EINLADUNG
zum
virtuellen Vortrag von
Prof. Dr. Hugh W. Hillhouse

Department of Chemical Engineering, University of Washington,
Seattle WA, USA

Perovskite Photovoltaics: Prospects, Stability, and Physics/Chemistry-Informed Machine Learning

Dienstag, 10. Mai 2022, um 17:30 Uhr

Zoom-Meeting beitreten:
https://univienna.zoom.us/j/69997591243?pwd=cmNhcHk0alg2eHBneEpHRi82ekNidz09
Meeting-ID: 699 9759 1243
Kenncode: 352718

Abstract
The cost of electricity from solar cells has dropped dramatically over the past decade. However, the large upfront capital cost of manufacturing significantly inhibits the growth rate of solar energy sector (~$1B USD to add 1 GW/yr production capacity) and is much higher than the upfront capital cost to install power generation with natural gas. By developing new chemistry and processing routes that enable solar cells to be printed with roll-to-roll processing, the capital cost of solar energy could be significantly reduced. Organic-inorganic hybrid perovskites are solution processible semiconductors with optoelectronic properties that are on par with the best GaAs. However, these perovskites undergo many degradation pathways, and it is not yet clear if even encapsulated perovskites photovoltaics will have the service lifetime necessary to change the PV sector. The presentation will provide an overview of photovoltaics, an introduction to perovskites, and some highlights from our recent work to understand and predict the rate of degradation of perovskite films and photovoltaic devices, including the development of physics- and chemistry-informed machine learning approaches.