



Quarterly Newsletter

July - September 2025



FROM THE HOC'S DESK



It gives me immense pleasure to present the Quarterly Report of the CIL Innovation & Incubation Centre, IIT (ISM) Dhanbad. This newsletter contains all the activities of center from July 2025 to September 2025.

The month from July to September 2025 has been marked by a series of events. The Department demonstrated the facilities, products, and equipment of the CII centre to the students, executives and other guest on their visits.

The CIL Innovation & Incubation Centre (CII Centre), IIT (ISM) Dhanbad, organized the Smart & Sustainable Ideathon – Phase III with 32 student participants. The Centre also launched its Pre-Incubation Program receiving nine

innovative proposals currently under review.

In collaboration with M/s TechXEarthSpace Pvt. Ltd., the Centre is implementing a project to capture CO₂ from the atmosphere and inject it into coal mine goafs for fire control and carbon sequestration. Ongoing projects include “AccuDepthPro,” a precision trench depth profiling device, and “Kaere,” a breath-based diagnostic platform for glucose and lung health analysis.

The Centre's incubatee, M/s TechXEarthSpace Pvt. Ltd., earned the First Runner-Up position for its solution on “Geological storage of captured CO₂ in the coal-bearing regions of India.” Additionally, the Centre generated ₹3,50,000 through its Entrepreneur Excellence Program (E2P) in collaboration with Moonpreneur India Pvt. Ltd. M/s TechXEarthSpace Pvt. Ltd. continues as a pre-incubatee with its project “Hy-CCUS System.”

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you can expect:**

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Students Visit



A brief demonstration of the facilities of CII Centre Labs and showcasing the products developed in the CIL Innovation & Incubation Centre to the students of DPS, Bokaro .

A brief demonstration of the facilities at the CII Centre Labs, along with a showcase of the innovative products developed at the CIL Innovation & Incubation Centre, was organized for the students of DPS, Bokaro. The visit aimed to provide students with exposure to advanced technologies, research infrastructure, and innovative projects, inspiring them to explore opportunities in science, technology, and entrepreneurship.





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A brief demonstration of the facilities at the CII Centre Labs, along with a showcase of the innovative products developed at the CIL Innovation & Incubation Centre, was organized for the students of DPS. The visit provided the students with valuable exposure to cutting-edge technologies, research facilities, and innovation-driven projects, encouraging them to develop curiosity and interest in science, technology, and entrepreneurship.





Ideathon



The CIL Innovation & Incubation Centre organized a Smart & Sustainable Ideathon – phase III (S2 Mining Ideathon - phase III). A total of 32 students have participated in the program. The program began on 21st August 2025



CIL INNOVATION & INCUBATION CENTRE **IIT ISM DHANBAD** **Legacy that Inspires the Future** **100 Years of Excellence in Education & Research**

PRIZES

FIRST PRIZE: ₹ 50,000
SECOND PRIZE: ₹ 30,000
THIRD PRIZE: ₹ 20,000

SMART & SUSTAINABLE MINING IDEATHON

Be MINING IDEATHON

BENIFITS:-

- ✓ Selected team will be given an opportunity for pre-incubation subject to qualifying criteria
- ✓ Seed Funding up to ₹ 5 Lakh for startups
- ✓ Certificate of Completion
- ✓ IPR credit to the developing team and the mentor

SCAN FOR PROBLEM STATEMENT

QR CODE

SCAN TO REGISTER
BEFORE 15th SEPTEMBER 2025

TIMELINE:

Level 1 – Till 15th September 2025
Level 2 – To be notify later
Level 3 – To be notify later

CONTACT US
CIL INNOVATION & INCUBATION CENTRE
4th Floor
12th Building
IIT (ISM) Dhanbad
E-mail - cii@iitm.ac.in

The CIL Innovation & Incubation Centre, IIT (ISM) Dhanbad, organized the “Smart & Sustainable Ideathon – Phase III (S2 Mining Ideathon - Phase III)” to encourage innovative thinking and sustainable solutions in the mining sector. The program commenced on 21st August 2025 and witnessed enthusiastic participation from 32 students. Through this initiative, participants explored creative ideas aimed at addressing real-world challenges in mining using smart and sustainable technologies. The Ideathon served as a platform for students to showcase their problem-solving skills and gain exposure to innovation-driven approaches in the industry.





Pre-Incubation Program



The CIL Innovation & Incubation Centre has invited proposals for the Pre-Incubation Program, which began on 21st August 2025. A total of 9 proposals have been received. The scrutiny of the proposals is ongoing.

The CIL Innovation & Incubation Centre launched a call for proposals for its Pre-Incubation Program, which began on 21st August 2025. The program aims to identify and nurture innovative ideas from students, researchers, and aspiring entrepreneurs by providing them with mentorship, technical support, and access to laboratory facilities. A total of nine proposals have been received from various domains, reflecting diverse and promising ideas. The scrutiny and evaluation of these proposals are currently in progress to shortlist potential candidates for pre-incubation support.

