



IIT Ropar – Technology & Innovation Foundation

Agriculture & Water Technology Development Hub (AWaDH)

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DEPARTMENT OF
SCIENCE & TECHNOLOGY



Technology and Innovation Foundation (TIF) – AWaDH is an initiative of the Indian Institute of Technology Ropar supported by the Department of Science & Technology, Government of India, in the framework of a National Mission on Interdisciplinary Cyber-Physical Systems, having sector focus for technology development, human resource development, deep-tech startups and innovations on Agri, Water, IoT, ICPS and Sustainability.



“

धियो यो नः प्रचोदयात्।

“DhiyoyonahPrachodayāt” -May the Sun illumine our intellects in the same way he sheds his effulgence.

Newsletter **IIT Ropar AWaDH**

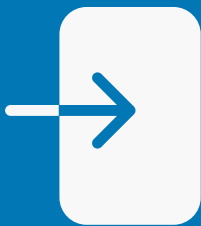
May Edition | 2023

Volume 1: Edition 2

The theme of the Month: **Innovation
& Mentoring**



- *Event for the Month: International Conference on "Agricultural-Centric Computation - ICA23"*
- *National Technology Day Celebration*
- *World Telecom Day Celebration*
- *Tech Expo Corner*
- *Outreach Tribunal*
- *Collaborative Connection*
- *Innovation Insider: Culture*
- *Upcoming Events*



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ABOUT AWADH (IIT ROPAR TIF)

IIT Ropar Technology & Innovation Foundation

The IIT Ropar Technology & Innovation Foundation (TIF) for Agriculture and Water Technology Development Hub (AWaDH) is a Technology Innovation Hub (TIH) that aims to transform the agriculture and water domains in India.

This initiative, received a funding grant of Rs. 110 crores from the Department of Science and Technology (DST), Government of India, as part of the National Mission on Interdisciplinary Cyber-Physical Systems (NM-ICPS).

Message from the Director, IIT Ropar

Prof Rajeev Ahuja

Dear Team,

Welcome to the latest edition of **Transform Tech Today**, our newsletter dedicated to celebrating the remarkable impact of **National Technology Day and National Science Day**.

National Technology Day, observed on May 11th, serves as a reminder of India's technological achievements, particularly the significant nuclear missile test known as Pokhran-II. This milestone not only demonstrated our scientific prowess but also showcased our commitment to advancements in technology.

Similarly, **National Science Day**, celebrated on May 28th, pays homage to the eminent physicist Sir C. V. Raman, who discovered the Raman effect. This discovery not only brought international recognition but also exemplified the spirit of scientific inquiry and innovation.

In this edition of **Transform Tech Today**, we highlight the events and programs that IIT Ropar TIF hosted and the impact created by exceptional scientists, groundbreaking technological innovations, and transformative projects that have the capacity to propel our nation forward. Through International conferences and events, where we have accepted captivating articles and insightful abstracts, we aim to inspire and nurture our collective passion for technology, sustainability, and innovation.

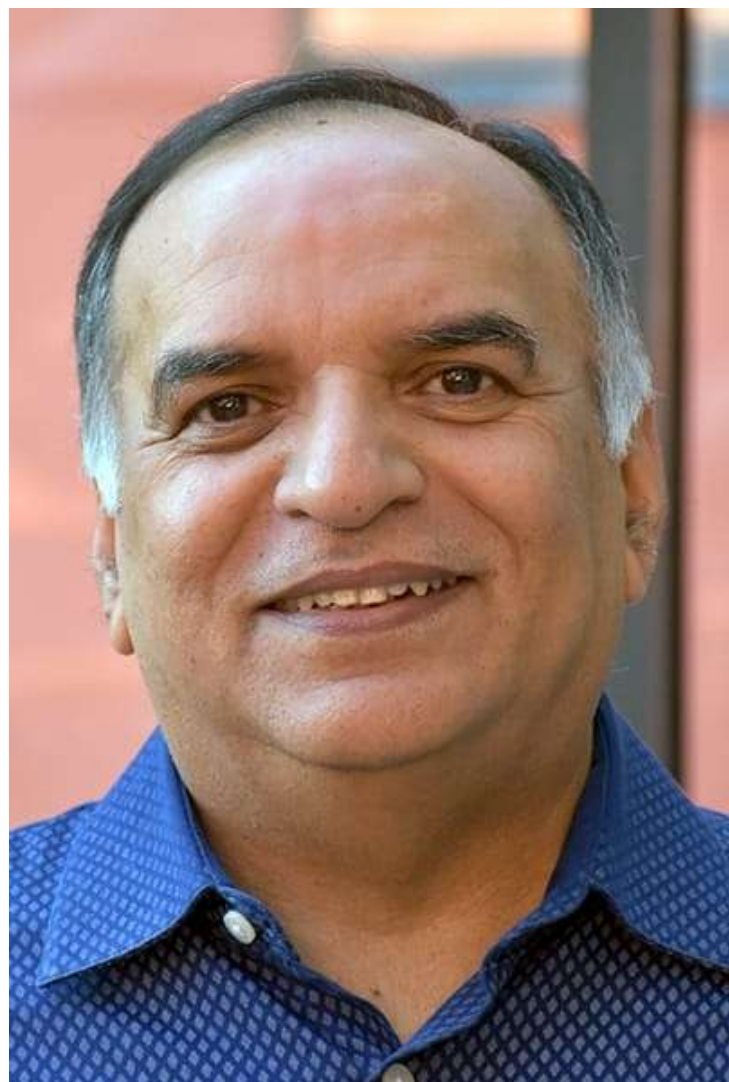
The **Collaborative Connection** section serves as a platform for sharing ideas, insights, and information among our team and partners. Together, we can foster collaboration and continue making meaningful progress towards our shared vision. In our **Innovation Insider** segment, we share our innovative cultural environment at IIT Ropar TIF, our vibrant ecosystem and interconnectedness.

