

Type of Position: PhD (TV-L13, 67%, 1 + 2 Years), University of Ulm, Germany

Research Area: Synthetic Chemistry and Spectroscopy

Principle Investigator (PI): Jun.-Prof. Dr. Andrea Pannwitz

Name of Institute: Institute of Inorganic Chemistry I, University of Ulm, Germany

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Long range transmembrane electron transfer via molecular wires

In the context of light energy conversion and artificial photosynthesis, this project will generate optimal local reaction conditions for light-driven reduction (e.g. CO₂ and H₂ evolution) coupled to light driven oxidation (e.g. of water) using co-polymeric membranes and transmembrane molecular wires.

Short description of the Job:

In the project you will synthesize molecular wires for integration into co-polymeric membranes. The wires are oligoaromatic rigid molecules comprised of photosensitizer (light absorber), bridge, polar anchoring groups, and molecular donor and acceptor units. Incorporation into co-polymeric membranes will be performed and (light-driven) electron transfer will be characterized using steady state and time resolved spectroscopy. Light-driven catalysis will be characterized using gas chromatography and other techniques.

The successful applicant will have strong background in synthetic chemistry and a high interest to learn spectroscopy techniques. He or she should have experience in working under inert conditions. He/she should be highly motivated to work and learn in an interdisciplinary, international team and should have excellent written and oral communications skills in English. Good command of German is desirable.