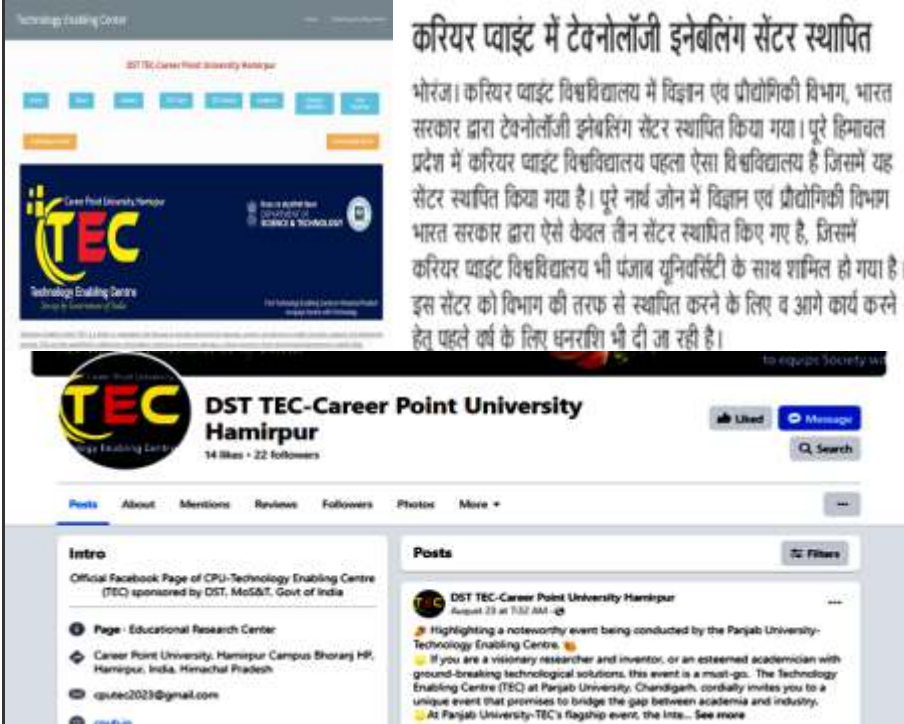


CPU - TEC IN PRINT & SOCIAL MEDIA



करियर प्वाइंट में टेक्नोलॉजी इनेबलिंग सेंटर स्थापित

भारत सरकार द्वारा टेक्नोलॉजी इनेबलिंग सेंटर स्थापित किया गया। पूरे हिमाचल प्रदेश में करियर प्वाइंट विश्वविद्यालय पहला ऐसा विश्वविद्यालय है जिसमें यह सेंटर स्थापित किया गया है। पूरे नार्थ जोन में विज्ञान एवं प्रौद्योगिकी विभाग भारत सरकार द्वारा ऐसे केवल तीन सेंटर स्थापित किए गए हैं, जिसमें करियर प्वाइंट विश्वविद्यालय भी पंजाब यूनिवर्सिटी के साथ शामिल हो गया है। इस सेंटर को विभाग की तरफ से स्थापित करने के लिए व आगे कार्य करने हेतु पहले वर्ष के लिए धनरशि भी दी जा रही है।

सी.पी.यू. में प्रदेश का पहला टेक्नोलॉजी इनेबलिंग सेंटर स्थापित

हमीरपुर, 21 सितम्बर (गजीव): करियर प्वाइंट विश्वविद्यालय में विज्ञान एवं प्रौद्योगिकी विभाग, भारत सरकार द्वारा टेक्नोलॉजी इनेबलिंग सेंटर स्थापित किया गया। पूरे हिमाचल प्रदेश में करियर प्वाइंट विश्वविद्यालय पहला ऐसा विश्वविद्यालय है जिसमें यह सेंटर स्थापित किया गया है। पूरे नार्थ जोन में विज्ञान एवं प्रौद्योगिकी विभाग, भारत सरकार द्वारा ऐसे केवल 3 सेंटर स्थापित किए गए हैं, जिसमें करियर प्वाइंट विश्वविद्यालय भी पंजाब यूनिवर्सिटी के साथ शामिल हो गया है।

इस सेंटर को विभाग की तरफ से स्थापित करने के लिए व आगे कार्य करने को पहले वर्ष के लिए धन

