

Programme
for the jointly organised summer school and workshop
by the graduate school MAINZ /MATCOR and CECAM

**Critical materials issues in photovoltaics
Searching for solutions via theory and simulations**

May 31st to June 4th 2008, Lausanne

Departure in Mainz is scheduled for May 31 at 8:39 a.m. (see attached travel information)

Arrival in Lausanne at 2:15 p.m.

May, 31st 2008 (Continental hôtel, 2 place de la gare, Salon Miroir)

- 15:00 to 16:00 – Coffee Break
- 16:00 to 17:00 – Presentation – Stanislav Chadov – Density functional theory
- 17:00 to 18:00 – Presentation – Thomas Gruhn – Introduction to Monte Carlo simulation

June, 1st 2008 (Continental hôtel, 2 place de la gare, Salon Miroir)

- 9:00 to 10:00 – Presentation – Reiner Klenk – Title to be announced
- 10:00 to 11:00 – Presentation – Thomas Hahn – Thin films of solar cells
- 11:00 to 11:30 – Coffee Break
- 11:30 to 12:00 – Discussion

June, 2nd 2008

REGISTRATION and INTRODUCTION

- 08:30 to 09:00 - Registration
- 09:00 to 09:20 - Welcome

Session I - Inorganic Thin Films : Absorbers, Doping, and Transparent Conductors

- 09:20 to 10:10 - Presentation - Alex Zunger - What can theory do to a...
- 10:10 to 10:50 - Presentation - Reiner Klenk - Material Properties and D...
- 10:50 to 11:20 - Coffee Break
- 11:20 to 12:10 - Presentation - Andreas Klein - Status and challenges of ...
- 12:10 to 14:00 - Lunch Break

Session II - Inorganic Thin Films : Defects and Grain Boundaries

- 14:00 to 14:50 - Presentation - Malgorzata Igalson - Experimental verification...
- 14:50 to 15:40 - Presentation - Clas Persson - Engineering the electroni...
- 15:40 to 16:10 - Coffee Break
- 16:10 to 17:00 - Presentation - Susanne Siebentritt - Point defects and grain ..

Session III - Opportunities for theorists in solar Thin Films

- 17:00 to 18:00 - Discussion

DINNER

June, 3rd 2008

Session IV - Exceeding the efficiency limit via the Intermediate Band Solar Cell

- 08:30 to 09:20 - Presentation - Antonio Luque - Advances in the research ...
- 09:20 to 10:10 - Presentation - Gabriel Bester - Exploring the use of self...
- 10:10 to 10:40 - Coffee Break
- 10:40 to 11:30 - Presentation - Perla Wahnou - Ab-initio Characterizatio...
- 11:30 to 12:20 - Presentation - José C. Conesa - Sulphide-type intermediat...
- 12:20 to 14:00 - Lunch Break

Session V - More on Intermediate Band Solar Cell

- 14:00 to 14:50 - Presentation - Stanko Tomic - Absorption characteristic...
- 14:50 to 15:40 - Presentation - Silvana Botti - Ab initio modeling of opt...
- 15:40 to 16:10 - Coffee Break

Session VI - Opportunities and problems for theory and simulations : IB & CIGS

- 16:10 to 17:10 - Discussion

Session VII - Quantum Dots: Theory I

- 17:10 to 18:00 - Presentation - Alex Zunger - Theory of colloidal ...

DINNER

June, 4th 2008

Session VIII - Using quantum dots to get two (electron hole pairs) for the price of one (photon)

- 09:00 to 09:50 - Presentation - Victor Klimov - Carrier Multiplication in...
- 09:50 to 10:40 - Presentation - Guy Allan - Influence of the electron...
- 10:40 to 11:10 - Coffee Break

Session IX - Creating libraries of materials to select candidates with target properties

- 11:10 to 12:00 - Presentation - John Rodgers - Materials Informatics + Q...

Session X - More on open issues for modeling and simulations

- 12:00 to 12:45 - Discussion
- 12:45 to 13:00 - Closing word

**Train departure is scheduled for 4.45 p.m. at main station Lausanne
Arrival in Mainz at 10.55 p.m.**