

MAR15-2014-020031

Abstract for an Invited Paper  
for the MAR15 Meeting of  
the American Physical Society

**Photocatalytic Solar Fuel Generation on Semiconductor Nanocrystals<sup>1</sup>**

JOCHEN FELDMANN, Photonics and Optoelectronics Group, Ludwig-Maximilians-Universitaet (LMU), Munich, Germany

I will review our scientific work on photocatalytic solar fuel generation utilizing colloidal semiconductor nanocrystals decorated with catalytic metal clusters. In particular, nanocrystals made of CdS, TiO<sub>2</sub> and organo-metal halide perovskites will be discussed. Key issues are the role of hole scavengers (M. Berr et al., Appl. Phys. Lett. 100, 223903 (2012)), the size and density of catalytic clusters (M. Berr et al.: Appl. Phys. Lett. 97, 093108 (2010) and Nano Letters 12, 5903 (2012) , and dependencies on external parameters such as pH (T. Simon et al., Nature Mat. 13, 1013 (2014)).

<sup>1</sup>Financially supported by the Bavarian Research Cluster "Solar Technologies Go Hybrid: SolTech"