रशि भी दी जा रही है। टेक्नोलॉजी इनेबलिंग सेंटर में विभिन्न लोगों जैसे कि शोधकर्ता विद्यार्थी, अध्यापक, स्टार्टअप-एंट्रप्रेन्योर व इंडस्ट्री के द्वारा विभिन्न तकनीकों को आगे बढ़ाने के कार्य किए जाएंगे।

यह सेंटर प्रथम वर्ष में पंजाब विश्वविद्यालय का सेटलैइट सेंटर रहेगा। इस सेंटर का उद्देश्य प्रौद्योगिकी विकास में उद्योग जगत और सामाजिक सेवा के क्षेत्र को आगे बढ़ाने में सहायक सिद्ध होगा। यह सेंटर तकनीकों का मूल्यांकन, शोध और रिपोर्ट आदि तैयार करके प्रदेश व देश को आत्मनिर्भरता की ओर ले जाने का कार्य करेगा।

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विज्ञान एवं प्रौद्योगिकी विभाग
DEPARTMENT OF
SCIENCE & TECHNOLOGY



Technology Enabling Centre
Set-up by Government of India

NEWS
LETTER
Year 1 Volume 1
(April-August, 2023)

Dr. Sanjeev Kumar Sharma



Vice Chancellor
CPU Hamirpur (H.P.)

Dr. (Mrs.) Anita
Aggarwal



Head, TDT Division
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Technology Enabling Centre
Established by the Department of Science and Technology, MoS&T, Govt of India

CAREER POINT UNIVERSITY
Tikker, Bhoranj, Hamirpur (H.P.), India - 176041
(NAAC Accredited University)

About the TEC

The Technology Enabling Centre (TEC) emerges as a significant initiative, established under the auspices of the Department of Science and Technology (DST), Ministry of Science & Technology, Government of India in March 2023. Nestled within the vibrant academic environment of Career Point University in Himachal Pradesh, India, TEC serves as a dynamic hub for fostering technological innovation and advancement. With a mission to bridge the gap between cutting-edge research and practical application, TEC at Career Point University is poised to play a pivotal role in shaping the technological landscape of the region. This collaborative venture between the government, academia and industry underscores a commitment to propel India's scientific competence, providing a dedicated platform for researchers, scholars, and industry experts to converge, exchange ideas, and collectively contribute to the nation's

progress in the realm of science and technology. TEC stands as a testament to the transformative power of collaboration, reflecting a shared vision for a technologically empowered future.



Dr. Kuldeep Kumar
Coordinator



Dr. Rahul Sharma
Co-Coordinator



Er. Puneet Kumar
Project Engineer



Ms. Richa Sharma
Project Associate-1

Objectives

- To create a Research and Innovation Ecosystem for Technology Development in the University and other stakeholders in the vicinity.
- To provide a platform to students/ faculty/ startups/ entrepreneurs for networking with industry, other institutes, National laboratories, etc.
- To develop the lab facilities for advanced research and technologies in the University.
- To enable students/ faculty/ stakeholders to become useful human capital by commercializing their products with the support of Incubators/ MSMEs/ Market.

Program Advisory Group (PAG)

The PAG of a DST sponsored TEC plays a crucial role in guiding and advising the center on its programs and initiatives. The primary responsibilities of the PAG include strategic guidance,

review & evaluation, technology assessment, stakeholder engagement, quality assurance, etc. Thus, PAG acts as a critical external body that provides expertise, oversight, and strategic direction to the TEC, contributing to its success and impact in the field of science, technology and innovation.

