Bio:

Stefan Mitterhofer received his Bachelor's and Master's degrees from the Faculty of Physics, University of Vienna in 2013 and 2014, respectively. He received his Ph.D. from the Faculty of Electrical Engineering, University of Ljubljana in 2021. He is now with the Infrastructure Materials group at the Engineering Laboratory of the National Institute of Standards and Technology. His research interests include the evaluation and prediction of photovoltaic module degradation in experiment and simulation.

Abstract:

This presentation will give an overview of the current work in moisture transport measurements and simulations in photovoltaic modules. Water vapor can enter the modules through the backsheets and edge seals and diffuse further in the encapsulant. Once inside, it can influence several degradation modes including corrosion, delamination and potential induced shunting. Understanding this process is crucial for a better prediction of module behavior in the field. There are various measurement methods used to characterize the materials individually or the laminated modules, each with their advantages and disadvantages. Finite element simulations can help understand these measurements and predict future ingress in fielded modules.