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Press Release

Dr. Krishanu Dey of University of Oxford delivers lecture on Mixed Metal Halide Perovskites

The different aspects of Mixed Metal Perovskites, an outstanding photosensitive semiconductor have been explained to the faculty members, research scholars and students of IIT (ISM) Dhanbad at the Conference Room of the Department of Electronics Engineering of IIT (ISM) Dhanbad by Dr. Krishanu Dey, University of Oxford during a guest lecture titled ***Mixed-Metal Halide Perovskites: From Fundamentals to Devices***.

The lecture held in virtual mode by Department of Electronics Engineering laid focus on the impact of metal alloying on ion dynamics and photoinduced compositional instabilities in halide perovskite compositions and their implications on photovoltaic and transistor devices.

Dr. Krishanu Dey, who is recipient of several notable awards including the Cambridge India Ramanujam Scholarship (2018-22) and E-MRS Graduate Student Award (2021) during the talk also shared brief updates about his ongoing work on evaporated Perovskites for LED applications

Halide Perovskites, which is a photosensitive semiconductor, are widely employed in solar cells, light emitting diodes, photodetectors, lasers and X Ray Scintilators have revolutionalized the field of emerging optoelectronic devices, where the device performance of solar cells; LEDs and detectors have exhibited an unprecedented growth over the last decade.

Despite such meteoric rise, the phenomenon of ion migration remains a common and longstanding Achilles heel limiting their operational stability.

Dr. Krishanu Dey, who completed his PhD in 2023 from the University of Cambridge under Prof. Sam Stranks investigated mixed Pb-Sn perovskites, resulting in publications in high impact journals, including Nature Materials; Energy and Environmental Science and Advance Materials and earning the best PhD thesis award from the Royal Society of Chemistry (Energy Sector).

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