Sr. No.	Name & Designation	Address
The Vice Chancellor of the University (Chairperson)		
1.	Dr. Sanjeev Kumar Sharma Vice Chancellor	Career Point University, Hamirpur (H.P.)
DST Representative (Member)		
2.	Dr. (Mrs.) Anita Aggarwal Head	Department of Technology Development Transfer Department of Science & Technology, Ministry of Science & Technology, Gol, New Delhi
EAG Member Nominated by DST (Member)		
3.	Dr. (Mrs.) Sudha Mysore Member	EAG, Department of Science & Technology, Ministry of Science & Technology, Gol, New Delhi
TEC Coordinators Nominated by DST (Members)		
4.	Prof. G.S. Prasad TEC Coordinator	University of Hyderabad, Hyderabad, Telangana
5.	Prof. Anirbid Sircar TEC Coordinator	Pandit Deendayal Energy University, Gandhinagar, Gujarat
TEC Coordinators (Members)		
6.	Prof. Manu Sharma TEC Coordinator	Punjab University, Chandigarh
7.	Dr. Kuldeep Kumar TEC Coordinator	Career Point University, Hamirpur (H.P.)
Partner Institutes (Members)		
8.	Dr. (Mrs) Pamita Awasthi Associate Professor & Nodal Officer Incubator	Department of Chemistry NIT Hamirpur (H.P.)
9.	Sh. Anil Singh General Manager	Catalyst (A Technology Business Incubator), IIT Mandi, Kamand, District Mandi (H.P.)
10.	Dr. Arun Chandan Regional Director	Regional-cum-Facilitation Centres (RCFC) (NR-I), Research Institute in Indian Systems of Medicine (RIISM), Joginder Nagar, Dist. Mandi (H.P.)
11.	Dr. Surjeet Singh Randhawa Principal Scientific Officer	Himachal Pradesh Council for Science, Technology & Environment (HIMCOSTE), Shimla, Govt. of H.P.
12.	Dr. Madan Lal Head	Department of Microbiology RKG MCH, Hamirpur (H.P.)

13	Dr. Deepak Pant Professor	Department of Environmental Sciences, Central University of Himachal Pradesh, Dharmshala (H.P.)
14	Dr. Dinesh Kumar Principal Scientist	Department of Chemical Technology, CSIR-IHBT, Palampur, Kangra (H.P.)
15.	Dr. Sandeep Sharma Director in-charge	Himalyan Forest Research Institute (HFRI), Conifer Campus, Panthaghati,, Shimla (H.P.)
16.	Dr. Neelam Kumar AMO & Manager (Deployed as Lecturer for Teaching at RGGPGAC)	Government Ayurvedic Pharmacy Joginder Nagar, Mandi (H.P.)
17.	Dr. Dharam Pal Head (Acting) Principal Scientist	IARI, Regional Station Amartara Cottage, Shimla
Industry/ Industry Association/ MSME (Members)		
18.	Sh. Rajender Guleria President	Baddi, Barotiwala, Nalagarh Industries Association, Baddi (H.P.)
19.	Sh. Gagan Kapoor Chairman	Confederation of Indian Industry Himachal Pradesh State Office Block No. 3, Dakshin Marg Sector 31-A Chandigarh-160030
20.	Sh. Shailesh Kumar Singh Assistant Director	Micro, Small & Medium Enterprises (MSME), Development Institute, Solan (H.P.), Govt. of India
21.	Mr. Narender Bhardwaj Chair	PHD Chamber of Commerce and Industry Himachal Pradesh Chapter PHD House, 4/2 Siri Institutional Area August Kranti Marg, New Delhi 110016
Management Personnel (IP/ Tech. Transfer/ Tech. Commercialization) (Member)		
22.	Sh. Saurabh Trivedi Founder IP Samadhan Partner Agility Ventures & Mentor of Subhash Place, Change at AIM, Niti Aayog	Tf-22, Third Floor, Pearls Omaxe Tower Netaji New Delhi-110085

Glimpses of Activities:

A) TEC Conclave 2023:

Dr. Kuldeep Kumar, Coordinator, DST-TEC, CPUH has participated in the TEC conclave organized by the DST at the University of Hyderabad on 17-18 April 2023. The conclave served as a platform for members and teams representing TECs from various 22 TECs across the country to come together, fostering a shared



understanding and clear focus on the working and functioning of TECs. The event has provided a valuable opportunity to network with all TECs, exchange ideas, and gain insights into best practices. This collaborative effort is crucial for creating a cohesive and synergistic approach among TECs, especially those in their early stage of establishment (i.e. Phase-2 TECs).

B) Visits to TECs:

A delegation from CPUH recently undertook visits to Panjab University and Chitkara University TECs in close proximity. The purpose was to gain a more nuanced understanding of the practical implementation of TEC's objectives and key indicators at the grassroots level. During these visits, the team engaged in extensive discussions with TEC officials, delving into various facets to ensure the effective establishment and operationalization of CPU-TEC at the ground level.



