

## **Physics seminar**

**Monday, 7<sup>th</sup> December 2009 at 16h00**

**Campus Kirchberg**

**Salle des Conseils**

**Jes Larsen**, PhD student at LPV will speak about

### **"Defect spectroscopy in chalcopyrite semiconductors"**

Chalcopyrites are used as absorbers in thin film solar cells. Thin film solar cells are considered the next generation of photovoltaic modules because of their large potential for cost reduction. A short introduction to thin film solar cells and to chalcopyrite semiconductors will be given.

The heart of each solar cell is a p/n diode which crucially depends on the doping in the semiconductor. The shallow defects which are responsible for the doping can be investigated by photoluminescence spectroscopy. To avoid the influence of grain boundaries, the investigations are started with epitaxial films. We use metal organic vapour phase epitaxy to grow our single crystalline films. In situ analysis by reflection spectroscopy allows to understand the details of the film growth. We will discuss the epitaxy process and the results obtained by photoluminescence."