UNIVERSITÄT PADERBORN
Die Universität der Informationsgesellschaft

FAKULTÄT FÜR NATURWISSEN-SCHAFTEN

UNIVERSITÄT PADERBORN | 33095 PADERBORN

Invitation / Einladung

Graduate Lectures on
Optoelectronics and Photonics

Date: **Wednesday, 4:15 p. m.**
Room of the Seminar: **Lecture Hall A1**
(LV 061150)

Date	Fundamentals (F) / Seminar (S)	Lecturer	Subject
15.04.09	F (I.3)	Schuhmann, Förstner, Meier: Computational electrodynamics, metamaterials	
22.04.09	S	Dr. Szymon Pustelny, University of Crakow, Poland	Utilization of Quantum Optics in Magnetic Field Sensing and Practical Applications
29.04.09	F (I.3)	Schuhmann, Förstner, Meier: Computational electrodynamics, metamaterials	
06.05.09	S	No seminar due to preparation of our annual meeting.	
13.05.09	F (I.3)	Schuhmann, Förstner, Meier: Computational electrodynamics, metamaterials	
27.05.09	F (I.3)	Schuhmann, Förstner, Meier: Computational electrodynamics, metamaterials	
03.06.09	S	Dr. Hui Hu, Integrated Optics, Univ. of Paderborn	"Smart-Cut" Lithium Niobate single Crystalline Layers: a New Platform for Integrated Nanophotonics
17.06.09	S	Dr. Alexander Kharchenko, Fa. PANalytical, Almelo, NL	New trends in high-resolution X-ray diffraction
24.06.09	F (II.3)	As, Lischka: Quantum structures and microcavities	
01.07.09	S	N. N.	
08.07.09	F (II.3)	As, Lischka: Quantum structures and microcavities	
15.07.09	S	Dr. Detlef Schikora, Semiconductor Physics, Univ. of Paderborn	Interaction between Laser Light and Tissue
22.07.09	F (II.3)	As, Lischka: Quantum structures and microcavities	

gez. H. Kitzerow

22.04.2009:
Dr. Szymon Pustelny
Institute of Physics
University of Crakow, Poland

Utilization of Quantum Optics in Magnetic Field Sensing and Practical Applications

Recent discoveries in the field of nonlinear and quantum optics, in addition to new inventions in opto-electronics, lead to a rapid development of many fields of contemporary science and technology, in particular optical magnetometry. Modern optical magnetometers achieve ultra-high sensitivities, broad dynamic ranges, small dimensions, low costs and almost no maintenances, which make them very attractive for many fundamental and commercial applications. The concept of optical magnetometers will be discussed based on an example of magnetometers exploiting the nonlinear Faraday effect (NFE). Performance of the NFE magnetometer will be discussed and some of its most promising applications will be reviewed.

17.06.09
Dr. Alexander Kharchenko,
Fa. PANalytical:

New trends in high-resolution X-ray diffraction

High-resolution X-ray diffraction is an important non-destructive technique for the characterization of nanostructures. This technique allows the quantification of important structural parameters from layer thickness and composition to interface roughness and defect density. In this lecture I will provide overview of the main X-ray scattering tools for the characterization of nanostructures. The concepts of these methods, their capabilities and limitations will be given in this talk.
Furthermore, the latest developments in the field of X-ray diffraction will be presented. These will cover X-ray scattering hardware developments as well as new approaches for the data collection.