Finally, The **Future Focus** section invites us to explore the frontiers of technology and sustainability. By anticipating emerging trends and embracing disruptive innovations, we can create a positive impact and drive change.

We hope this condensed edition of Transform Tech Today informs, engages, and inspires you.

Best regards,

Prof Rajeev Ahuja, Director, IIT Ropar



WHAT'S INSIDE THIS ISSUE:





International Conference on "Agricultural-Centric Computation - ICA23"



International Conference on "Agricultural-Centric Computation - ICA23"

iHub - AWaDH @ IIT Ropar organized an International Conference on "Agricultural-Centric Computation - ICA23" at the [Indian Institute of Technology, Ropar](#), May 11-13, 2023.

This three-day conference brought together experts from around the world to discuss the intersection of [#agriculture](#) and [#computation](#).

The conference featured keynote speeches from renowned guests, to name a few, Prof. (Dr.) [Abdulmoteleb El Saddik](#) from the [University of Ottawa](#), Canada, and Prof. (Dr.) [Athula Ginige](#) from [Western Sydney University](#). The speakers shared their insights into the latest developments in the agriculture industry.

In his inauguration speech, Prof. El Saddik emphasized the importance of agriculture as "the lifeline of humanity" and highlighted how computation could drive progress in this field.

The sessions covered various topics, such as; **precision agriculture, machine learning, data analytics, and metaverse technology in agriculture**. Attendees had the opportunity to learn about cutting-edge research and exchange ideas with other experts in their respective fields.

The conference also included project demonstrations by different companies, poster presentations, panel discussions, and experiences shared by progressive farmers.

The program chairs Dr. [Mukesh Saini](#) and Dr. [Neeraj Goel](#) announced that this would be an annual conference. The next year conference, ICA-24, will be hosted in IIT Delhi. See you in Delhi next year.





A 3-day international conference on "Emergent Converging Technologies and Biomedical System" held at Jaypee Institute Of Information Technology, Waknaghat, Himachal Pradesh.



A 3-day international conference on "Emergent Converging Technologies and Biomedical System"

The conference was jointly organized by JUIT – Solan, iHub – AWaDH @ IIT Ropar, and the Indian Institute of Technology, Ropar to stimulate ideas and promote innovation ecosystem.

We thank our sponsors, the Council of Scientific and Industrial Research (CSIR), and the Biomedical Engineering Society of India.

Vice-chancellor Prof. (Dr.) R. K. Sharma inaugurated the conference with a lamp-lighting ceremony along with chief guest Prof. (Dr.) Rajeev Ahuja, Director – IIT Ropar.

A total of #57 research papers have been presented at the conference. 8 keynote speakers spoke on different research areas, such as smart Internet of Things (IoT) devices, Next-generation Cyber-Physical Systems (CPS), Security of smart computing devices, and scientific reporting, among others.





National Technology Day (May 11) Celebration

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National Technology Day - May 11: National Technology Day is celebrated to commemorate India's successful nuclear missile test, Pokhran-II, conducted on May 11, 1998. It recognizes the advancements in science and technology made by Indian scientists and engineers.

