

Students' Annual Seminar

Large-Area Vacancy Ordered Perovskite Films' Development for Photo-Electrocatalytic Hydrogen Generation

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Vacancy-ordered double perovskites (VODPs) of A_2BX_6 stoichiometry are potential alternatives to lead containing perovskites of ABX_3 stoichiometry in various applications, especially catalysis, owing to their excellent air and moisture stabilities and better solution processabilities. As in case of other perovskites, their large area synthesis using a facile method remains as a bottleneck. Here we demonstrate the possibilities of their large area synthesis and morphology control using an electrochemical method, and demonstrate the stability and potential applications of such films in catalysis. A mechanistic insight in to the growth mechanism is provided leading to possibilities of the development of a series of different VODPs with varying morphologies, and their efficacy and morphology dependence towards photo-electrocatalytic hydrogen generation is demonstrated. Details of the large area synthesis, stability, photo catalytic hydrogen generation etc. will be discussed during the presentation.

Tuesday, Apr 30th 2024

14:00 Hrs (Tea / Coffee 13:45 Hrs)

Seminar Hall, TIFR-H