CPU TEC Team interacting with the Officials at PU-TEC



CPU TEC Team interacting with the Officials at CU-TEC

C) Visits to Local Govt. Bodies:

Building meaningful relationships is paramount when aiming to connect with grassroots innovators, academicians, and researchers. This strategic focus facilitates seamless access to technologies and innovations within small industries and MSMEs, while also providing valuable insights into the challenges they face. Our initiatives have involved active engagement with officials at DIC and MSME, coupled with interactions with faculty members and students at NIT Hamirpur.



D) Visits to Industries:

For the successful realization of TEC objectives, namely technology development and transfer/commercialization, academia-industry linkages play an exceedingly crucial role. Er. Puneet Kumar, Project Engineer, CPU-TEC had the opportunity to engage with Mr. Gagan Kapoor, Chairman of CII (Himachal Pradesh) and Chairman of Pulkit Industries, as well as Dr. P. J. Singh, MD of Tynor Orthotics Pvt. Ltd. The purpose of this interaction was to discuss TEC's



objectives and explore potential collaboration on industry-related challenges in future projects. Continuing in this direction, we have also visited Confederation of Indian Industries (CII), Chandigarh and submitted an application for membership with the (CII), Himachal Pradesh. The Council has approved our application in its third meeting. This step is anticipated to cover the way for significant opportunities in the industrial sector.



E) Interaction Meetings with Stakeholders:

Numbers of meetings have been held with incubates, students, researchers, and innovators associated with CPU Hamirpur, NIT Hamirpur, and PU, Chandigarh to understand the challenges they face in developing, protecting, or commercializing technologies. Additionally, general meetings were also organized to promote TEC's objectives and establish connections with an increasing number of researchers.



F) Participation in Workshop/ Seminar/ Conference:

Officials from CPU-TEC actively engaged in workshops, seminars, and conferences to foster interactions with grassroots innovators, professionals, women from Self Help Groups



(SHGs), and startup companies. The focus of these engagements encompassed Technology Mining, Transfer of Technology (ToT), protection of Intellectual Property (IP), and sharing and addressing challenges collectively.

G) Technology Mined for Transfer of Technology (ToT) for Commercialization:

Following all the meetings, interactions, and participations, CPU-TEC has identified about 20 technologies at various institutions, each at different Technology Readiness Levels (TRL). These technologies require attention and focus for the enhancement of TRL, development, commercialization, and securing sponsorships.

Out of these, the following technologies are of TRL 9:

- Tiller for Making Soil Loose and Smooth (developed and patented by Mr. Rajesh Kumar



Tiller "Chhota Nandi"

Incubatee, NIT, Hamirpur, H.P.) is very useful in the hilly areas, like H.P., where existing heavy machines are not applicable in the farms for agriculture. In addition, in modern culture animal husbandry is decreasing day by day which ultimately lowering the enthusiasm of people towards cultivation. In this technology, a low-cost and lightweight power weeder named "Chhota Nandi" is introduced to fulfill the current agricultural requirement for the cultivation of different crops in states like Himachal Pradesh.

- Biosensors Equipped Lung Cancer-Detecting Device (developed and patented by Mr.

Ashish Jaiswal, CPU, Hamirpur, H.P.) is consisting of coplanar electrode configuration and a simple microfluidic channel on a glass substrate, and is fabricated using standard photolithography and cast molding techniques. It has a selectivity probe, such as an aptamer, which is one of the



Biosensors Equipped Lung Cancer- Detecting Device

candidate recognition layers that can be used to detect important biomolecules. Here an electrical sensing platform is built based on amine-terminated aptamer modified-gold electrodes for the specific, label-free detection of a human lung carcinoma cell line.

- Mr. Rattan Chand, an incubatee at Pioneer Incubator, CPUH, has formulated four Ayurvedic powders and medicines namely, Madhuhar, Orthocare, Udrahar and M Clear. These formulations are designed to address concerns related to diabetes, arthritis pain,



Madhuhar Orthocare



Udrahar M Clear

knee pain, digestive issues, gas/ acidity, and women's health problems during menstruation.