Jubilating the 25th year of Technology Day for the technologies bringing change and impacting our lives with an aspiration to evolve India as the Technology Self Reliant Country #AtmanirbharBharat



Prof. Rajeev Ahuja
Director, IIT Ropar

Other Activities



Tech and Product Development Support to the Onboarded Deep Tech Startup **R2E Technologies Private Limited** by AWaDH Tech product demoed in exhibition at World Telecomm Day



Release of Monthly Newsletter of IIT Ropar Technology and Innovation Foundation - AWaDH on occasion of Technology Day



Exposure Visit of Students from **Baba Farid College** to IIT Ropar Technology and Innovation Foundation - AWaDH



iHub - AWaDH @ IIT Ropar organized a **3 Day International Conference** on "Agricultural-Centric Computation - ICA23" at the Indian Institute of Technology, Ropar, May 11-13, 2023.



World Telecom Day (May 17) Celebrations

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World Telecom Day: World Telecommunication Day has been celebrated annually on 17 May since 1969, marking the founding of International Telecommunication Union (ITU) and the signing of the first International Telegraph Convention in 1865

iHub - AWaDH @ IIT Ropar , Indian Institute of Technology, Ropar Celebrates & attended #WorldTelecomDay and Foundation Day of Universal Service Obligation Fund (USOF), Department of Telecommunications (DOT), at #NewDelhi



R2E Technologies Pvt. Ltd. exhibited on the occasion World Telecom Day in Delhi



<https://www.linkedin.com/company/ihub-awadh>

Tech Expo Corner

Transforming Together: Building Sustainable Tech Solutions.

Technology exhibition(s) / Success Stories

8 FINANCIAL EXPRESS

eFE

THURSDAY, MAY 18, 2023

INDOOR POLLUTION

A breath of fresh air from 'smart' plant

UBreathe develops a plant-based air purifier for your home & office

SUDHIR CHOWDHARY

WITH THE HOT weather and dust storms raging, residents of the National Capital Region (NCR) have been hit with a double whammy this week. Staying indoors during the extreme outdoor pollution appears to be the only option, but frankly, it's not advisable to leave your air purifier on all day—doctors warn the machine may actually aggravate many of the health issues, such as headaches, sore throat, coughing you hoped it would solve. UBreathe, a biotech startup, has come up with a unique solution—plant-based air purifiers.

This Gurugram-based firm provides sustainable and green solutions for cleaner air while tackling a larger spectrum of air pollutants. There are three natural air purifiers for your home and office—UBreathe Mini (₹4,237), UBreathe Life (₹33,898) and nature-inspired and HEPA-free, wall-mounted, modular air purifier—UBreathe Wall (prices depend on the size of the wall).

UBreathe purifies the air from all contaminants like suspended particulate matter and other toxic gases categorised as total volatile organic compounds (TVOC). Its purifiers combine the natural air purifying capabilities of plants with modern technology. As such, the proprietary design boosts a plant's natural process of removing pollutants from the air with improved soil breathability.

How does it work?

"Our Breathing Roots technology harnesses the natural air purification method of plants supplemented with the laws of physics," says Sanjay Maurya, CEO and co-founder, UBreathe. He stresses the company's unique design boosts the phytoremediation process of plants by 500x with the help of a centrifugal fan. This increases the volume of air at the soil-root zone, enabling the root microorganisms to interact with more air and purifying the same.

How long does it take UBreathe to clean a room? "It depends on the room size and air circulation conditions but in normal cases you can expect 30 minutes to 2 hours for UBreathe air purifier to clean a room," Maurya claims. Can the air purifier run all the time? "If you're concerned about energy usage, you are in luck—UBreathe air purifiers only require 1/5th of the energy consumed by traditional ones," he adds.

UBreathe's approach to air purification sets it apart from conventional systems, as it utilizes only bio-filtration techniques. This not only results in no recurring need for filter replacements, but also provides a sustainable solution with zero carbon footprint. The startup's patent-pending Breathing Roots technology is designed to boost a plant's natural process of removing pollutants from the air with improved soil breathability.

Origin of the idea

Incubated at IIT Ropar, UBreathe was established in 2018 by Sanjay Maurya, Akhil Gupta, Akshay Goyal, and Indrajit Rao—a diverse team of graduates from IIT, IIM, Harvard, and MIT Media Labs with a cumulative experience of over 33 years in tech innovation, design, and entrepreneurship. They came together with a vision to build a world-class consumer product from India to tackle air pollution, while being environmentally friendly and sustainable. "Our research is backed by premier institutes such as IIT Ropar, CIE, COEIM Ahmedabad, ministry of electronics & IT, Biotechnology Industry Research Assistance Council (BIRAC), among others. We have filed six patents in India and Europe," says Maurya.

