोर्मिंग सेशन का आयोजन किया गया। इस सेशन में छात्रों को अपने-अपने इनोवेटिव बिजनस आइडियास को साझा करने का अवसर मिला। विजेता सिद्धार्थ और उनकी टीम रहे, जिन्होंने अपने अनोखे और नवीन विचार प्रस्तुत किए।

यूनिवर्सिटी के चांसलर प्रमोद माहेश्वरी ने कहा हमें गर्व है कि हमारा संस्थान छात्रों को नवाचार और उद्यमिता के क्षेत्र में आगे बढ़ने के लिए प्रेरित कर रहा है। कुलपति प्रो. डॉ. सुमेर सिंह ने कहा यह कार्यक्रम छात्रों को वास्तविक जीवन की चुनौतियों का सामना करने और अपने नवाचारी विचारों को साकार करने का अवसर प्रदान करेगा।

Quick Fire: 2 Minute product innovation as a part of Induction 2024

Brief Description of the event	Photographs

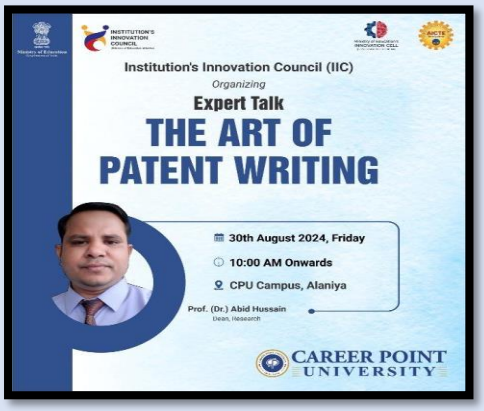
The Entrepreneurship Development Cell (EDC) organized the "Quick Fire: 2-Minute Product Innovation" as part of Induction 2024 to introduce first-year students to the cell's initiatives and inspire entrepreneurial thinking.

The session began with an overview of the EDC's mission to foster creativity, innovation, and entrepreneurial skills among students. First-year students were introduced to the cell's programs, workshops, and activities aimed at nurturing an entrepreneurial mind-set.

An interactive brainstorming activity followed, where 13 enthusiastic participants from the first year were given everyday objects like umbrellas, coffee mugs, and helmets and challenged to pitch creative product innovations within 2 minutes. Jitendra Sharma (B.Tech) and Harshvardhan Yadav (BBA) won prizes for their outstanding and unique innovations. The event encouraged quick thinking, originality, and teamwork, setting an inspiring tone for the students' journey with the EDC.

- Cyber Security Awareness Workshop-Outreach Activity

- Expert Talk on The Art of Patent Writing



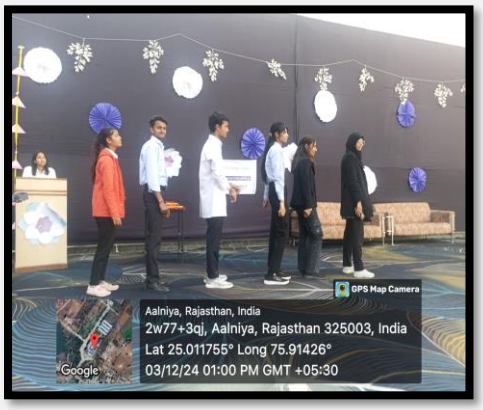
- Educational Visit at Soybean Processing Complex, Goyal Groups of Industries, Kesar, Kota

