

Seminar

Crystallisation Tuning and Interface Engineering for Efficient and Stable Perovskite Solar Cells (Single and Tandem Junction Devices)

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Lead halide perovskite and perovskite-inspired materials have attracted a lot of attention for their use in photovoltaic devices owing to their interesting optoelectronic properties and ease of solution process deposition. However, these materials are sensitive and degrade when exposed to moisture, light, and heat. Therefore, enhancing the stability by tuning the crystallization of the materials and simultaneously understanding and developing robust interfaces to mitigate charge carrier recombination and develop efficient photovoltaic devices becomes important. This talk will present various strategies that have been implemented to effectively tune the crystallization of lead halide perovskites and perovskite-inspired materials to suppress charge carrier recombination and improve photovoltaic (single and tandem junction) device performance. Furthermore, the importance and strategies for finding ideal charge-selective contact interfaces for efficient photovoltaic devices will also be discussed. Toward the end, this talk will highlight future prospects and directions for improving the device performance, especially for low bandgap perovskite and silicon-perovskite tandem solar cells.

Tuesday, Oct 3rd 2023

11:30 AM (Tea / Coffee 11.15 AM)

Auditorium, TIFR-H