Having spent all of their lives in urban cities such as Delhi, Kanpur and Lucknow, the co-founders of UBreathe understood the menace of the air pollution issue. Since inception, UBreathe has added 1000+ users who now have the company's air purifiers in their homes and offices. More recently, the startup has taken up marquee projects for wider social impact. Some of the projects include air quality management projects with the UN House Delhi, government of Maharashtra, public primary schools in Chennai.

UBreathe foresees a future where people understand that maintaining healthy air quality is both collective and individual responsibility. The company wants to create a future where everyone has sustainable means and solutions to maintain a healthy air quality indoors, especially in urban areas.

L-R: The UBreathe core team: Sanjay Maurya (co-founder & CEO), Shubham Singh (head, product & research) and Shubham Sahu (head, operations)

UBreathe Life portable room air purifier

FINANCIAL EXPRESS Thu, 18 May 2023
<https://paper.financialexpress.com/c/72451559>

A breath of FRESH AIR from "SMART" plant-based "AIRPURIFIER"

– Urban Air Labs

R2E Technologies Exhibition in World Telecom Day

R2E Technologies Private Limited, which received technology development support from iHub – AWaDH @ IIT Ropar and funding support from STPI – Software Technology Parks of India, #DCIS India, Department of Telecommunications (DOT). Their presence at the exhibition was a testament to their groundbreaking products and services.

We congratulate R2E Technologies Private Limited team and extend our gratitude to Renu Thapliyal, her team and to the entire startup #community for their tireless efforts and unwavering commitment to #innovation.



Outreach Tribune

Session, Events and Panel Discussion,
Taking Action together to Create a Better Future.

Satyan Innovation and Entrepreneurship Fest (SIF) 3.0, powered by **WHIZROBO** at Sat Paul Mittal School, Ludhiana

The innovation ecosystem is thriving in our secondary education system. Schools are taking impactful measures to spur the spirit of **#innovation** and **#entrepreneurship** in school children. **iHub - AWaDH @ IIT Ropar** is reaching out to schools and bringing awareness about innovation and entrepreneurship amongst young children from class VII to class XII.

Dr Radhika, COO joined the program as expert and shared her views and insights with students and community member



Mode: Offline



STPI Mohali : Support for Emerging Tech

@STPIMohali

conducted today an Outreach webinar on **#NGIS** & **#STPICHUNAUTI 5.0** focused on "Identifying & supporting promising Startups in Emerging Tech" wherein Speakers highlighted importance of contest and invited promising Start-Ups to come forward & leverage benefits of scheme

Mukesh Kestwal shared his views and insights on Chunauti 5.0 to participants and as well about iHub AWaDH IIT Ropar

Mode: Online

Startup Sabha for Mohali Ecosystem

On 26th May 2023, **ACIC RISE Association**, CEC, Landran successfully organized virtual Startup Sabha in Collaboration with **iHub - AWaDH @ IIT Ropar**. The main motive of sabha is to bring together stakeholders from global startup ecosystems to discuss Policy Directives proposed under the Indian presidency of the G20 2023. Mr. **Kamal Kishor Malhotra**, CEO of ACIC RISE Association, & Mr. **Mukesh Kestwal** CIO, @iHub - AWaDH @IIT Ropar discussed Policy consultation and Communicate with Entrepreneurs, Investors, and Academics & enlighten the sabha with his experience and knowledge.



Mode: Online



#Delegate #Team from JSPM's Rajarshi Shahu College of Engineering #RSCOE

♻️ Team **iHub - AWaDH @ IIT Ropar** hosted the **#Delegate #Team** from **JSPM's Rajarshi Shahu College of Engineering #RSCOE** under the **#MoU** between **Indian Institute of Technology, Ropar** and **JSPM's Rajarshi Shahu College of Engineering** to provide anchoring support for

- For developing **#curriculum** and R&D programmes
- Exchange of **#best #practices** for R&D and innovation initiatives
- **#Academic #cooperation** in areas of mutual interest
- Enhancing the **#ICPS #community** and collaborating to develop **#joint #tech** solutions in the domain of **#Agri** and **#Water**

