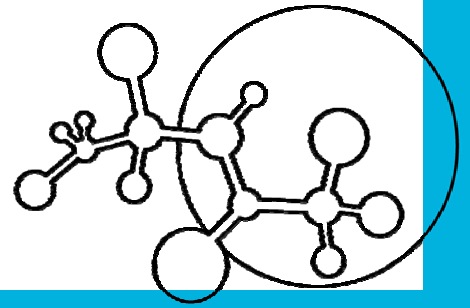




FRIAS

FREIBURG INSTITUTE FOR ADVANCED STUDIES
ALBERT -LUDWIGS -UNIVERSITÄT FREIBURG
SCHOOL OF SOFT MATTER RESEARCH



Quantum Efficiency Seminar and Colloquium

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Department of Physics, University of La Habana

Macro and microscopic study of CdS/CdTe solar cells

Multilayer thin films solar cells are complex devices. Considered as the second generation photovoltaic, its goal is to achieve better performances using less material than traditional Si solar cells. However, understanding the physics ruling the interaction between the multiple layers and particularly the reaction of these layers to the thermal treatment has been a difficult task.

The CdTe/CdS solar cells, in particular, are considered a very promising device for the conversion of solar energy into electricity. Through years of intense research, many advances were made in the optimization of these devices, but the role of the thermal treatment over the glass/TCO/CdS/CdTe structure was a mystery until very recently. Considered as a magical technological step, cells without a treatment work bad or nothing at all, while treated cells obtained a record performance of 16 %.

After several approaches, it was possible to clarify this issue when the macroscopic response of the cells was considered under a microscopic view. In this conference we present the electrical and SEM-cathodoluminescence measurements, that together, helped us to understand the impact of an innovative thermal treatment in the presence of Cl on these devices.

Date: Tuesday, May 31st, 2011 2:15 pm

Location: FRIAS Seminar Room, Albertstr. 19, Freiburg

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