

Indian Science Technology and Engineering facilities Map

An Initiative Supported by the Office of the Principal Scientific Adviser, GoI

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Message from the Scientific Secretary



Dr. (Mrs.) Parvinder Maini, Scientific Secretary, Office of the PSA to GoI, highlighted the importance of this event: “Having access to frontier, cutting-edge scientific infrastructure is highly critical for start-ups and entrepreneurs to develop and validate their deep tech innovations. For the last few decades, India has invested heavily on creating some of the advanced scientific infrastructure and test beds across our academic and research institutions. I-STEM plays a key catalytic role in our ecosystem to boost our innovative competitiveness globally.”



The National Coordinator of I-STEM, addressing attendees of the Deep Tech Start-Up Conclave about the I-STEM web portal

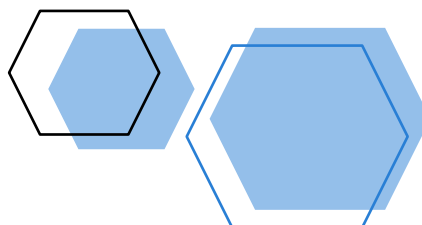


Mr. Vikas Garg, Co-Founder and CTO of Prayasta 3D Inventions Pvt. Ltd., Bangalore interacting with fellow attendees

ABOUT THE CONCLAVE

Indian Science Technology and Engineering facilities Map (I-STEM), an initiative conceived and supported by the **Office of the Principal Scientific Adviser, GoI**, with the goals of contributing to 'ease of research' and 'Linking Researchers and Resources', hosted the Deep Tech Start-Up Conclave on June 27-28, 2023 where representatives from Start-Up Ecosystem were invited to share their insights and network with the Deep Science R&D sector of the country and discuss *"Challenges and Practical Solutions for Sustainable Development"*.

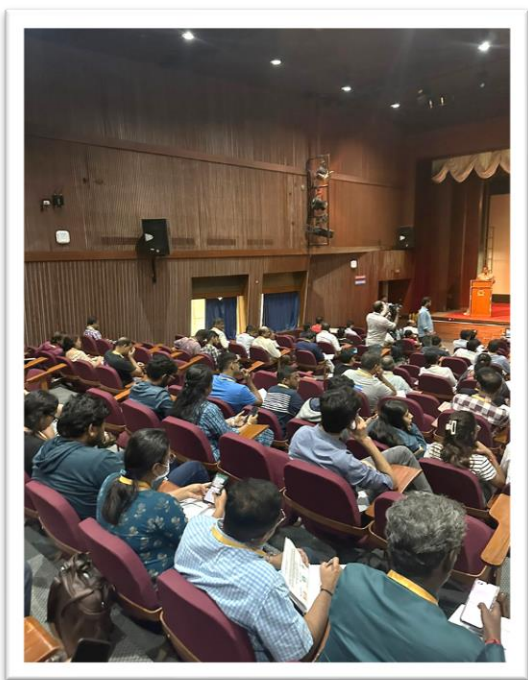
The I-STEM program aims to embolden and make India, the manufacturing hub of the world and promote research in deep science and technology among the youth of the country.



