



e-conversion



Special Seminar

**Wednesday, June 15, 2022
10 am**

ZNN, Seminar room EG 0.001

also ONLINE via ZOOM

<https://tum-conf.zoom.us/j/64011532397>

Meeting-ID: 640 1153 2397

Kenncode: 720289

“Operando study on the activation and corrosion of (photo)electrocatalysts”

Electrochemical energy conversion is playing an ever important role in our transition towards sustainability. Development of electrocatalysts features the improvement in efficiency as well as durability under service conditions. An illuminated scanning flow cell (iSFC) setup was developed to characterize both the activity and the stability of catalysts in operando. Using the iSFC, we studied mechanisms behind (photo)degradation of BiVO₄ photoanode [1] as well as different strategies for corrosion inhibition [2]. The operando study is complemented by electron microscopy and atom probe tomography to provide the structural evolution down to the atomic scale. We are applying these analytical methods to understand a new class of delafossite materials PdCoO₂ and their outstanding hydrogen reduction activity [3].

[1] <https://doi.org/10.1021/acs.jpcc.9b07220>

[2] <https://doi.org/10.1021/acsaem.0c01904>

[3] <https://doi.org/10.1038/s41929-019-0400-x>

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