

EINLADUNG

zum Vortrag von

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über

A new concept in molecular photovoltaics

am

Dienstag, 31. Jänner 2006, um 17.30 Uhr

im Großen Hörsaal des Instituts für Experimentalphysik der Universität Wien
1090 Wien, Strudlhofgasse 4 / Boltzmannngasse 5, 1. Stock

Abstract:

After more than a dozen years of optimization, the efficiency of the Graetzel cell has been doubled and is now about 11%. This cell uses TiO₂ nanoparticles coated with a sensitizer, most commonly a complex of ruthenium. The excited sensitizer injects an electron into the semiconductor, which transfers it to one electrode, and is subsequently reduced with an iodide ion, which then carries the positive charge to the other electrode. If one could double the efficiency of the Graetzel cell again, it would become competitive. However, most easily conceived improvements have already been made, and radically new - and hence risky - concepts are needed now. The talk describes the initial stages of one such effort, in which we attempt to use a single absorbed photon to effect excitation in two dye molecules. If each of them injected an electron into TiO₂, the current and hence the efficiency would be doubled.