दैनिक भास्कर कोटा 19-11-2024

छात्रों ने किया सोयाबीन प्रोसेसिंग प्लांट का भ्रमण

कोटा। करियर पॉइंट विश्वविद्यालय के कृषि संकाय प्रथम सेमेस्टर के छात्रों ने प्रकाश चौधरी और डॉ. रुचि बिश्नोई के नेतृत्व में गोयल इंडस्ट्री, कसार स्थित सोयाबीन प्रोसेसिंग कॉम्प्लेक्स का शैक्षणिक दौरा किया। इस दौरान छात्रों को उद्योग विशेषज्ञ नंदकिशोर व उनकी टीम ने सोयाबीन प्रोसेसिंग के विभिन्न चरणों, जैसे कच्चे माल की गुणवत्ता नियंत्रण, उत्पादन तकनीक और तैयार उत्पाद की पैकेजिंग के बारे में जानकारी दी गई। कृषि क्षेत्र में वित्तीय प्रबंधन, गुणवत्ता नियंत्रण और उत्पाद विकास में नवीनता जैसे पहलुओं को समझाया। कृषि संकाय की डीन डॉ. गुंजीत कौर ने इस दौरे को छात्रों के शैक्षणिक और व्यावसायिक कौशल को निखारने का अवसर बताया।

- Gaming for Challengers



3. Research and Innovation:

CPU promotes interdisciplinary research and development through dedicated research centers and incubation facilities. Faculty members and students are engaged in projects related to technology development, automation, renewable energy, and sustainable industrial practices. Publications, patents, and prototype developments contribute to local and national innovation ecosystems.

List of Papers

Sr. No	Title	Name of the Authors	Abstract
1	D-π-A based Diaminomalenonitrile Imine Compounds as Sensors: From Ion Recognition to Logic Arithmetic Applications	Erum Gull naz	In this review article, exciting highlights on highly π-conjugated (π-D-A) 2,3-diaminomaleonitrile (DAMN) based imines or Schiff base chemosensory have been reviewed and discussed. Owing to the typical free -NH2 anion recognition site and 1,2-ethylenediamine based chelating structure, both anion and cation sensing has been achieved with such designed molecules. It has been found that ion interactions strongly alter the electronic push-pull and hence intramolecular charge transfer (ICT) properties across the molecular system. So far such molecular recognition strategy has successfully detected ions like F–, CN– and Cu+2 in aqueous as well as non-aqueous media. Importantly, recognition is usually reversible and changes are clearly perceived through naked eyes. In this work, various sensing aspects like mechanism of interaction, type of recognition, sensitivity, reversibility, binding constants and spectral changes (absorption and emission) have been thoroughly discussed. Herein, the designed and fabricated sensor reports have been arranged in systematic order since 2010 so that the reader gets complete and trending picture of how the developments have taken place in the area of this research. In last, essential shortcomings and future challenges existing with the current approaches have also been highlighted.
2	Microbial protease: an update on sources, production methods, and applications	Chetan Dubey	Enzymes play a crucial role in sustaining life as they act as biological catalysts, facilitating nearly all biological processes. Among these enzymes, proteases, also known as peptidases or proteinases, serve as catalysts for proteolysis, the breakdown of proteins into smaller polypeptides or individual amino acids. Proteases are involved in various biological functions, including protein turnover and recycling, regulation of posttranslational modifications, and immune responses and inflammation. Microbes, including bacteria and fungi, have emerged as a valuable source of proteases. Microbial proteases provide several advantages, such as their minimal space requirements for cultivation and their ability to undergo genetic manipulation, enabling the optimization of protease properties to cater to specific applications. Moreover, the wide diversity of microbial species and strains provides a rich pool of proteases with varying characteristics, including substrate specificity, pH and temperature optima, stability, and resistance to inhibitors. Due to these properties, microbial proteases have widespread application in various fields. This chapter highlights the diverse applications of microbial proteases across multiple industries. Although a wide range of applications of microbial proteases

