



Einladung

Es spricht: **Dr. Matthias Auf der Maur**
Dept. of Electronics engineering of University of Rome "Tor Vergata"

Zeit: **Donnerstag, 02. März 2016, 10:00 Uhr**

Ort: **Technische Universität Berlin
Institut für Festkörperphysik
Hardenbergstraße 36, 10623 Berlin
Raum EW 561**

Thema: **„Effect of random alloy fluctuations on optical and electronic properties of quantum well devices“**

Abstract:

The presentation will address the effects of random alloy fluctuations in quantum well LED devices. With the help of atomistic models, which are most suitable to include alloy disorder on atomic scale, we study in particular the influence of uniform and non-uniform alloy fluctuations on the spontaneous recombination in InGaN/GaN quantum wells. We will show, that these fluctuations - present even in the ideal, perfect material - can contribute considerably to the 'green gap'. Moreover, the simulation model considering alloy fluctuations can reproduce well experimental spectral broadening, and unexpected temperature behaviour of the spontaneous recombination coefficient. In electronic transport, alloy fluctuations can lead to defect like transport across quantum barriers, or into blocking layers. We will show, how such atomistic calculations can be integrated in macroscopic device simulation, and compare simulation results with measured data.

Gäste sind herzlich willkommen!
Prof. Dr. A. Hoffmann