



TECHNISCHE UNIVERSITÄT
CHEMNITZ

Institut für Physik Physikalisches Kolloquium



Mittwoch, 27.01.2016, um 16:00 Uhr

Ort: Reichenhainer Str. 90;

Zentrales Hörsaal- und Seminargebäude, Raum 2/N013

Prof. Dr. Andreas Waag

TU Braunschweig

Institut für Halbleitertechnik

Multifunctional 3-dimensional Gallium Nitride: Strategies for solid state lighting, electronics and sensing

The initiation of GaN technology in the late 1980ies has been awarded with the Physics Nobel Prize 2014. Meanwhile, GaN has become an important base material for solid state lighting and HF electronics.

Beyond existing planar GaN technology, nanorods and related high aspect ratio 3D GaN nanostructures recently attracted a lot of attention since they are expected to be an exciting new route towards extending the freedom for device design in GaN technology. Such structures offer large surfaces, defect free high quality material, as well as non-polar surface orientations, including the possibility to use very large area foreign substrates without implementing large area strain. All of these aspects are difficult or impossible to achieve when planar substrate approaches are used. These aspects as a whole make the 3D approach particularly interesting.

An overview on the state of the art of 3D GaN research will be given, pointing out the necessity for further epitaxy related research, but also describing the increasingly interesting demonstration of 3D devices like 3D LEDs, 3D nanoFETs and 3D nanosensing devices, and their potential for solid state lighting, power electronics and nanometrology.

Alle Zuhörer sind ab 15:45 zum Kaffee vor dem Hörsaal eingeladen.



Informationen zum Vortrag erteilt:

Prof. Dr. Ulrich Theodor Schwarz, Tel: 0371 531-30001

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