			underscores their versatility and value in different fields, an understanding of unique properties and optimization of production processes holds promise for addressing industry-specific challenges and developing innovative solutions across various sectors.
3	Estimating regulatory governance gaps for adoption of augmented reality in automobile sector: the application of analytical hierarchy approach	Fateh Bahadur Singh	This study aims to estimate regulatory gaps that AR applications may encounter in the automobile sector. The theoretical framework of this study is inspired by regulatory commons dynamics approach. The document analysis and thematic analysis of semi-structure interview transcript helped propose an estimation framework of regulatory gaps in the context of AR adoption in Indian automobile sector. Next, the importance of various regulatory gaps domains and sub-domains have been assessed using fuzzy analytical hierarchy process technique. The automobile market regulatory gaps emerged as the most important regulatory gap domains, while the violation liability, market distortion, smart road infrastructure, customer interest, and safety have been globally ranked as the top five important regulatory gap sub-domains. Policymakers and regulators face a big challenge to match market dynamics created by rapidly advancing technologies. Market regulatory gaps and technical regulatory gaps need to be addressed separately for clarity and focus.
4	Centroid-based features enhancement using Convolutional Neural Network combined with XGB classi er for Protein-Protein interaction prediction	Gunjan Sahni	The facts allied to the interaction of proteins are crucial due to their significance in numerous biological and cellular activities. With the accessibility of huge protein-protein interaction datasets, the openings to attain efficient deep network models in prediction applications also has been amplified. Despite deep networks, Convolutional Neural Network (CNN) is applied to visual imagery analysis and classification, hence only a few mechanisms are using CNN in protein-protein interaction (PPI) prediction. This article proposed a sequence-based PPI prediction method CCXGB, which is evolving the one-dimensional convolution layer (Conv1D)'s performance in prediction by integrating it with the Centroid-based feature extraction method and eXtreme Gradient Boosting (XGB). The CCXGB evolves the performance of the PPI prediction model by feeding centroid-based raw features in the CNN module to extract high-level protein features which are further involved in the classification function of XGB. CCXGB model can predict PPI with 0.999, and 0.996 Area Under Curve (AUC) scores and 99.38%, and 97.98% average accuracy scores for Human, and S.*cerevisiae* datasets respectively. The significance of each module of the proposed model is proved through different comparing approaches. Correspondingly, the CCXGB demonstrated superior performance when compared with existing PPI prediction models.
5	A Systematic Approach to Prevent Threats Using IDS in IoT Based Devices	Dr. Abid Hussain	Due to the enormous volume of data produced by the IoT, effective intrusion detection is necessary to protect confidential and sensitive information before an attack. This article presents a five-layered system for detecting intrusion in huge datasets. This work uses the construction of brand-new specialized features to increase the rate at which the machine model learns and decrease misperceptions while it is learning. We first examine the literature for the most important problems and difficulties. We also suggest a course of action using several important design principles for search strategy support tools in systematic literature reviews. The limitations of this study may include constrained testing scenarios that might not encompass the full spectrum of real-world IoT threats, potential challenges