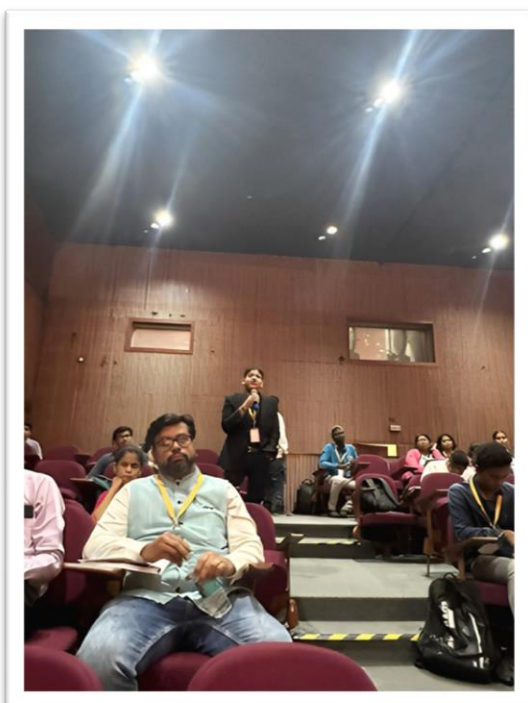
Through this conclave, the accomplished delegates of Deep Tech Start-Up Ecosystem learnt more about the STEM platform and benefited from the calendar of events. To recognize the spirit of innovation and entrepreneurship in the country, this Conclave brought together inventors, investors, incubators, government and private-sector policymakers, business owners, academicians, dignitaries, venture capitalists, and other thought leaders from across the nation. The Conclave emphasized that

"Connecting entrepreneurial minds of India on the National web portal," reflects the belief in the Nation that, while we may have a million issues, there are also a billion minds that can find solutions".

Further, this Conclave aimed at comprehending how future entrepreneurs are changing the R&D landscape and making India self-reliant by enabling R&D to support India's manufacturing industry.



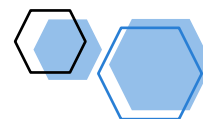
Attendees of the conclave listening to Dr. Vishwas Joshi, Director, Seagull BioSolutions, from Pune, Maharashtra



Mr. Apar Gupta, Founder-Blu Ocean Innovations Pvt. Ltd from Gurgaon, having an interaction with the key note speaker

The benefits that Start-Ups can derive from the I-STEM include access to research equipment and labs/facilities; mentorship by a panel of business experts; S&T capacity-building series which hosts the "Talk to Experts" webinar series; access to I-STEM'S network of venture capitalists; proposals for conducting skill development training; the WEST platform for women entrepreneurs; and startup-academia-industry collaboration.

The I-STEM team believes that there is a burgeoning collaboration between academic and corporate researchers. The ideas that emerged during this Conclave would help with the conceptualization and generalisation skills, while the industry, with its experience, would be able to choose concepts that can be developed further, leading both parties to recognize the importance of extensive engagement.



Through this Conclave, the I-STEM urged the incubators/accelerators to support organizations and departments that want to connect with deep science R&D-based Start-Ups and prompt them to register for collaboration and mutual benefit.

The I-STEM with its firm belief also urged the Start-Ups that when any idea is nurtured from its initial state to its conceptualization, both the success and failure stories which includes day-to-day efforts made with time stamp need to be recorded and shared on their respective websites for the wide spread awareness such that the new Start-Ups in the game learn and succeed further, find better remedies in a more proficient way through the learning of similar challenges which became obstacles to overcome and ultimately enhancing the time of progress.

Also, in the sphere of rendering mentorship, the I-STEM would invite domain experts for collaboration in scientific R&D and business to promote deep science Start-Ups. Furthermore, the I-STEM believes that bioeconomy and sustainable energy are just two examples with tremendous investment prospects, with India having enormous potential for global competitiveness. The tale of India's progress demands more than simply IT and software. The I-STEM put forth this notion to the investors, urging them to consider investing in deep science technology and to support I-STEM's initiatives.



Col. (Retd.) Kevin Dsouza, Founder, Co-Creators Defence Technology from Bangalore having an interactive session with a fellow attendee



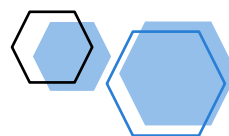
Attendees of the conclave having discussions with the keynote speaker



Mr. Raghudeep Madineni, Head - Industry 4.0/Digital Manufacturing, Ather Energy from Bangalore attending the conclave session

The Conclave featured a variety of sessions, such as on the benefits for Start-Ups through the I-STEM platform, Panel Discussions, Fireside Chats, Talks by Keynote Speakers where Start-Ups interacted with these leaders; on how to lead a successful Start-Up; on where Start-Ups can get advice from policymakers; on funding, where entrepreneurs can learn about different funding options; on pitching, where Start-Ups can work with investors and present their ideas; and on ecosystem support.