CIL INNOVATION & INCUBATION CENTRE

**CALL FOR PROPOSAL
PRE-INCUBATION PROGRAM**

WANT TO TURN YOUR IDEA INTO STARTUP?

**APPLY FOR THE
PRE-INCUBATION PROGRAM TODAY**

**SEED FUND UPTO ₹5 LAKH TO THE
SELECTED STARTUPS**

Limited Seats **Limited Seats**

INNOVATION **STARTUP** **GROWTH**

ELIGIBILITY

- Individuals or teams with a business idea or prototype
- Startups at the ideation or early development stage
- Commitment to participate in the full duration of the program
- Ability to demonstrate the potential impact and scalability of the idea

BENEFITS

- Mentorship
- Labs & Infrastructure
- Workspace
- Workshops and Training
- Networking Opportunities
- Seed Funding

DOWNLOAD FORM

APPLY BEFORE 20th SEPTEMBER 2025

Applicants must send applications in hard copy to "The Executive officer, CII Centre, 4th Floor, I2h building, IIT (ISM) Dhanbad" or email at cii@iitism.ac.in

Note - Applying for the pre-incubation program does not guarantee for seed funding.

<http://www.iitism.ac.in>





Collaborations



Collaborated with M/s TechXEarthSpace Private Limited to implement a project that involves designing, developing, and implementing a system to capture CO₂ from the atmosphere, followed by its injection into coal mine goaf to control mine fires and enable CO₂ sequestration.

Benefits: M/s TechXEarthSpace will be the pre-incubatee of the CII Centre, and the technology developed during the period will be shared between the two parties.

The CIL Innovation & Incubation Centre collaborated with M/s TechXEarthSpace Pvt. Ltd. to implement a pioneering project focused on designing, developing, and deploying a system for capturing CO₂ from the atmosphere, followed by its injection into coal mine goaf areas to control mine fires and facilitate CO₂ sequestration. This initiative aims to address environmental and safety challenges in the mining sector through sustainable technological innovation.

Under this collaboration, M/s TechXEarthSpace Pvt. Ltd. will serve as a pre-incubatee of the CII Centre, and the technology developed during the project period will be jointly shared between both parties, fostering mutual growth and advancement in clean and sustainable mining practices.





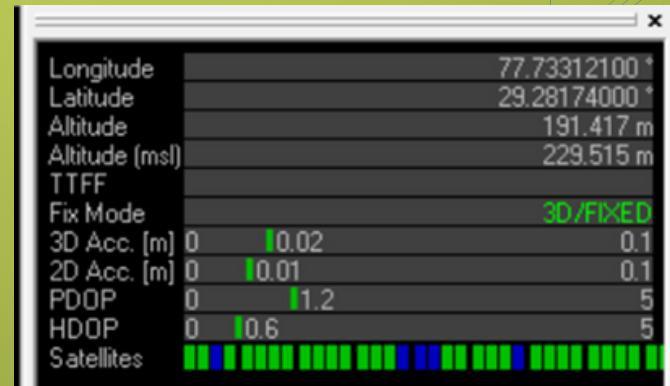
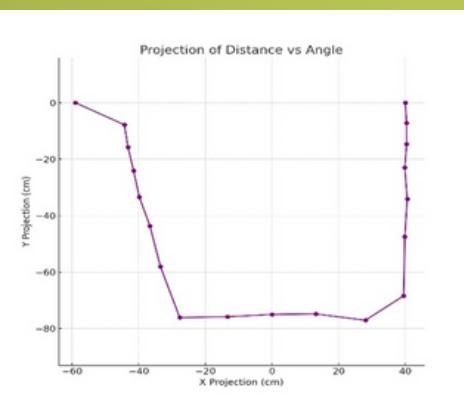
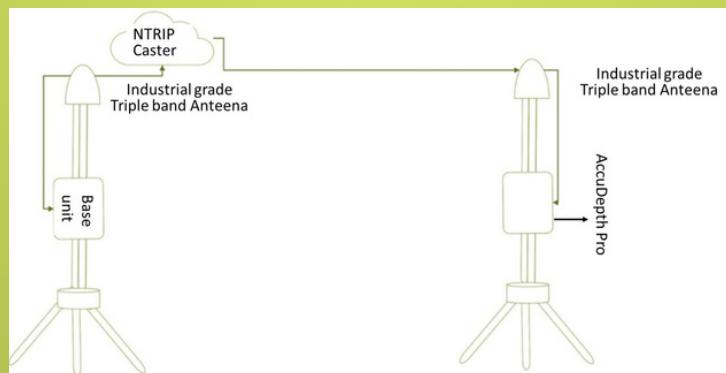
Ongoing Projects



AccuDepthPro – Device for finding the depth profile of trenches with super-accurate location.