			in accurately simulating all possible attack vectors, and the dependence on available machine learning algorithms which might not cover emerging threats comprehensively. Additionally, the study's outcomes might be influenced by the selected hardware and software configurations, potentially limiting the generalizability of the results across diverse IoT device types and environments.
6	Effect of temperature and Co-addition on phase stability, magnetic and electronic properties of Fe2-xCoxMnAl quaternary Heusler alloys for spintronics devices	Ashok Yadav, Vivek Kumar Jain,Vinesh Attatappa,N. Lakshmi ,Arun Sharma, Sarvesh Kumar Pandey,Shikha Awasthi	Through the doping of suitable elements in full or half-Heusler alloys, half-metallicity may be realized by achieving ideal levels for technological applications, such as spin-injected devices, thanks to the ability to fine-tune the Fermi gap. Phase stability and temperature-dependent magnetic properties of Fe2-xCoxMnAl Heusler alloys (x = 0.5, 1.0, 1.5, 2.0) have been investigated in the present research. XRD patterns were identified as a single-phase Heusler-type with a cubic structure with decisive (220), (400) and (422) principle reflections for all the samples. On increasing the cobalt (Co) concentration from 0.5 to 2.0, the coercive field increased from 14.3 Oe to 57.3 Oe at 300 K, 54.9 Oe to 110.6 Oe at 50 K, 47.4 Oe to 123.5 Oe at 30 K, and 56.4 Oe to 137.4 Oe at 15 K. Similarly, with decreasing the temperatures from 300 K to 15 K, the coercive field, remanence magnetization and squareness increased for all values of x. The Curie temperature was enhanced from 471 K to 735 K by Co doping in the quaternary Heusler alloys Fe2-xCoxMnAl and compared with theoretical values of that. These alloys showed high spin polarization with a range of 75–100 % and a band gap between 0.4 and 0.7 eV making them suitable for potential applications in spintronic devices
7	Photoluminescent behaviour combined with electrical and optical properties in manganese (II) halide perovskite for photoluminescent rewritable printing applications	Arun Sharma	Organic-inorganic manganese hybrid halide perovskites have emerged as a promising candidate due to their intriguing features for a variety of optoelectronic applications. The slow evaporation method was utilized to synthesize single crystals of [(CH3)4N]MnCl3. Powder X-ray diffraction (PXRD) and scanning electron microscopy (SEM) were used to verify the phase's purity and morphology of [(CH3)4N]MnCl3, respectively. The crystal crystallizes in the hexagonal system with a P 63/m space group. The compound was found to be thermally stable up to a temperature of 400 °C. The direct and indirect optical band gaps were determined to be 2.16 eV and 1.97 eV, respectively. Optoelectronic capabilities of the material were researched as a function of Impedance spectroscopy. At room temperature, it can produce strong red lights at 635 nm with a full width at a maximum of 78 nm when excited by an appropriate UV light source. Ultimately, the material's remarkable photo physical qualities were utilized to accomplish luminescent printing. The permanence of the printed images was confirmed when they showed exceptional clarity even after going through several cycles and stayed visible for a lengthy 15 days in an air environment. With the aid of a UV lamp, the data on the paper can be readily read. These results demonstrate the material's exceptional photoluminescence and opt electrical capabilities, indicating its potential for exciting applications in optoelectronics, including light-emitting diodes.
8	An investigation into the structure, microhardness, intermolecular interactions, electrical and optical properties in lead-free (CH3CH2CH2NH3)2[BiC	Dinesh Kulhary, Neeraj Dhariwal	Organic-inorganic hybrid perovskites known for their exceptional optoelectronic properties have garnered considerable attention over the years. In this study, the Hirschfeld surface analysis has been employed to uncover significant interactions among the organic and inorganic moieties. The Micro hardness of the synthesized crystal was estimated using the microhardness indentation method and the crystals lie in the

	l5] single crystals for optoelectronic applications		category of hard materials. HOMO-LUMO of the compound was determined to study the diverse interactions among the molecules. Further, the average value of the distortion parameters, were calculated to be DI (Bi-Cl) = 0.061800 and cot * 10^3 = 4.88, respectively. Impedance spectroscopy and modulus spectroscopy were employed to uncover the charge conduction mechanism in the crystal. The compound's optical band gap and activation energy were calculated to be 3.5 eV and 0.64 eV, respectively. This thorough investigation has revealed interesting properties, making $(CH_3CH_2CH_2NH_3)_2[BiCl_5]$ a significant advancement in the research of organic–inorganic hybrid perovskites.
9	Study of Structural, Magnetic, Electronic, and Optical Properties of Fe2MnSn Heusler Alloy	Ashok Yadav & Vivek Kumar Jain	The temperature-dependent magnetic properties of different samples of Fe_2MnSn prepared by high-energy ball milling and as-melted alloys were investigated using vibrating sample magnetometer. The findings were compared between the bulk samples and samples milled for 30, 60, and 90 min. We also measured the structural properties with x-ray diffraction. Notably, the Nano-sized samples exhibited significant enhancements in both saturation magnetization and coercively relative to the bulk samples. These improvements are attributed to structural disorder and size effects. We also studied the electronic and optical properties of the Fe_2MnSn alloy and found that the alloys have spin polarization near 100% for a lattice range of 5.35–5.85 Å, demonstrating potential for use in spintronic applications due to half-metallic ferromagnetism. The alloy shows potential for use in photovoltaic devices due to its high optical conductivity and real and imaginary dielectric properties in both the visible and ultraviolet energy range.
10	Tailored 2D Bi2WO6-rGO hybrid composites for advanced flexible and wearable supercapacitor devices	Neeraj Dhariwal , Preety Yadav, Dinesh , Somdatta Singh, Ramesh Chandra , O.P. Thakur , Vinod Kumar	The flexible and wearable power sources are key to modern electronics. In this study, the flexible and wearable super capacitor based on 2D materials incorporated with carbon fabric has been fabricated, compatible with flexible electronics. Super capacitor based on Bi_2WO_6 loaded carbon fabric shows capacitance value of 56 Fg^{-1}, which has been further enhanced to 76 Fg^{-1} and 332 Fg^{-1} with slight modification in material structure by introducing g-C_3N_4 and rGO respectively. Bi_2WO_6/rGO based flexible super capacitor demonstrated a remarkable retention after 10,000 cycles and an excellent performance even after multiple flexibility tests. Utilizing these excellent properties of the super capacitor, a watchstrap device has been fabricated to power a display conforming its practical utility and commercial viability.

