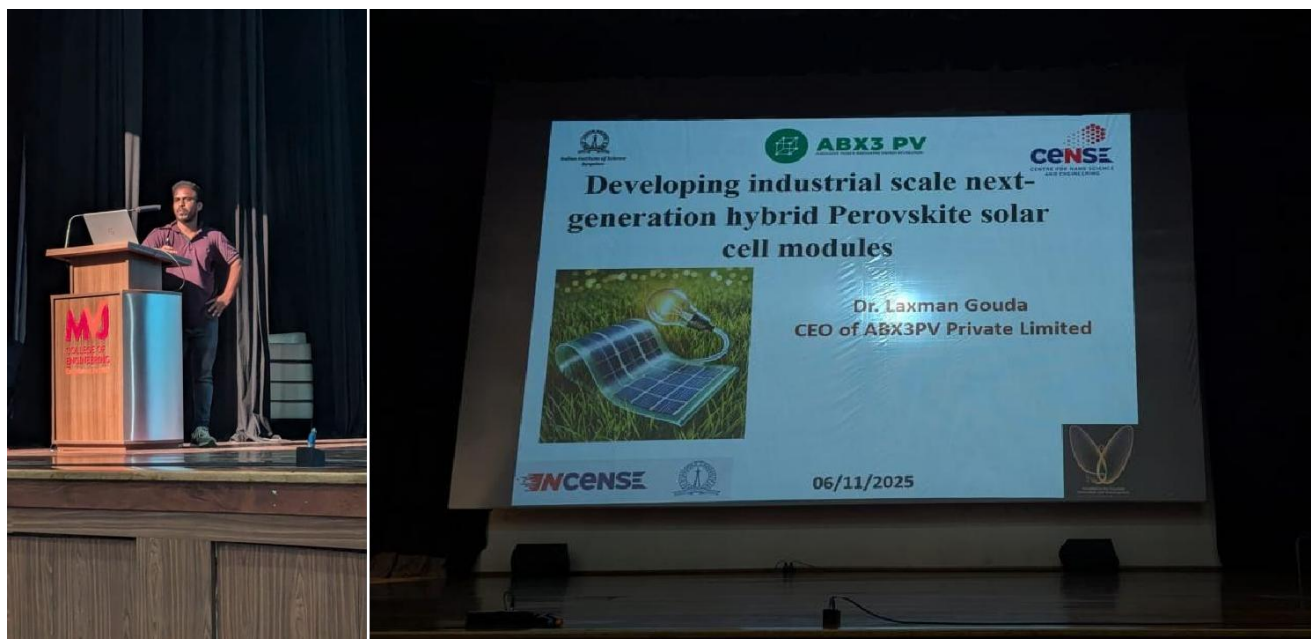


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Department of Physics Guest Lecture Report

The Department of Physics organised a Guest Lecture titled **Developing Industrial Scale Next-generation Hybrid Perovskite Solar Cell Modules** on **06/11/2025** at **1:30 pm** in the M.V. Jayaraman Auditorium.



[Dr. Laxman Gouda Starting the lecture]

On 6th November 2025, the Department of Physics organised a day of activities for students. In the morning session, the Physics Club conducted a fun and creative session on painting and photography for first-year B.E. Computer Science and Engineering students. It gave them a chance to express their creativity and enjoy a relaxed start to the day. In the afternoon, a guest lecture titled *"Developing Industrial Scale Next-generation Hybrid Perovskite Solar Cell Modules"* was held at the M.V. Jayaraman Auditorium and was attended by ~340 students. The guest introduction was given by Dr Reshmi Varma. The talk was delivered by Dr Laxman Gouda, CEO of ABX3PV Private Limited and Ramanujan Fellow at IISc Bangalore. He shared valuable insights into solar cell technology and its industrial applications. The session ended at 3:50 pm with an interactive Q&A, making the day both inspiring and informative for all participants. A vote of thanks was given by Dr Sathish S., followed by the guest's distribution of prizes to the club activity award winners.

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[Students of first year B.E. (CSE Stream) attending the guest lecture]

Objectives of the Event

The primary objectives of the event were:

- To encourage creativity and observational skills among first-year B.E. CSE students through painting and photography activities.
- To provide insights into cutting-edge solar cell technology and its industrial applications via an expert-led guest lecture.
- To promote interdisciplinary learning and engagement between students, researchers, and industry professionals.

