

TIFRH Researchers receive DST Challenge Award on Solar Energy

The Department of Science and Technology, Govt. of India, had announced 'Challenge Awards 2021 on Solar Energy' inviting research proposals focussed on developing solar- energy based devices and systems that could address technological challenges of the future.



A multi-institute research team led by Pabitra K. Nayak from the Tata Institute of Fundamental Research (TIFR), Hyderabad, is a recipient of this award and has been sanctioned a research grant of Rs. 6.69 crores. The co-investigators in the projects are P. K. Madhu from TIFR Hyderabad, Shaibal K. Sarkar from IIT Bombay, Ajay Perumal from IISER Berhampur, and **Sudip Chakraborty from HRI Prayagraj**. They aim to develop organic and metal halide perovskites-based semiconducting materials enabling highly efficient and stable solar cells. The proposed research endeavour is an interdisciplinary effort, bringing in the expertise of scientists from four Indian institutions.

Pabitra K. Nayak will develop new types of organic and

perovskite materials to be used in the solar cell. P. K. Madhu, whose expertise lies in high-resolution nuclear magnetic resonance spectroscopy, will investigate how the structure of the organic and perovskite materials influences the function of solar cells. Shaibal K. Sarkar and Ajay Perumal will be fabricating the perovskite solar cells and related modules. Sudip Chakraborty will explore materials properties and their applications for efficient solar cells through computational investigations.

Presently, the state-of-the-art perovskite solar cells have nearly 26% efficiency in converting sunlight to electricity. Despite the superb efficiency, they are not stable for long period of time. With the help of this grant, this research team aims to build perovskite solar cells exhibiting efficiency of more than 26% and remaining stable for over 10,000 hours.

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Content: Anusheela Chatterjee and Pabitra K. Nayak

Press coverage in The Times of India (news clip below) and [Telangana Today](#).

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TIFR RESEARCHERS RECEIVE DST CHALLENGE AWARD



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The proposed research endeavour is an interdisciplinary effort, bringing in the expertise of scientists from four Indian institutions.

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