Various Start-Ups from across the country were invited to access the I-STEM web portal, www.istem.gov.in with the strong intent to provide an impetus to the spirit of innovation, as these Start-Ups can revolutionize business operations with new technologies over the next decade and beyond.



The I-STEM portal can strengthen the functioning of Deep Tech Start-Ups in the following ways:

- Streamlined Access to Resources: The I-STEM portal serves as a centralized platform that aggregates various resources relevant to Deep Tech Start-Ups.
- Knowledge Sharing and Learning Opportunities: The I-STEM portal can serve as a hub for knowledge sharing and learning in the deep tech domain.
- Enhancement in Visibility: Deep Tech Start-Ups often struggle to gain recognition and credibility in the market due to the complex and innovative nature of their offerings. The I-STEM portal can serve this purpose.
- Enhanced Networking and Collaboration: The I-STEM portal facilitates networking and collaboration among Deep Tech Start-Ups, researchers, and industry experts.
- Showcasing Innovations and maintaining Stability: The I-STEM team offers a platform for Deep tech Start-Ups to showcase their innovations, products, and solutions. By featuring them in a directory or database, the portal increases its visibility and exposure to potential customers, partners, and investors who are specifically interested in deep technology, thus providing stability in the competitive market.

Such support can contribute towards the growth, success, and sustainability of deep tech ventures.



Attendees having a discussion with the panelists during the panel discussion session



Mr. Tanveer Ahmed, Co-Founder and CTO, Digantara from Bangalore during Fire Side chat session



Mr. DPK Muthuswamy, Founder & CEO, KrutiBimb Concepts from Bangalore as a keynote speaker

DAY 1: JUNE 27,2023

KEYNOTE SPEAKERS:

- ❖ **Mr. DPK Muthuswamy, Founder & CEO, KrutiBimb Concepts**
- ❖ **Mr. Lokesh Murthy, Co-Founder and CTO, Dfine Bio Innovations**
- ❖ **Col. (Retd.) Kevin Dsouza, Founder, Co-Creators Defence Technology**
- ❖ **Mr. Tanveer Ahmed, Co-Founder and CTO, Digantara**
- ❖ **Mr. Deepak Emanuel, Chief Operating Officer, FluxGen Sustainable Technologies Pvt. Ltd.**
- ❖ **Mr. Raghudeep Madineni, Head - Industry 4.0/Digital Manufacturing, Ather Energy**
- ❖ **Mr. Tejas Sidnal., Founder, CarbonCraft, Hubli**
- ❖ **Mr. Vikas Garg, Co-Founder and CTO, Prayasta 3D Inventions Pvt. Ltd**
- ❖ **Ms. Ria Rustagi, Co-Founder and CEO, Neuphony by PankhTech**
- ❖ **Mr. Shuvo Mukhopadhyay, VP of Machine Design, Tvasta**
- ❖ **Dr. Barnali Ghatak, Founder and CEO, SBH Electrocloud Pvt Ltd**
- ❖ **Dr. Spandhana Gonuguntla, Senior Customer Success Engineer, MathWorks**

OVERVIEW

The first day of the Deep Tech Start-Up Conclave 2023 was abuzz with a large audience of Start-Up founders, investors, and other stakeholders in the Deep Tech Ecosystem. One of the highlights of the day was a fireside chat between the CTO of a leading deep tech Start-Up and a Senior Research Scholar from IISc. The duo discussed the challenges and opportunities faced by Deep Tech Start-Ups, as well as the role of Venture Capital in supporting their growth.

The day also featured a number of keynote speeches from thought leaders in the deep tech space. These speeches covered a wide range of topics, from the ethical implications of deep tech to the role of government in supporting deep tech innovation.

