



# summer school

International Photonics Cluster  
Berlin · Tucson · Ottawa

07<sup>th</sup>-11<sup>th</sup> August 2006

Humboldt University  
of Berlin  
Institute of Physics  
Newtonstraße 15  
D-12489 Berlin  
[www.optecbb.de/summerschool](http://www.optecbb.de/summerschool)

Campus Berlin Adlershof

## Adaptive Optics and Microoptics

Supported by



Pioneers in Photonic Technology

WISTA-MANAGEMENT GMBH

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### Supported by

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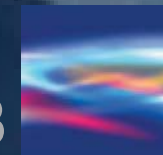
## Adaptive Optics and Microoptics

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## Monday, 07<sup>th</sup> of August

14.00 Registration  
19.00 Welcome Reception

## Tuesday, 08<sup>th</sup> of August

**Theory of Microoptics**  
Introduction to diffractive optics  
*Dr. Andreas Hermerschmidt*, HOLOEYE Photonics AG

09.30-10.00 Rigorous numerical methods of grating diffraction for micro-optical elements  
*Dr. Bernd Kleemann*, Carl Zeiss AG

10.00-10.30 Thin film microoptical approaches  
*Dr. Rüdiger Grunwald*, Max-Born-Institut für Nichtlineare Optik und Kurzzeitspektroskopie

**10.30-11.00 Coffee Break**

11.00-12.30 Flexible modeling and design for Microoptics with LightTrans VirtualLab™  
*Prof. Dr. Frank Wyrowski*, Lighttrans GmbH

**12.30-14.00 Lunch Break**

**Fabrication of microoptics**  
Micro- and nano-scale optical components fabricated by use of VLSI  
*Margit Ferstl*, Fraunhofer-Institut für Nachrichtentechnik Heinrich-Hertz-Institut

14.30-15.00 The preparation of micro molding tools by LiGA technique  
*Dr. Daniel Schondelmaier*, Berliner Elektronenspeicherring - Gesellschaft für Synchrotronstrahlung (BESSY) m. b. H.

15.00-15.30 Micro machining technologies for optical applications  
*Dirk Oberschmidt*, Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e.V.

**15.30-16.00 Coffee Break**

**Implementation of microoptical elements**  
16.00-16.30 Diffractive Fizeau Null Lenses - diffractive optical lenses for measurements on aspheres  
*Jean-Michel Asfour*, DIOPTIC GmbH

16.30-17.00 Geometrical sensor calibration by means of diffractive optical elements  
*Dr. Adrian Schischmanow*, Deutsches Zentrum für Luft- und Raumfahrt e. V. (DLR)

17.00-17.30 Square shaped »dots« for color laser marking technology with the application in high secure ID Documents  
*Dr. Klaus Schäfer*, ORGA Systems GmbH

20.00 Reception and exhibition of local companies and institutes

## Wednesday, 09<sup>th</sup> of August

**Fiberoptics Optical Interconnects**  
Light propagation in fibers physical and numerical modelling  
*Dr. Carl Weinert*, Fraunhofer-Institut für Nachrichtentechnik Heinrich-Hertz-Institut

09.30-10.00 Resolvable and fixed optical connection technology physical principles and realisation  
*Cristian Kutza*, FOC GmbH

10.00-10.30 Precise optical fiber coupling technologies for photonic modul packing  
*Dr. Henning Schröder*, Fraunhofer Institut für Zuverlässigkeit und Mikrointegration (IZM)

**10.30-11.00 Coffee Break**

11.00-11.30 High speed optical transmission systems  
*Dr. Christian-Alexander Bunge*, Technische Universität Berlin, FG Hochfrequenztechnik

11.30-12.00 High power fiber lasers  
*Dr. Jens Limpert*, Universität Jena, IAP

**12.00-13.30 Lunch Break**

13.30-14.30 Time slot for additional confirmed talks as well as for visits at local companies on the WISTA campus

