

**Ve středu dne 11. září 2013 v 10:00 hod.
ve Fyzikálním ústavu Cukrovarnická v seminární
místnosti (budova A, 1. patro)**

Thin film silicon layers: from low cost thin film solar modules to high efficiency crystalline heterojunction cells



Christophe Ballif

*head of Photovoltaics and thin film electronics laboratory
at EPFL-IMT, and director of CSEM PV-Center in
Neuchâtel, Switzerland.*

In the thin film silicon solar cell technology, remarkable improvements and novel device design should allow for low production costs of solar modules with efficiency 10-11% in the range of 0.35-0.4€/Wp. The advantage of low cost and abundant materials has to be leveraged by clever solar park designs to compete with technologies with higher efficiency. Challenges to reach efficiencies of devices over 16% will be discussed.

For crystalline silicon, the use of coating technologies based on ultra-thin amorphous silicon layers and thin transparent conductive oxide allows the realization of solar cells with a limited number of process steps, with potential for low cost at high efficiency. We'll show how we reach over 22% in our laboratory. Indeed, the processes are now under industrialization by several companies.

Eventually the potential for thousands of GW of peak power produced by such technologies will be discussed.