Another highlight was a panel discussion on “Challenges and Practical Solutions for Sustainable Development”. The panelists who were all leading experts in the field, shared their insights on the potential of deep tech to transform industries and solve some of the world's most pressing problems. Overall, the first day of the Conclave 2023 was a successful event that provided a valuable opportunity for deep tech stakeholders to connect, learn, and share ideas. The conclave also highlighted the growing importance of deep tech in the global economy and its potential for the sustainable development of the country.



Attendees of the conclave having an interaction during the tea break session

The Conclave was attended by people from various science and technology backgrounds. These attendees included Start-Up founders, investors, researchers, and students. Over 200 people attended the two-day Conclave. The conclave was a valuable opportunity for these individuals to learn about the latest developments in deep tech and to connect with others who are passionate about innovation.

OVERVIEW

The conclave concluded with a call to action for Deep Tech Start-Ups. The I-STEM urged these Start-Ups to persevere in their passion for innovation amidst all the challenges and continue to work on solving real-world problems. Dr. Sanjeev Kumar Shrivastava encouraged them to collaborate with each other and with established companies. The Conclave was a successful event that brought together a diverse group of individuals to discuss the future of deep tech. The Conclave provided attendees with the knowledge, resources, and connections they need to succeed in this rapidly growing field.

It was observed that to thrive in the ecosystem, Start-Ups require collaboration in a true sense with the Academia in the long run to achieve the intended objectives. They in particular are always in need of R&D Infrastructure – and expertise in a particular domain of their work from the Academia, - to utilize the limited budget available to them in a fruitful manner through such collaborations. Conversely, Academia also require collaborative R&D with Industries/Start-Up (with a modest budget) for engaging their skilled personnel and for procuring vital scientific spare parts and consumables, as well as to maintain the R&D infrastructure established with public funds. The need for strong collaboration between Academia and Industry where both may complement their requirements was felt during the conclave for achieving the goals of “Make in India”, “Stand-Up India”, “Start-Up India” and finally “Self-reliant India”.

DAY 2: JUNE 28,2023

KEYNOTE SPEAKERS:

- ❖ Dr. Shankar Venugopal, Vice-President, Mahindra & Mahindra
- ❖ Dr. U.T. Vijay, Executive Secretary, Karnataka State Council for Science & Technology (KSCST)
- ❖ Dr. Vishwas Joshi, Director, Seagull BioSolutions
- ❖ Mr. Anurag Ramdasan, Partner, 3one4 Capital
- ❖ Dr. Sachin Kadam, COO, SAATHI, IIT Delhi
- ❖ Mr. Rajneesh Prasad, Director and CEO, Revy Environmental Solutions Pvt. Ltd.
- ❖ Mr. Sethuraman Sathappan, Chief Operating Officer, Emirates NBD Bank
- ❖ Ms. Prajakta Sabnis, Co-Founder and COO, oorja
- ❖ Mr. Alex D Paul, Co-Founder & CTO, Azooka Labs
- ❖ Mr. Neeraj Bagi, Founder and CEO, Meukron Technologies
- ❖ Mr. Mohammad Towfeeq A, Director, Entreovert People Association
- ❖ Mr. Surya M Rajendran, Founder and CEO, Clowak Innovations
- ❖ Mr. Prasen Vinchurkar, Founder and Director, Red Carbon Techno Hub
- ❖ Mr. Anil Kumar Gupta, Scientist E, Aeronautical Development Agency, DRDO
- ❖ Mr. Apar Gupta, Founder-Blu Ocean Innovations Pvt. Ltd
- ❖ Mr. Baipalli Vallab Rao, Managing Director, PHYTEC Embedded Pvt. Ltd



Mr. Anurag Ramdasan, Partner, 3one4 Capital from Bangalore during Fire Side chat session



Dr. Sachin Kadam, Chief Operating Officer, SATHI-IIT Delhi interacting with the National Coordinator of I-STEM, Dr. Sanjeev Kumar Shrivastava