Mode: Offline

Collaborative Connection

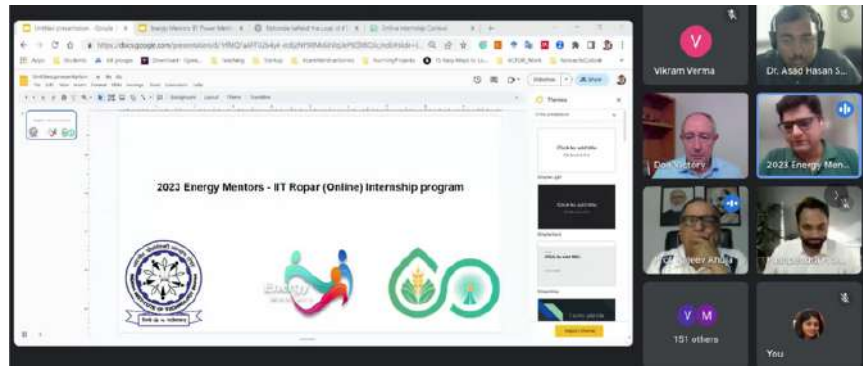
Connect Create and Collaborate : For a better sustainable future

people@ihub-awadh.in

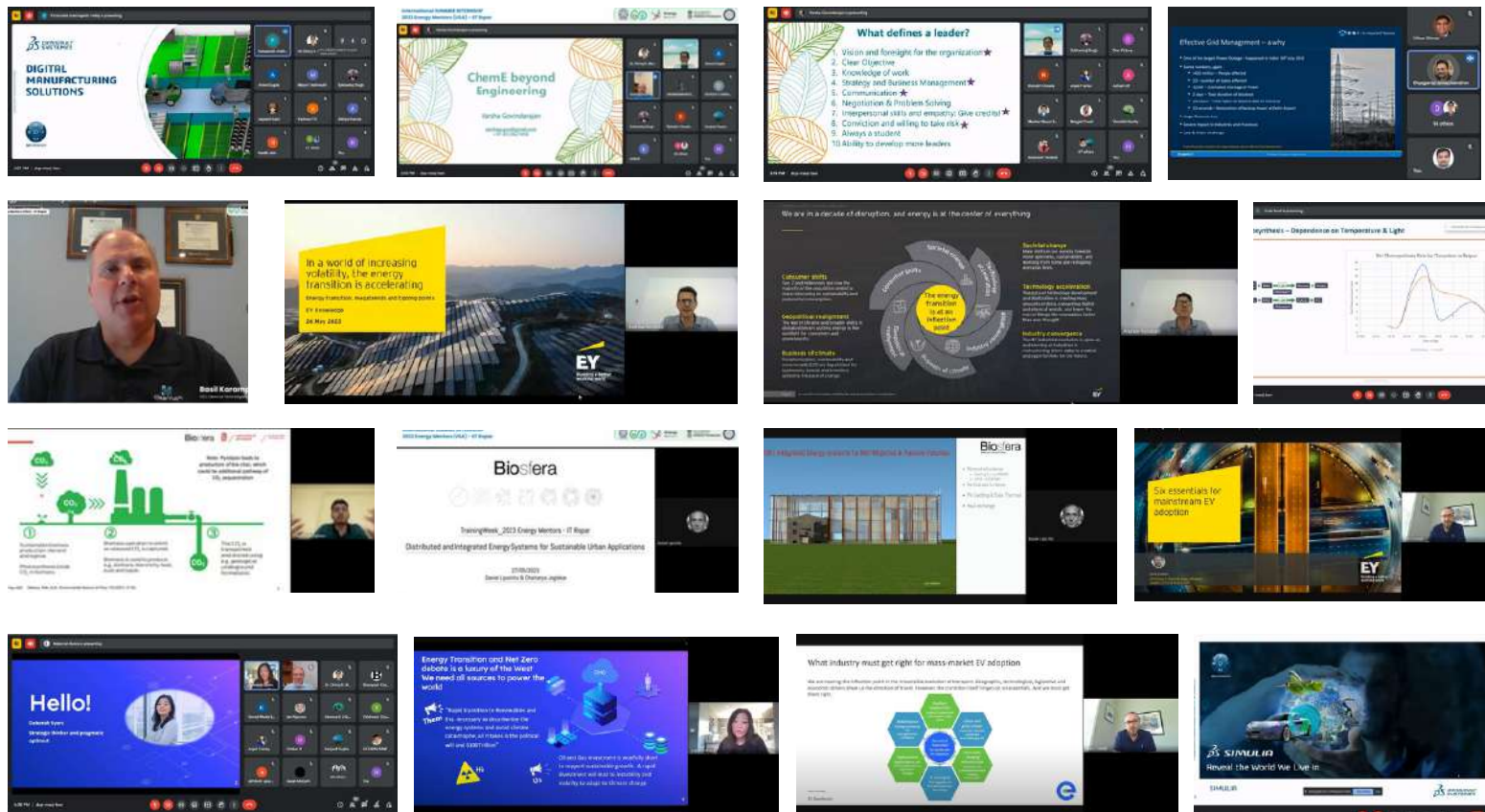
Perfect outset for the 2023 "International Summer Internship" offered by Energy Mentors, Indian Institute of Technology, Ropar and iHub - AWaDH @ IIT Ropar. The training program is supported by Dassault Systèmes and MathWorks.

