

Abstract Submitted
for the MAR10 Meeting of
The American Physical Society

Titania films for dye sensitized solar cells CHRISTOPHER GRABLUTZ, MARIAN TZOLOV, Lock Haven University of PA — Dye sensitized solar cells are a relatively new concept for photovoltaic conversion of solar energy. It turns out as a very successful concept due to the commercialization that is ongoing in several countries around the world. Despite of this, there are number of open technological and fundamental problems. Titanium dioxide paste is used since the very inception of the idea and although significantly improved it is still not clear in detail how does it satisfy so successfully the contradictory requirements for good charge collection and for highly developed surface as a host for the sensitizing dye. We will present our results in a very reproducible and effective way of producing titania paste. The Scanning Electron Microscopy images show very homogeneous dispersion of the titania nanoparticles. The steady state electrical and photoelectrical measurements, together with impedance spectroscopy and photocurrent time response experiments were correlated with the morphology of the titania films.

Christopher Grablutz
Lock Haven University of PA

Date submitted: 01 Dec 2009

Electronic form version 1.4