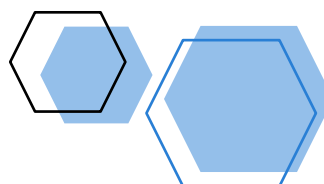


Panel Discussion: "Challenges & Practical Solutions for Sustainable Development"

Panelist: Mr. Raghudeep Madineni, Dr. Vishwas Joshi, Ms. Ria Rustagi, Dr. Spandhana Gonuguntla, Mr. Alex D Paul, Col.(Retd.)Kevin Dsouza, Dr. Sanjeev Kumar Shrivastava

DISCUSSIONS Q&A

The keynote speeches ignited thought-provoking discussions and generated an array of questions from the enthusiastic audience. A panel discussion on "Challenges & Practical Solutions for Sustainable Development" was led by experts from diverse backgrounds, including healthcare, biotech, and robotics. They shared their experiences, debated potential roadblocks, and explored strategies to overcome hurdles faced by Start-Ups in their journey before reaching the market.



The interactive Q&A session allowed attendees to engage directly with the keynote speakers and panelists, and to seek advice on various aspects of building and scaling deep tech ventures. The questions ranged from research challenges and fundraising strategies to team building, market penetration, and regulatory considerations including validation and certification of their products.

During the Panel Discussion, it was observed and advised that the I-STEM through the Govt agencies must take the lead in a comprehensive manner to support such Start-ups working for manufacturing, to reduce the cost involved in validation and certification, and to provide avenues to market their end-product.

The experts provided invaluable insights, leaving the audience inspired and equipped with practical knowledge.

KEY TAKEAWAYS



Attendees of the conclave interacting with the National Coordinator, I-STEM regarding the opportunities and initiatives led by the I-STEM web portal for the Deep Tech Start-Up Ecosystem

Collaboration is the key: The attendees of the Conclave highlighted the significance of e-networking and collaboration between academia, industry, and investors to enable and accelerate deep tech innovations in the country. By fostering such partnerships and exchange of knowledge, the stakeholders may amplify their impact and drive transformative change across various sectors.

Ethical considerations are paramount: As Deep Tech continues to push boundaries, ethical considerations must remain at the forefront. The attendees stressed the need for responsible development and deployment of technologies, ensuring that societal implications and ethical frameworks which need to be taken care of.

Funding opportunities are expanding: The Deep Tech Space is attracting increasing attention from investors. The discussions shed light on emerging funding models, such as venture capital funds specifically dedicated to deep tech, government grants, and corporate partnerships, providing entrepreneurs with more avenues to secure funding and scale their ventures. It was observed that if suitable technologies are invented and the products are developed by reviewing the need/issues/challenges on a regional basis involving – from the outset - the public, academic organizations and local government, the generation of required funding might become easier.



Dr. Shankar Venugopal, Vice-President, Mahindra Research Valley, Chennai and Mr. Sethuraman Sathappan, Chief Operating Officer, Emirates NBD Bank, India during an interactive session with attendees of the conclave



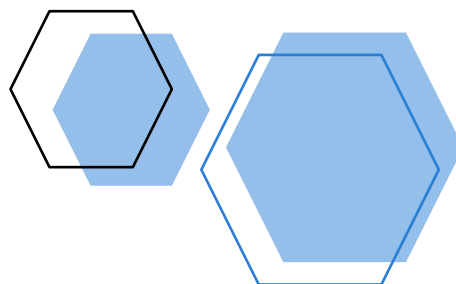
Dr. Sachin Kadam, Chief Operating Officer, SATHI-IIT Delhi having an interactive discussion with an attendee



Mr. Shuvo Mukhopadhyay, VP of Machine Design, Tvasta, Chennai and Col. (Retd.) Kevin Dsouza, Founder, Co-Creators Defence Technology, Bangalore having an interaction over the tea break with fellow attendees of the conclave

NEXT STEPS

- ❖ Take appropriate decisions at the time of establishing start-ups.
- ❖ Find a suitable partner for R&D collaboration.
- ❖ Use the R&D infrastructure listed on the I-STEM web portal.
- ❖ In case of any assistance needed, reach out to the I-STEM Team!