AccuDepthPro is a device for real-time, accurate trench depth profiling using LiDAR scanning synchronized with RTK GNSS positioning. It achieves <10 cm absolute and 2–3 cm relative accuracy. Data is transmitted via IIoT to mobile/web dashboards for live monitoring. The system improves safety, efficiency, and decision-making in mining by automating overburden measurement, ore zone delineation, and volumetric analysis.

Expected Outcomes: A real-time, highly accurate open trench depth profiling can be done without any human intervention, whose results can be seen on a mobile application.





Ongoing Projects



Kaere – A first-of-its-kind non-invasive breath-based diagnostic platform that can measure both blood glucose levels and lung health accurately from exhaled breath.

Unlike conventional devices that rely on needles, strips, or invasive implants, Kaere uses advanced VOC and isotopic CO₂ sensors combined with proprietary AI/ML algorithms to detect disease biomarkers in real time.

The innovation lies in creating a portable, affordable, and multi-disease breath analyzer that eliminates pain and compliance issues in diabetes monitoring while also screening for respiratory disorders such as asthma, COPD, TB, and mining-related lung diseases. By integrating dual-sensor hardware with predictive analytics, Kaere transforms a simple breath into a rich diagnostic report.

Expected Outcomes: A cost-effective portable breath analyser will be developed that will diagnose respiratory disorders and monitor diabetes, which can be used for mine workers.





Achievements



Our Incubatee, M/s TechXEarthSpace Pvt Ltd, was awarded the First Runner Up position for providing a conceptual solution on PS-2 “Geological storage of captured CO₂ in the coal-bearing regions of India



Our incubated startup, M/s TechXEarthSpace Pvt. Ltd., was awarded the First Runner-Up position for presenting an innovative conceptual solution under Problem Statement PS-2, titled “Geological Storage of Captured CO₂ in the Coal-Bearing Regions of India.” This recognition underscores the company’s commitment to advancing sustainable technologies in the mining sector. It also reflects the continued efforts of the CIL Innovation & Incubation Centre (CII Centre), IIT (ISM) Dhanbad, in nurturing impactful startups and promoting innovation-driven solutions that contribute to environmental sustainability and technological advancement in the coal and mining industries.





Achievements



CII Centre has generated an approximate revenue of ₹3,50,000/- (Three Lakh Fifty Thousand only) from an outreach event, Entrepreneur Excellence Program (E2P), conducted in collaboration with Moonpreneur India Pvt Ltd.



The CIL Innovation & Incubation Centre (CII Centre), IIT (ISM) Dhanbad, has generated an approximate revenue of ₹3,50,000/- (Rupees Three Lakh Fifty Thousand only) from the outreach event Entrepreneur Excellence Program (E2P) conducted in collaboration with Moonpreneur India Pvt. Ltd. This initiative not only contributed to fostering entrepreneurial and leadership skills among students and startups but also highlighted the Centre's growing role in promoting innovation-driven programs and sustainable revenue-generating activities.





Pre-Incubation

Start-ups pre-incubated under the CII Centre

M/s TechXEarthSpace Pvt. Ltd

Title of Project: Hy-CCUS System



Development of an indigenous Hybridized CO₂ Capture, Utilization & Storage (Hy-CCUS) system with a proven capture capacity of 0.5 ton/day. This prototype is capable of removing CO₂ from both industrial point sources (cement, steel, thermal power plants) and ambient air (Direct Air Capture), making it the first dual-source system of its kind in India.

How it Works

The Hy-CCUS system leverages our proprietary Non-Linear Wave Mechanics technology, which optimizes pressure, temperature, and mixing parameters to maximize CO₂ absorption while minimizing energy use. This enables efficient scrubbing of flue gases, resulting in a cleaner output stream and a scalable pathway for further capture, utilization, and storage applications.

Extension to Coal Seams & ECBM

A key application of the Hy-CCUS system is in geological storage within coal-bearing regions of India, where captured CO₂ can be injected into unmineable coal seams. In this process, CO₂ adsorption onto coal surfaces displaces methane, enabling Enhanced Coal Bed Methane (ECBM) recovery. This dual approach delivers both long-term CO₂ sequestration and incremental methane production, aligning environmental and economic benefits for the coal industry.

Founder: Ms Swathi K J and Dr. Manjunath G L





Team Profile



Prof. R. K. Sinha
Head of the Centre
CII Centre



Mr. Rahul Raj
Executive Officer
CII Centre



Mr. Deepak Kumar
Technical Assistant
CII Centre



Mr. Binod Kumar
Technical Assistant
CII Centre



Mr. Vimal Kr. Mahato
Junior Technician
CII Centre



Mr. MD. Shourab
Junior Technician
CII Centre



Mrs. Arti Kumari
Office Assistant
CII Centre



Mr. Rohit Kr. Goswami
Young Professional
CII Centre



Mr. Neetish Raj
Young Professional
CII Centre