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Nanoscale Imaging of Structural and Optical Properties of Nitride Nano-Structures Using Helium Temperature Scanning Transmission Electron Microscopy Cathodoluminescence

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Abstract: Three-dimensional microrod light emitting diodes (LEDs) are promising candidates for future solid state lighting due to a very high crystalline quality and an increased effective light emitting area in comparison to conventional planar devices. For a detailed understanding of the complex core-shell layer structure of nitride based microrods, a systematic determination and correlation of the structural, optical, and electronic properties on a nanometer-scale is essential. In this letter, we present a unique approach for a direct one-by-one correlation of high-aspect ratio InGaN/GaN core-shell microrods using low-temperature cathodoluminescence spectroscopy directly in a scanning transmission electron microscope.

About Speaker: *Education and Training:*

Habilitation 2012: *venia legendi* in "Experimental Physics" at the Otto-von-Guericke-University Magdeburg, Germany

Dissertation 1999: Ph.D. in physics ("summa cum laude")

Research and Professional Experience:

Ass. professor 2001 – today: Institute of Solid State Physics, University of Magdeburg, Germany

Visiting Scientist: 02/1998 – 03/1998: Institute of Scientific and Industrial Research ISIR, Osaka University, Japan

Visiting Scientist: 03/2015 – 06/2015: in the group of Prof. Chichibu, Institute of Multidisciplinary Research for Advanced Materials (IMRAM), Tohoku University Sendai, Japan (JSPS grant)

Postdoc 02/2000 – 07/2001: in the group of Fernando Ponce. Dep. of Physics and Astronomy, Arizona State University, Tempe, AZ, USA

Awards 1992 - 1999: Scholarship of the "Studienstiftung des Deutschen Volkes"

Publications:

More than 150 publications in peer reviewed journals, > 2600 citations, h-index = 26

Since 1998 more than 410 contributions on scientific conferences including 25 invited talks.

时间: 9月8日 (星期四) 15:00—16:30

地点: 北京大学物理大楼西楼202报告厅

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