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144	Mr. Navnath Sathe, s. Ritu Sharma, Ms. Kavita Vijay, Dr. Rajkumari Thagele	Alcohol	2024	978-81-977147-6-4
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175	Ashish Jorasia, Ravindra Singh	Post human Economies and Industrial Revolution 5.0: Metamorphosing Techno-Economic Development, Economy	2025	9798369384022

Patents

Name of the Inventors	Title of Patent	Patent Number	Date of Award	Remarks
Mr. Ayush Kr. Yogi, Dr. Abid Hussain, Dr. Garima Tyagi, Dr. Amit Sharma	PROFFERED MODEL FOR AUTOMATED SOFTWARE TESTING AND TEST CASES EXCISION USING ARTIFICIAL NEURAL NETWORK APPROACH	202411017025	04-05-2024	It aims to optimize test case selection and excision, enhancing testing efficiency, accuracy, and reliability while reducing manual intervention. This model addresses the growing demand for intelligent, adaptive software quality assurance in complex software systems.
Dr. Manish Tiwari, Mr. Rohit Maheshwari, Dr. Abid Hussain, Dr. Amit Sharma	A UNIFIED MODEL TO DETECT FAKE IMAGES USING DEEP LEARNING ALGORITHMS	202411037468	06-21-2024	This Patent integrates multiple detection strategies into a single unified model, it enhances accuracy and robustness in distinguishing real images from forgeries, addressing the growing challenge of image-based misinformation.
Teerthesh Singh, Jaya Bhardwaj, Mayank Prajapati, Dr. Krishna Kumar Soni, Dr. Vivek Kumar Jain Ms. Nasreen Ansari ,Dr. Rakhee Chaudhary	RESONANT RHYTHMS: DECODING THE SYMMETRIC VIBRATIONAL MODES OF WATER	202511022132	21-03-2025	This Patent focuses on identifying and analyzing the symmetric vibrational modes, providing insights into molecular resonance patterns that could have applications in chemistry, biology, and material sciences. This work bridges molecular physics with practical technological and analytical innovations.

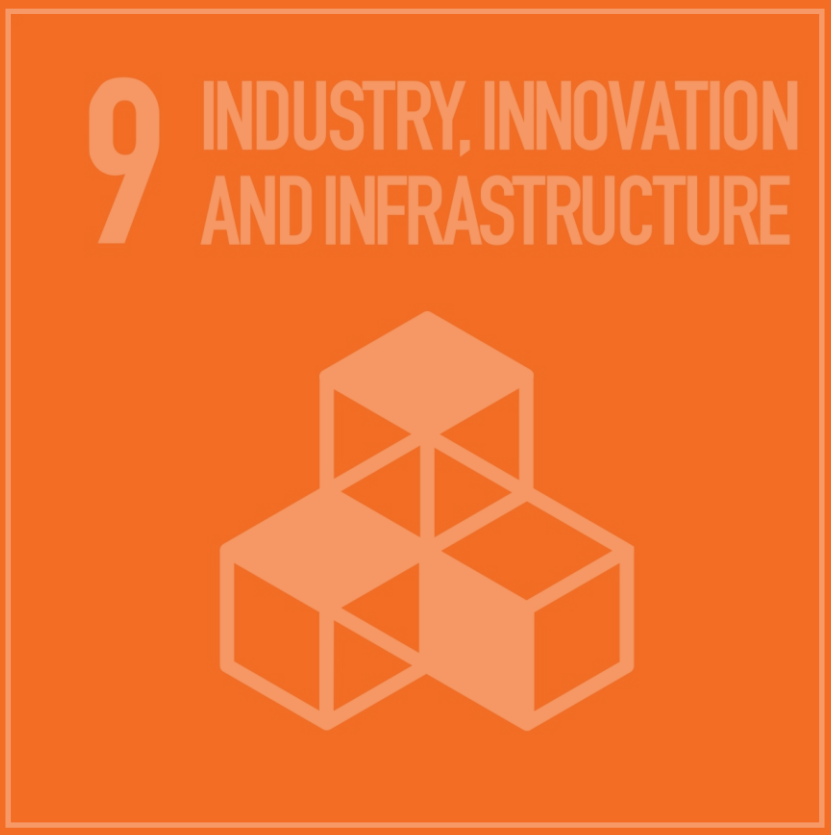
Contribution and Role through Collaborations/MOUs