- ❖ Driving the efforts on prime issues, categorically on four (04) verticals for the **RISE** of the nation i.e.,

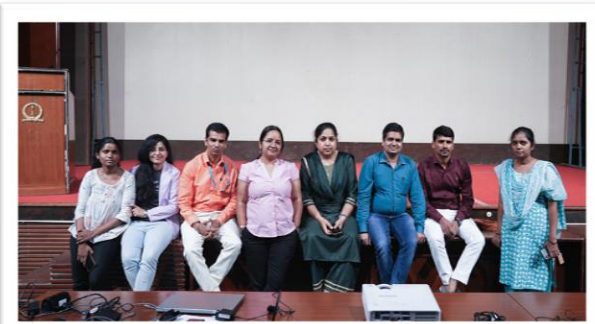
R Researcher's Pain in Getting R&D Resources

I Industry Technological Issues, Scarcity of Skilled Personnel, and Financial Issues





S Society Needs

E Economy of the Country

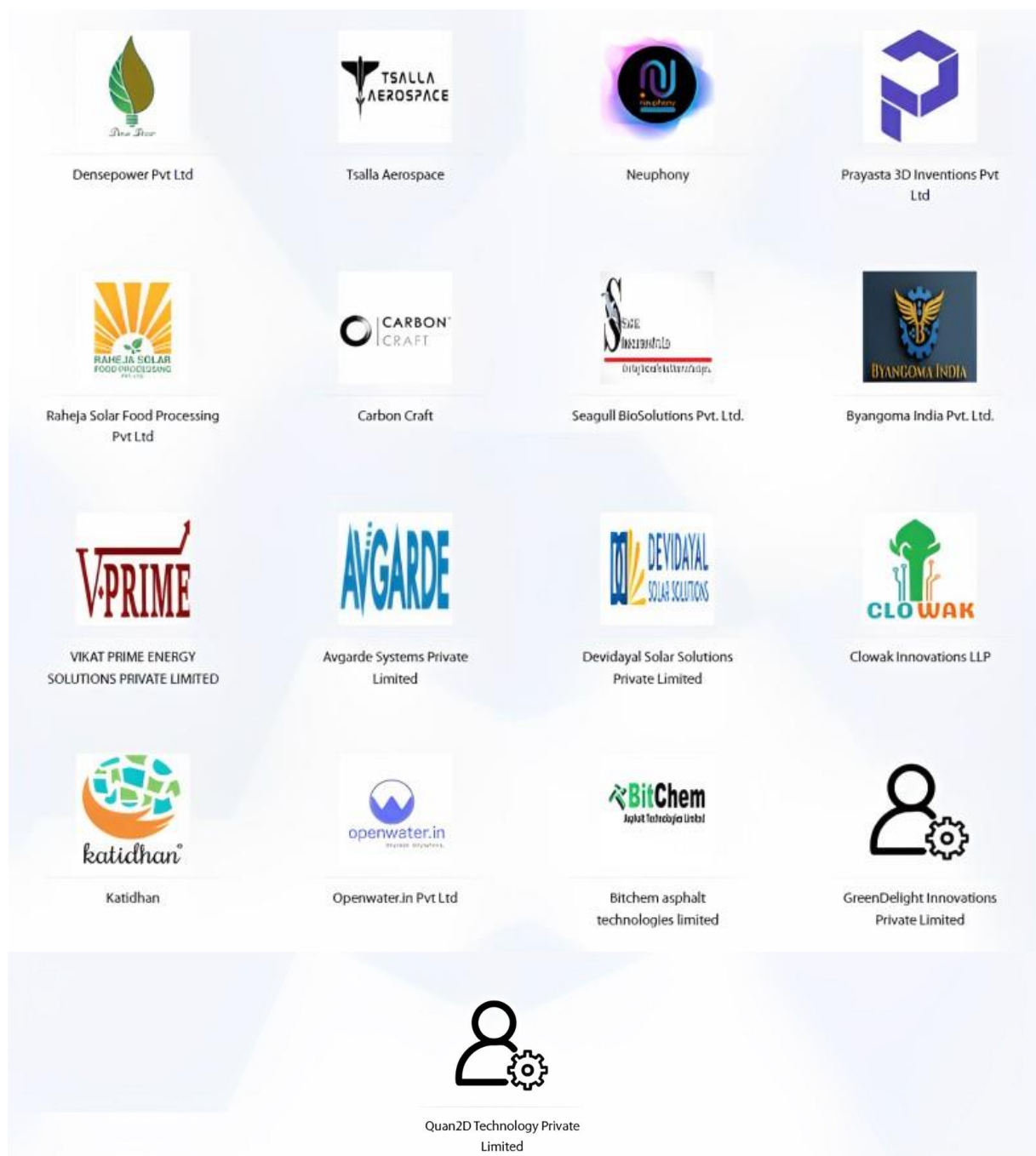
A large indoor gathering of people in a hall, likely a community meeting or health fair. Many people are standing and talking, while others are seated at long tables. The room has a high ceiling and large windows.



