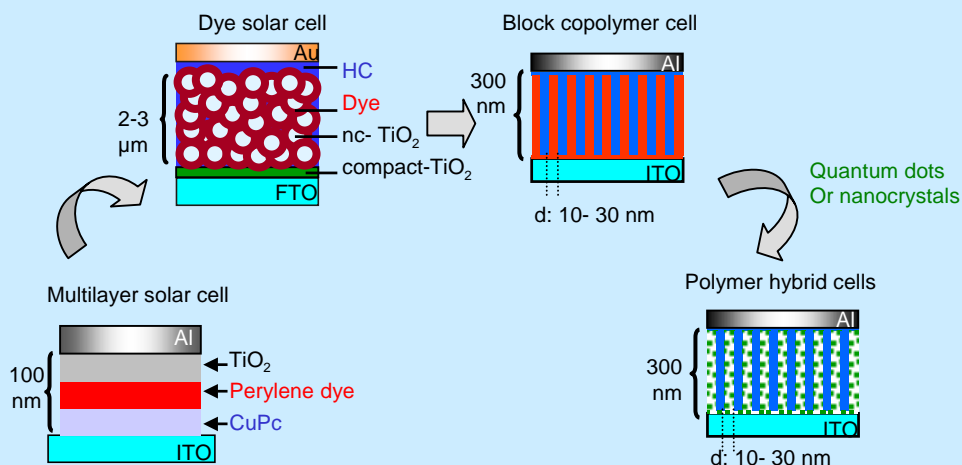




Expertise:

- Tailor-made synthesis of dyes, polymers and block copolymers (controlled and living polymerisation methods), hybrid nanostructures and polymer nanocomposites
- Thin film preparation under inert conditions (screen printing, spin-coating, doctor-blading, vacuum deposition, solvent annealing methods) and characterisation (electron microscopy – SEM, TEM etc, spectroscopical ellipsometry)
- Device preparation and characterisation:
Solar cells: IPCE, I-V characteristics, conductivity, resistivity
Hydrogen production: GC gas analyzer for H₂, O₂, CO etc.

Types of solar cells working with:



Fields of interest:

- Basic studies of energy and electron transfer using tailor-made synthetic model systems
- Molecular electronics such as single molecule switches, molecular wires, photoswitches etc.
- Novel concepts of photovoltaics, solar fuels, non-biased water splitting
- Nanotechnology, Biophotonics and other interdisciplinary research areas
- Hybrid systems involving quantum dots, magnetic nanocrystals, spintronics etc.

Size of research group: 11 members (2 graduate students, 5 PhDs, 3 Postdocs and 1 TA)

Facilities: Lab for solar energy research was established in January 2007

Funding: DFG, BMBF, ESF and Industries

Collaboration looking for: with inorganic chemists, Physicists, physical chemists and engineers

References:

Inorganica Chimica Acta 361 (2008) 635–655, *Adv. Fun. Mat.* 17, 1493-1500 (2007), *Adv. Mater.* 19, 1091-1095 (2007), *Solar Energy Materials and Solar Cells* 91, 432-439 (2007), *Chem. Mater.* 19, 88-94 (2007), *Macromol. Chem. Phys.* 207, 2084-2092 (2006), *Chem Phys.* 328, 403-409 (2006), *Journal of Physical Chemistry B* 110(17), 8723-8730 (2006), *Angew. Chem. Int. Ed* 45, 3364-3368 (2006), *Appl. Phys. Lett.* 85(25), 6185-6187 (2004), *Macromolecules* 37, 8832-8835 (2004), *Macromolecules* 37, 8951-8958 (2004)