Sr. No	Name of the organization with whom MOU/Collaboration being signed	Scope of MoUs
1	REVE Automation LLP, India	The purpose of this MOU is to promote research, academic and educational cooperation, and based upon the principle or respect for each other's independence and mutual benefits, the two institutions will carry out the following activities: **1.** Bridging the gap between Industry and University. **2.** Provide opportunity for training for upcoming production able technologies Staff of CPUR. **3.** Provide opportunities for training to students of CPUR. **4.** Exploring areas for cooperation on a continuous basis**.** **5.** REVE Automation LLP will provide on-site training to students and faculty on high-end technologies which are commonly used in industry.
2	Mibiz Cyber Forensics, Kerala	Mibiz 'Enrichment, Enlightenment, and Development Campus Connect', programme should create a Vibrant Knowledge Consortium -developing & maintaining a successful talent pool. Mission to create "Knowledge economy with Enlightened Citizenship"

3	Janardan Rai Nagar Rajasthan Vidhyapeeth, Dabok Udaipur Rajasthan	Both institutes agree to develop the following collaborative activities in the academic areas of mutual interest on the basis of equality and reciprocity The two institutions shall seek to promote a. **1.** Faculty exchanges **2.** The exchange of faculty 'to the mutual benefit of both institutions. **3.** Collaboration in Teaching, research and development and consultancy studies in the field of mutual interest. **4.** Exchange of academic materials and publications. **5.** Conducting Lectures.
4	EUSAI, Pune	EUSAI intends to create a much-needed sports culture in the country by invalving the interests of the general public through identities like logos, frequent exposure through TV and creating a fan-following for the Universities. EUSAI has helped with numerous scholarships, equipment supplies and media exposure and now want to take pan-India University sports to a higher level
5	Data Flair Web Services PVT, Indore	The purpose of this Memorandum of Understanding is to establish a framework for collaboration between the University and the Data Flair Company to benefit the students of the University through the free Certification courses that the Data Flair Company is providing.
6	Aim India Pvt Ltd.	**1.**The budding graduates from the institutions could play a key role in Financial consultancy's up-gradation, innovation and competitiveness of an industry. Both parties believe that close co-operation between the two would be of major benefit to the student community to enhance their skills and knowledge. **2.** Internship & Placement of Students: The ORGANIZATION will recruit around 25-30 candidates for Internship followed by PPO (Pre Placement Offers) to the Best performing candidates with Salary range between Rs. 4.5 LPA to 6.5 LPA. The number of PPOs and salary range may vary depending on the performance of the candidates. The list of shortlisted candidates under PPO will be shared to the University.
7	Keshav Mahavidhalaya	**1.** The purpose of this MoU is to establish a collaborative relationship between the Keshav Mahavidyalaya and Career Point University to promote educational and professional development in the field of Quality Education, Training, Community Project, Extension Activities, Field work, Faculty Development. **2.** The purpose of the MoU is to develop co-cooperation and promote mutual understanding and excellence in practice-based 8education, research and knowledge exchange between the parties so that the research and knowledge produced are used for further research
8	Sri Karan Narendra Agriculture University, Jobner (Jaipur) (Raj.)	Rajasthan research for desire and development, Medical Microbiology, intend to particularly Environmental develop co-operation and collaboration in in Plant Biotechnology technology, Molecular Nanotechnology, biotechnology, Bioinformatics and other agreed activities that further the aims and objectives of the Institutions as follows: **1.** To limitations institution encourage and use their reasonable endeavours to effect, within the of to placements, participating the the Institutions' other innovation, by resources, policies and procedures, visits from one members of the academic, research, skill

