

Materials Interfaces as Key Tool for Sustainable Technologies?

Prof. Dr. Adam Slabon
Chair of Inorganic Chemistry,
Fakultät für Mathematik und
Naturwissenschaften,
Bergische Universität Wuppertal

Technologies that are based on *Green Chemistry* principles are regarded as the key for a sustainable future society and a plethora of industrially-relevant chemical processes have already embedded these metrics. Within this respect, materials interfaces design offers the opportunity to tailor the materials properties and to discover novel applications.

In this talk, I will discuss recent examples where the control of the interfaces determines the materials performance for the targeted application: (i) bifunctional molecular electrodes for water electrolysis at neutral pH¹, (ii) nanostructured metal oxynitride photoanodes for solar energy conversion², (iii) bio-inorganic hybrid materials as *green* lubricant additives³, and (iv) nanostructured electrocatalysts for sustainable lignin depolymerization and biorefinery applications⁴⁻⁵.

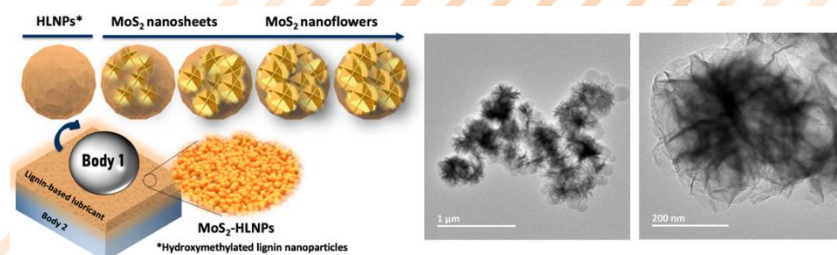


Figure: Lignin-MoS₂ nanostructures as sustainable lubricant additives².

[1] B.Das, A.Slabon, O. Verho, B.Åkermark et al., *J. Mater. Chem. A* **2023** accepted

[2] C.Lu, A.Slabon et al., *Chem. Mater.* **2022**, 34 (15), 6902-6911

[3] L.M.Lindenbeck, A.Slabon, B.V.M.Rodrigues et al., *Nanoscale* **2023** accepted

[4] M.Wolfsgruber, C.Paulik, A.Slabon et al., *ACS Sustainable Chem. Eng.* **2023**, 11 (1), 312-321

[5] G.da Cruz, B.V.M.Rodrigues, A.Slabon et al., *ChemSusChem* **2022**, 15, e202200718

5. Juni 2023

16:00 Uhr

Campus Freudenberg

Hörsaal FZH3