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NCPRE's pioneering work in high-efficiency, low-cost Silicon-Perovskite Tandem Solar Cells is a game-changer for India's solar energy future: Union Minister Shri Pralhad Joshi

MNRE has provided over Rs 200 crore funding to NCPRE, IIT Bombay over the last 15 years, to provide R&D and education support for India's ambitious 100 GW solar mission

India is not just adopting renewable energy but defining its future—through research in perovskite solar cells, Inverter technology, PV-reliability, green hydrogen, and energy storage: Shri Pralhad Joshi

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Mumbai, July 15, 2025: Union Minister for New and Renewable Energy and Consumer Affairs, Food and Public Distribution Shri Pralhad Joshi visited the National Centre for Photovoltaic Research and Education (NCPRE) in IIT Bombay and held an interactive meeting with its Investigators and Advisory Board Members. Shri Joshi visited the Perovskite Tandem solar cell lab, Silicon Fab laboratory and Medium voltage Laboratory at NCPRE and interacted with the scientists. IIT-Bombay-incubated startup - Advanced Renewable Tandem-Photovoltaics India (ART-PV India) has developed a 4-Terminal Silicon/CdTe-Perovskite tandem solar cell with a conversion efficiency of 29.8%. This is a national milestone and one of the highest performance levels ever achieved in India.



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NCPRE was launched at IIT Bombay in 2010 with funding from the Ministry of New and Renewable Energy (MNRE) of the Government of India. The broad objectives of NCPRE are to provide R&D and education support for India's ambitious 100 GW solar mission. Till date, MNRE has provided over Rs 200 crore funding to NCPRE, IIT Bombay, over the last 15 years.



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MNRE is also supporting ART-PV India with \$10 million (~ Rs 83 crore) for establishing a state-of-the-art pilot manufacturing facility in IIT-B campus, in line with the commitment to nurturing domestic Intellectual Property, and ensuring Indian innovation reaches global markets. MNRE will continue to provide policy and financial support to ensure India's RE sector thrives on innovation and self-reliance, said Union Minister Shri Pralhad Joshi.



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Speaking at a post-visit media interaction, Union Minister Shri Pralhad Joshi stated, "Ministry of New and Renewable Energy is proud to support NCPRE's pioneering work in high-efficiency, low-cost Silicon-Perovskite Tandem Solar Cells, a game-changer for India's solar energy future." At a time when the world is seeking efficient, affordable, and scalable solar energy solutions, this innovation gives India a leadership edge, further stated Union MNRE Minister. This technology has the potential to achieve more than 30% efficiency, far surpassing conventional solar panels, making India a global leader in next-gen photovoltaics and by investing in such innovations, we are driving down the cost of solar energy, making it more accessible for all Indians, he added. This is not just a labscale breakthrough, it is a blueprint for clean, scalable, and Aatma nirbhar energy production, stated Shri Joshi. In this context, Union Minister Shri Joshi also said, India is not just adopting renewable energy but defining its future—through research in perovskite solar cells, Inverter technology, PV-reliability, green hydrogen, and energy storage.

Shri Pralhad Joshi said, the Union Ministry of New and Renewable Energy (MNRE) is committed to advancing cutting-edge renewable energy technologies under the vision of

Media Contact:

Mrs Falguni Banerjee Naha, Public Relations Officer, IIT Bombay Ph. No. 022-25767025/4027 | Email: pro@iitb.ac.in



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Aatmanirbhar Bharat, ensuring India leads in clean energy innovation. In this respect, MNRE's support to premier institutions like NCPRE, IIT Bombay, strengthens domestic R&D, reducing reliance on imported technology and fostering indigenous manufacturing. Through initiatives like the Renewable Energy Research & Technology development (RE-RTD) and R&D funding schemes, MNRE is enabling institutions like NCPRE to accelerate lab-to-market transitions, further stated Shri Joshi. He added that NCPRE's work exemplifies how public-funded research, when coupled with policy support, can position India as a global clean energy hub.

Highlighting MNRE's Strategic Support for R&D & Commercialization, Shri Joshi urged the IIT Bombay-ART PV team to Commercially demonstrate that Perovskite Tandem Solar Cells are not only scalable but also profitable. By making advanced technologies accessible to industry, we will not just be driving efficiency, but also building a stronger innovation ecosystem, he said. Shri Joshi further said that this approach aligns perfectly with the larger vision of the Central Government under the leadership of PM Shri Narendra Modi to turn Indian R&D into global benchmarks. He stated that the Union Cabinet approved the Research Development and Innovation (RDI) Scheme just two weeks back, and the budget for Gross Expenditure on Research and Development (GERD), stands at Rs. 1.27 lakh crore.



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IIT Bombay Director Prof. Shireesh Kedare, NCPRE Principal Investigator (PI) Prof. Baylon G. Fernandes and ART-PV India Co-Founder Prof. Dinesh Kabra were present on the occasion.

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PIB Mumbai | Sriyanka Chatterjee/Darshana Rane

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About IIT Bombay:

The Indian Institute of Technology Bombay, set up in 1958 as the second IIT, is recognised worldwide as a leader in the field of science and engineering education and research. The Institute was granted the status of 'Institution of Eminence' by the Ministry of Education (the then Ministry of Human Resources Development) on July 9, 2018. IIT Bombay is reputed for the quality of its faculty, cutting edge research, industry relations and the outstanding calibre of students graduating from its undergraduate and postgraduate programmes. The Institute has 17 academic departments, 35 other academic entities (Centres/ Programmes/ Academic facilities/ Hubs/ Externally funded centres and Labs) and three schools. Over the last six decades, more than 75,000 engineers and scientists have graduated from the Institute. It is served by 751 faculty members and about 150 visiting and part-time faculty considered not only amongst the best within the country but also highly recognised in the world for achievements in the field of education and research. On June 19, 2025, IIT Bombay was ranked 2nd in India and 129th in the world in the Quacquarelli Symonds (QS) World University Rankings for 2026. On March 12, 2025, IIT Bombay was ranked 28th in Engineering and Technology in the Quacquarelli Symonds (QS) World University Rankings by Subject for 2025.