H) Problems Identified

Several challenges have been identified in various technological domains as discussed below:

- Mr. Ashok Kumar Nadda, leading the bioplastic development at HIMCOSTE, Shimla, H.P. is encountering hurdles related to the availability of advanced instrumentation facilities required for testing purposes.
- Ms. Anita Devi is addressing issues related to the packaging and shelf life of her papaya burfi product. Despite the absence of oil, chemicals, and sugar in her preparation, the current packaging in a cardboard box is susceptible to moisture, leading to spoilage within a week.
- Mr. Rajat is grappling with supply challenges in the distribution of AGM batteries across India.
- Ms. Sumiksha Govil is faced with the intricate task of accurately measuring materials for her paper-based cosmetic containers. Her focus is on creating environmentally friendly options like biodegradable plates, bowls, and glasses.
- Dr. Priyanka, an Associate Professor Botany, CPUH is working on a project to produce biodegradable plates using pulp sheet of waste plant leaves for commercial applications. Her focus is on developing an environmentally friendly and commercially viable process for manufacturing these plates.



Pulp Sheet of Waste Orange Peel



Pulp Sheet of Waste Rice Bran



Pulp Sheet Preparation from Waste Plant Leaves

I) Patent Filed / Published:

CPU-TEC has facilitated the filing of three patents by August 2023, with two of them already published.

- The first published patent includes processes for the extraction and purification of Keratinase from a bacterial strain. This invention relates to the field of isolation of bacterial strain and extraction of enzyme. More particularly it relates to the process of isolation of Bacillus thuringiensis VP4 from poultry soil waste and isolation of keratinase enzyme.
- The second published innovation relates to a synergistic natural herbal composition and its formulation thereof, designed to manage diabetes and improve overall health. The composition comprises a precise combination of herbs and plants known for their potential blood sugar lowering effects and other health benefits. The invented herbal composition works by regulating blood sugar levels, improving insulin sensitivity, promoting pancreatic cell regeneration, and providing antioxidant and anti-inflammatory effects.

(1) PATENT APPLICATION PUBLICATION (IP) INDIA (2) Date of Filing of Application: 17/07/2023		(2) Application No: 202311046121 A (4) Publication Date: 11/08/2023	
(3) Title of the invention: EXTRACTION AND PURIFICATION OF KERATINASE FROM BACTERIAL STRAIN			
(1) International Classification: A61K 18/01, A61P 01/00, C12N 1/00, C12N 1/10, G01N 3/00 (2) Domestic Application No: NA Filing Date: NA (3) International Publication No: NA (4) Prior Art Address to Applicant Number: NA Filing Date: NA (5) Domestic Address to Applicant Number: NA Filing Date: NA		(1) Name of Applicant: Casee Post University Address of Applicant: Casee Post University, Bhatnagar, Bhatnagar (Jharkhand), Bhatnagar, MDR 15, Bhatnagar Postcode: 726101, Bhatnagar (2) Name of Applicant: NA Address of Applicant: NA (3) Name of Invention: NA (4) Name of Invention: NA Address of Applicant: (Casee Post) Casee Post University, CPUH Casee Post University, Bhatnagar, Bhatnagar Postcode: 726101, Bhatnagar (5) Name of Invention: NA Address of Applicant: Assistant professor, Dept. of Chemistry, Casee Post University Bhatnagar (6) Name of Invention: NA Address of Applicant: Assistant professor, Dept. of Chemistry, Casee Post University Bhatnagar (7) Name of Invention: NA Address of Applicant: Assistant professor, Dept. of Chemistry, Casee Post University Bhatnagar (8) Name of Invention: NA Address of Applicant: Assistant professor, Dept. of Chemistry, Casee Post University Bhatnagar (9) Name of Invention: NA Address of Applicant: Assistant professor, Dept. of Chemistry, Casee Post University Bhatnagar (10) Name of Invention: NA Address of Applicant: Assistant professor, Dept. of Chemistry, Casee Post University Bhatnagar	
(3) Abstract: The present invention relates to the field of isolation of bacterial strain and extraction of enzyme. More particularly the present invention relates to the process of isolation of Bacillus thuringiensis VP4 from poultry soil waste and isolation of keratinase enzyme. Further isolated bacterial strain produced and extracted keratinase enzyme that have ability to degrade poultry chicken feather. The said enzyme extracted and purified by the present invention is applicable to produce natural fertilizer and protein source for the animal by a pollution free method.			
No. of Pages: 18 No. of Claims: 1			