

ANNOUNCEMENT

Vortragsankündigung

Mittwoch, 8. November 2023, 11.15 Uhr im SR I

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“Heterogeneous Photocatalysis: from Fundamentals to our Research at the Interface of Solid-State and Molecular Photosystems”

Heterogeneous photocatalysis gives access to many useful redox chemistries through light-assisted catalysis. In this contribution, I am going to give a general introduction to heterogeneous photocatalysis, share our current understanding of this phenomenon, and overview its existing applications. I will then take a close look at the reaction of water splitting and highlight the major challenges the community is facing here. In the second part of my talk, I will introduce you to our approach to tackling these challenges by using a combination of molecular and solid-state photocatalysts. I will give several examples of our recent work in which we attempt to wire small inorganic clusters to the surface of semiconducting supports.^[1–4]

[1] Cherevan *et al.* Polyoxometalates on Functional Substrates: Concepts, Synergies, and Future Perspectives. *Advanced Science* **2020**, 7 (8), 1903511. <https://doi.org/10.1002/advs.201903511>.

[2] Nandan *et al.* Immobilization of a $[\text{Co}^{\text{III}}\text{Co}^{\text{II}}(\text{H}_2\text{O})\text{W}_{11}\text{O}_{39}]^{7-}$ Polyoxoanion for the Photocatalytic Oxygen Evolution Reaction. *ACS Materials Au* **2022**, 2 (4), 505–515. <https://doi.org/10.1021/acsmaterialsau.2c00025>.

[3] Batool *et al.* Surface Anchoring and Active Sites of $[\text{Mo}_3\text{S}_{13}]^{2-}$ Clusters as Co-Catalysts for Photocatalytic Hydrogen Evolution. *ACS Catalysis* **2022**, 12 (11), 6641–6650. <https://doi.org/10.1021/acscatal.2c00972>.

[4] Batool *et al.* Thiomolybdate Clusters: from Homogeneous Catalysis to Heterogenization and Active Sites. *Advanced Materials* **2023**