Event Overview

Morning Session: Physics Club Activity

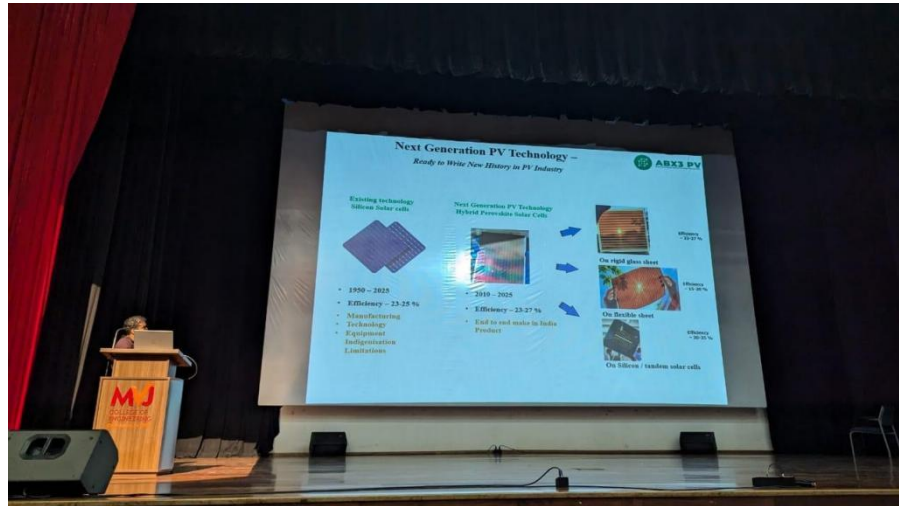
Afternoon Session: Guest Lecture on Solar Cell Technology

In the afternoon session, the focus shifted to cutting-edge scientific research with a guest lecture titled “Developing Industrial Scale Next-generation Hybrid Perovskite Solar Cell Modules”, held at the M.V. Jayaraman Auditorium. The lecture was delivered by Dr Laxman Gouda, CEO of ABX3PV Private Limited and Ramanujan Fellow at IISc Bangalore, a renowned expert in photovoltaic technologies. Dr Gouda presented an in-depth overview of hybrid perovskite solar cells, highlighting their advantages over traditional silicon-based cells, the challenges in scaling up for industrial use, and recent innovations in material stability and manufacturing techniques. His talk bridged the gap between academic research and real-world applications, offering students a glimpse into the future of renewable energy.

Some of the key points of the talk were;

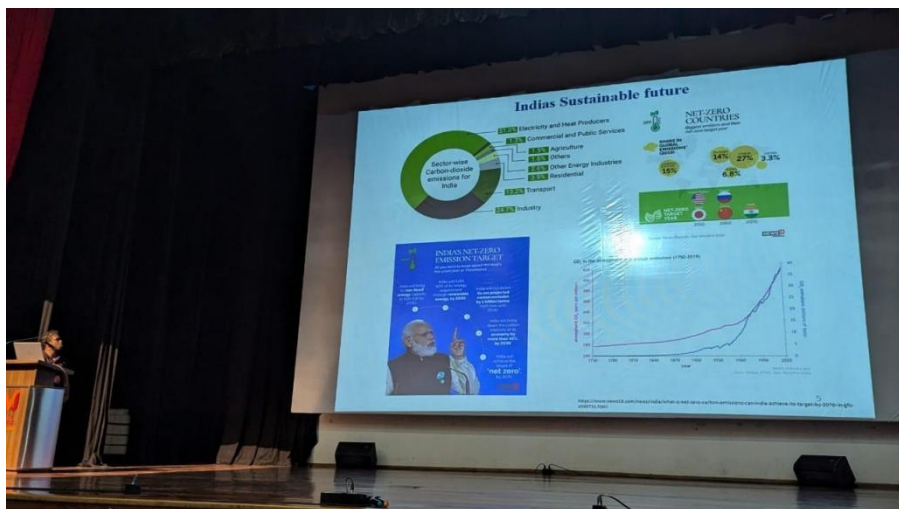
1. **Introduction to Solar Cells:** The session began with a foundational explanation of how solar cells work, their role in energy conversion, and their importance in the global shift toward renewable energy.
2. **Silicon-based Solar Cells:** Dr Gouda discussed the dominance of silicon-based cells in the current market, highlighting their efficiency, limitations, and manufacturing challenges.
3. **Perovskite Solar Cells:** A detailed comparison was made between silicon and perovskite technologies, emphasising the unique properties of perovskite materials such as flexibility, lightweight structure, and potential for low-cost production.

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[Dr. Gouda discussing on the Next-Gen photovoltaic technology]

1. **Advantages of Perovskite Technology:** The lecture outlined key benefits including higher efficiency potential, ease of fabrication, and suitability for tandem cell configurations.
2. **Market Size & Industrial Potential:** Dr. Gouda presented data on the global solar energy market, projecting significant growth and identifying opportunities for perovskite modules to disrupt existing technologies.
3. **Current Trends & Business Landscape:** Insights were shared on ongoing research, startup activity, and industrial collaborations driving innovation in solar cell manufacturing.



[Discussion on the sustainable future of India]

4. **Student Involvement:** The session concluded with motivational guidance on how students can contribute - through academic research, internships, entrepreneurship, and interdisciplinary collaboration.

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Outcomes and Impact

This lecture offered students a valuable glimpse into the future of solar energy and encouraged them to explore roles in advancing sustainable technologies. The basic objectives that were met;

- Understanding of Solar Technologies
- Insight into Industrial Applications
- Career Inspiration
- Interactive Learning

Conclusions

The guest lecture provided students with a clear understanding of solar cell technologies, especially the potential of perovskite solar cells in future energy solutions. Dr Laxman Gouda's insights into industrial scalability, market trends, and student involvement sparked curiosity and encouraged academic exploration. The session was well-received and successfully met its goal of connecting advanced research with real- world applications.

Report by:

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