

## **EPFL STI IMT-NE PV-LAB**

### **Seminar**

**Friday 27<sup>th</sup> May 2011**

**MT 2 11.00**

Rue A.-L. Breguet 2, CH-2000 Neuchâtel

**Structural, electronic and transport properties of  
amorphous/crystalline silicon heterojunctions**

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### **ABSTRACT**

Despite the widespread application in diodes and solar cells, fundamental aspects concerning the physics of a-Si:H/c-Si heterojunctions remain under dispute. In the present work, the microscopic properties of thin undoped a-Si:H layers (commonly employed as buffer layers in high-efficiency solar cells) are linked with the resulting behaviour of the heterojunction. Thus, insight is gained in the dependence of heterojunction band lineup, c-Si surface passivation, electronic transport and ultimately solar cell performance on the structural and electronic properties of the thin a-Si:H layers.