Tata Institute of Fundamental Research
Survey No. 36/P, Gopanpally Village, Serilingampally, Ranga Reddy Dist., Hyderabad – 500 046

Students' Annual Webinar

Synthesis and morphology control of vacancy-ordered double perovskites through aqueous electrochemistry.

Amogh K Ravi

Vacancy-ordered double perovskites have been considered as alternatives to the toxic lead-containing perovskites variants for various optoelectronic and photovoltaic applications. While most of the halide perovskites thin film preparation involve the use of non-aqueous solvents that are harmful to the environment, our method uses aqueous electrochemistry to deposit the aforementioned perovskite films on a conducting substrate. We analysed the current-time transients associated with the deposition in the light of the well-known Scharifker-Hills model of nucleation and growth to reveal the role of variation in electrochemical parameters in the resulting morphology of the films. The prospect of using these perovskite variants in thermoelectric power generation will be discussed as well.

Thursday, Apr 28th 2022

5:00 PM