The inauguration session kicked off with key addresses from Prof Rajeev Ahuja, Director, Indian Institute of Technology, Ropar and Don Victory, Founder & Chair of Energy Mentors.

The session was attended by more than 200 Students from #Engineering and #Architecture domains from India and other Asian and African countries. Highly engaging and interactive Q&A session was presided addressing students from #India, #Nigeria, #Bangladesh, #Kenya, #Cameroon, #Tunisia, #Ethiopia, #Turkey, and other countries



Collaborative effort by Energy Mentors, Indian Institute of Technology, Ropar, and iHub - AWaDH @ IIT Ropar, proved to be an engaging and enlightening experience: 7 day Insightful sessions from Experts



#Let'sJoinHands: In an increasingly interconnected world, collaboration and connection play a vital role in paving the way towards a sustainable future. By forging partnerships across industries, governments, and communities, we are able to pool resources, knowledge, and expertise to tackle pressing global challenges of sustainable Agriculture and Water. Together, through meaningful collaboration and strengthened connections, we can foster innovation, drive sustainable development, and create a better world for generations to come.

Connect with us: people@ihub-awadh.in

Innovation Insider : Culture

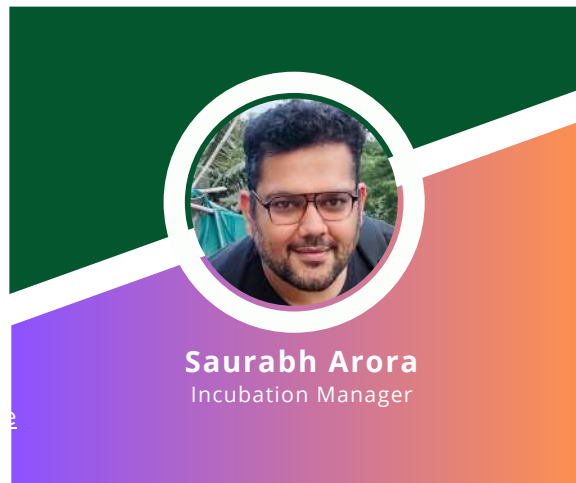
Inside the Innovation and Technology Hub: A Look at HR's Role in Driving Change and Growth



IIT Ropar TIF (Tech and R&D Team)



Team Onboarding



Saurabh Arora
Incubation Manager



Other Activities



Tech and operational team get together

The technical and operational team at IIT Ropar TIF jubilating moments by celebrating special days.



Tea and coffee discussions

Strong teamwork is essential in both small and large-scale projects to optimize usage of critical resources and for that we need light tea and coffee discussions



Joining of Incubation Manager

We love welcoming new members to our team here at AWaDH, and we believe that every milestone is worth celebrating.



Celebration Mode On...

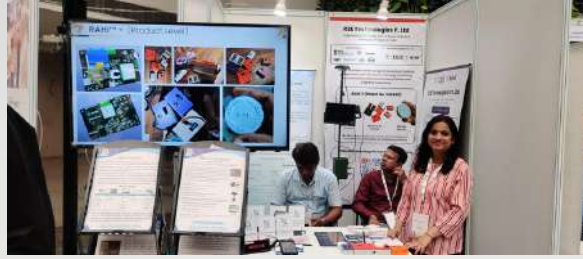
Not just work, we enjoy celebrating each milestone, and each moment.

We are hiring for various role at AWaDH. Are you interested to be part of the dynamic team :)



Gallery

Shaping the future . . .



IIT Ropar Technology & Innovation Foundation (IIT Ropar TIF)

Agriculture & Water Technology Development Hub (AWaDH)

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*For a Sustainable &
better Future . . .*