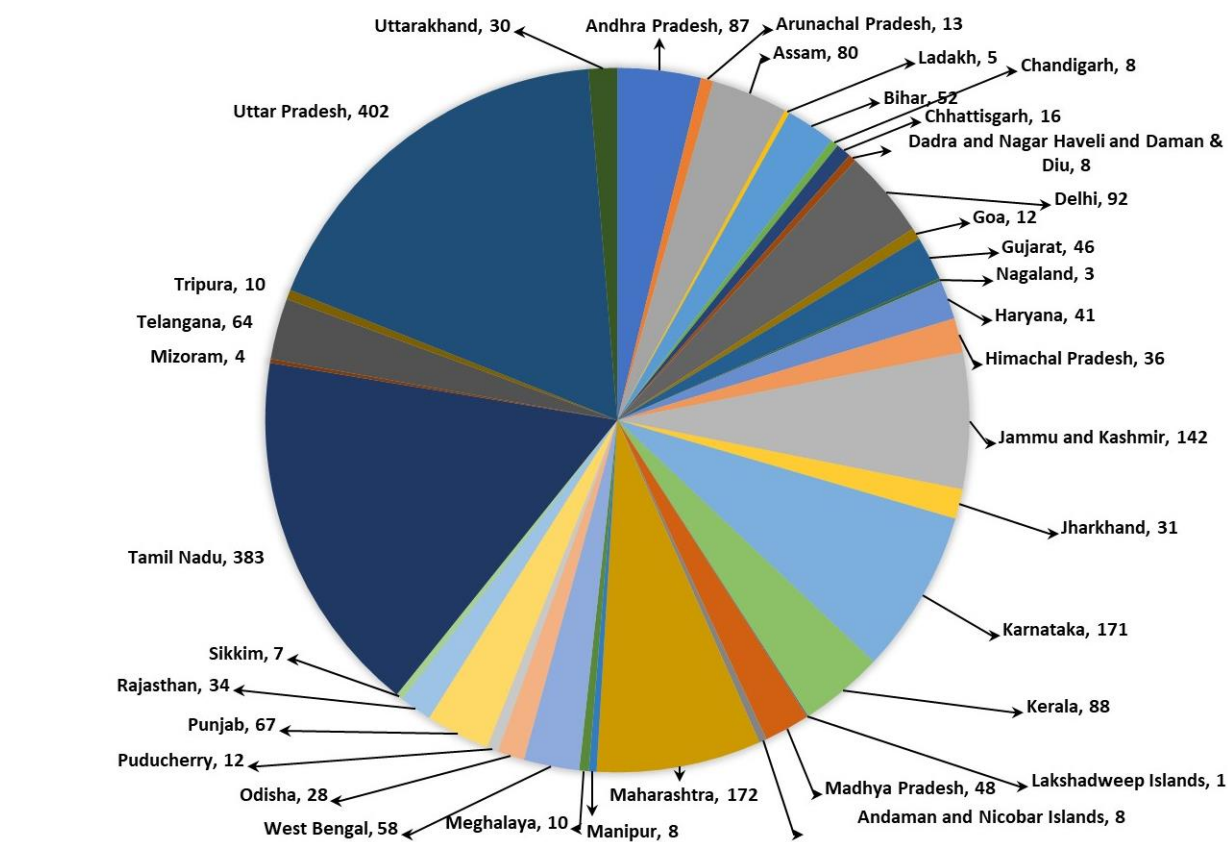
Start-Ups listed with the I-STEM

			
Digantara	Hydrogreens Agri Solutions Pvt Ltd	RuKart Technologies Pvt. Ltd.	Azooka Labs Pvt Ltd
			
TeraLumen Solutions Pvt. Ltd.	Botloka	Meukron Technologies Pvt Ltd	GreenJams
			
Xgro Technologies	14Si Solutions	REVY Environmental Solutions	Akmaan Clean Machine
			
MechMatics Engineering Pvt Ltd	Dfine Bio-Innovations Pvt Ltd	Mushloop	Blu Ocean Studios Private Limited

Start-Ups listed with the I-STEM

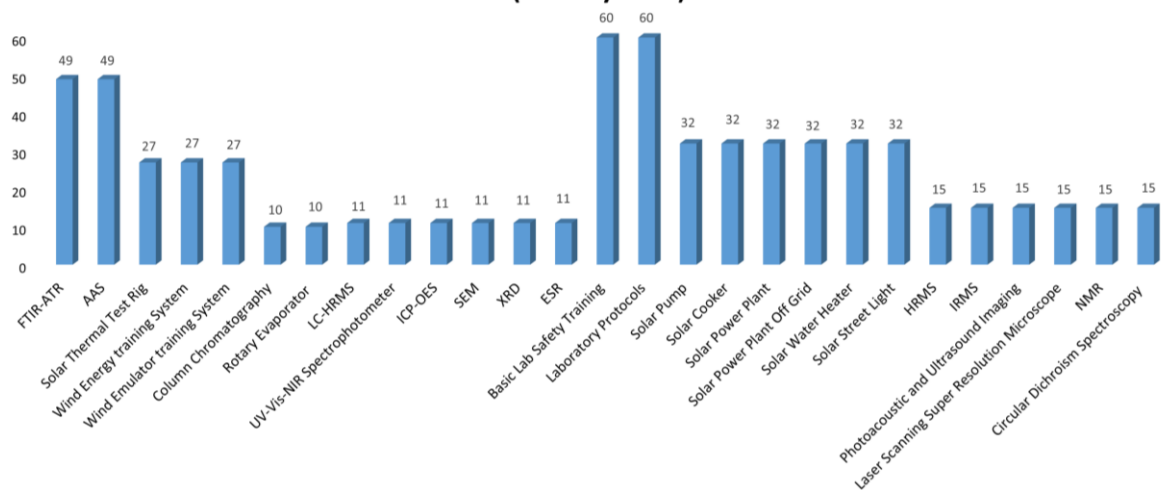


Institutions Registered with the I-STEM



Skilled Personnel trained through the I-STEM Skill Development Training

Personnel Trained on various Equipment/Instruments across the country
(Till May 2023)



REGISTER WITH I-STEM

VISIT: WWW.ISTEM.GOV.IN

CONTACT US: NODAL.OFFICE@ISTEM.CO.IN, SANJEEVS@IISC.AC.IN

TOLL-FREE NO.: 1800-425-3281

IVR NO.: 9620203281

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(Connect Quickly with the Response Team)

SOCIAL MEDIA HANDLES

Remember to connect with us on social media to stay updated on all the latest happenings at the conclave.

Don't forget to use the hashtag **#IstemStartupConclave2023** to join the conversation!