		training, entrepreneurship in teaching, training, and other staff for the purpose of research for development programs and other agreed activism, **2**. To develop within the limitations of the Institution's resources, policies and procedures, collaborative work plans that specify the activities to be undertaken, objectives and targets, implementation mechanisms, role and responsibilities, and resource contributions.
9	ICAR- Indian Institute of Soil and Water Conservation, Research Centre, Kota (Raj.)	The general objective of this Memorandum of Understanding (MOU) is to stimulate and facilitate the development of collaborative and mutually beneficial programs which serve to enhance, the research and training related intellectual life and cultural development on both campuses, and to 4 contributions to increased international cooperation. Thus, first party and Second party will support of their mutual interests of education and research.
10	Samatrix Connsulting Private Limited, Gurgaon	**1.** Samatrix Consulting Private Limited will provide subject matter expertise for establishing Industry focused Center of Excellence at Career Point University to impart knowledge (through an industry integrated curriculum) and help to develop expertise in Machine Leaming & Artificial Intelligence. **2.** Samatrix Consulting will provide the following services at its own cost support the curriculum: **(A)** Samatrix will provide subject matter experts on site s per the curriculum with relevant. industry experience and qualification **(C**) Evaluation of assignment and midterm and end t=rm papers **(D)** Upgradation of course content or elective as per latest industry requirement Faculty development program (2-3 days per year) with Certificate **(E)** Guide the enrolled students to solve the Eve business problems
11	Safeducate Learning Pvt. Ltd., New Delhi	The general purpose of this MOU is to facilitate industry and research cooperation between the parties hereunder based upon the principles of mutual benefit and may include the following general cooperation areas; **1.** Joint industry and university initiatives in learning associated with logistics & supply chain management **2.** Exchange of visiting experts for the purpose of conducting learning sessions **3.** Discussion for the independent research exchange of facilites and equipment based on the policies of both entities for collaborative **4.** Exchange scholarly information including research papers, indices to these, books and magazines on relevant subjects and potential joint projects where possible and appropriate
12	Regenesys Business School, Mumbai, Maharashtra	**1.** Collaborative research activities. **2.** Collaborative consultancy (SIP, industry, research, seminars, projects, conferences, workshops, MDP, FDP and training) leading to grants and or revenue generation; **3.** Any other academic activities.

13	JRN Rajasthan (Deemed to be University) Udaipur	Both institutes agree to develop the following collaborative activities in the academic areas of mutual interest on the basis of equality and reciprocity. The two institutions shall seek to promote a. **1.** Faculty exchanges **2.** The exchange of faculty 'to the mutual benefit of both institutions. **3.** Collaboration in Teaching, research and development and consultancy studies in the field of mutual interest. **4.** Exchange of academic materials and publications. **5.** Conducting Lectures. **6.** Undertaking joint research. **7.** Attachment of staff purpose of curriculum development and review, upgrading of teaching and research skills. **8.** Participating in seminars, workshops, conferences, symposiums and other types of academic discussions. **9.** Conducting joint consultancy work.
14	SPIC MACAY	The purpose of this MoU is to establish a framework for mutual cooperation between CPU, SPIC MACAY to organise cultural events, workshops, and educational programmes aimed at promoting Indian classical music, dance, and heritage in order to enhance the cultural and artistic development of students at CPU, Kota.
15	NISM	NISM is an institution established by Securities and Exchange Board of India with the objective of capacity building in the securities market. Securities market is growing industry where there are ample opportunities of employment and self-employment. The students who wish to pursue their career in the financial market would largely benefit if they study securities market subjects. Therefore, the objective of this letter of understanding is to train the students about the securities markets subjects and help them to get the NISM certificates which will enhance their knowledge and employability.



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