Excursion

## Thursday, 10<sup>th</sup> of August

09.00-09.30 **Optical Materials Nanooptics**  
Electronic and structural properties of organic semiconductors  
*Dr. Norbert Koch*, Humboldt-Universität zu Berlin

09.30-10.00 **Optical properties of conjugated organic semiconductors**  
*Dr. Frank Balzer*, Humboldt-Universität zu Berlin

10.00-10.30 **Organic Light Emitting Diodes**  
*Dr. Karsten Walzer*, Technische Universität Dresden

**10.30-11.00 Coffee Break**

11.00-11.45 **Printed Electronics**  
*Prof. Dr. Emil J. W. List*, Technische Universität Graz

11.45-12.30 **Excitonic processes and lasing in ZnO nanorods**  
*Holger Lange*, Max-Born-Institut für Nichtlineare Optik und Kurzzeitspektroskopie

**12.30-14.00 Lunch Break**

14.00-14.30 **Applications of Microoptics and Adaptive Optics I**  
Spatial Light Modulator technologies and applications  
*Sven Krüger*, HOLOEYE Photonics AG

14.30-15.00 Experiments with liquid crystal micro-displays in advanced university laboratory exercises  
*Frank Kallmeyer*, Technische Universität Berlin

15.00-15.30 Amplitude and phase modulating liquid crystal spatial light modulators in a reference coded holographic data storage system  
*Dr. Judit Reményi*, OPTILINK

**15.30-16.00 Coffee Break**

16.00-16.30 **MEMS SLM Development & Applications at IPMS**  
*Dr. Andreas Gehner*, Fraunhofer Institut für Photonische Mikrosysteme (IPMS)

16.30-17.00 Inspection in manufacturing by high speed projection systems based on Digital Micromirror Devices  
*Thorsten Huth*, GFMesstechnik GmbH

17.00-17.30 **Adaptive optics in astronomy**  
*Dr. Jesper Storm*, Astrophysikalisches Institut Potsdam (AIP)

## Friday, 11<sup>th</sup> of August

09.00-09.30 **Applications of Microoptics and Adaptive Optics II**  
Nondiffracting ultrafast images generated with SLM and microaxicon arrays  
*Dr. Rüdiger Grunwald*, Max-Born-Institut für Nichtlineare Optik und Kurzzeitspektroskopie

09.30-10.00 Interferometric testing of aspheres based on programmableCGHs  
*Ricarda Kafka*, FISBA OPTIK GmbH

10.00-10.30 SHG with high power semiconductor lasers: Interrelation between laser beam characteristics, optical design and properties of nonlinear crystals  
*Dr. Reiner Güther*, Ferdinand-Braun-Institut für Höchstfrequenztechnik

**10.30-11.00 Coffee Break**

11.00-11.30 An optimisation scheme for display of complex valued holograms on a liquid crystal Spatial Light Modulator  
*Dr. Unnikrishnan Gopinathan*, University College Dublin, National University of Ireland

11.30-12.00 **Applications of Spatial Light Modulators**  
*Dr. Jonathan Leach*, University of Glasgow

12.00-12.30 **Diffractive optical tweezers at an air-liquid interface**  
*Prof. Dr. Stefan Bernet*, Medizinische Universität Innsbruck

**12.30-14.00 Lunch Break**

14.00-14.30 Phase control in optical processing systems  
*Dr. Jörg Imbrock*, Universität Münster

14.30-15.00 Applications of the high resolution optical reconstruction of digital holograms  
*Dr. Günther Wernicke*, Humboldt-Universität zu Berlin

## Registration



International Photonics Cluster  
Berlin · Tucson · Ottawa

Last Name .....

First Name .....

Address .....

City/Country .....

Phone/Fax .....

E-mail .....

Institution  
(when applicable)

Participation fee: 200,00 EUR  
Member of Kompetenznetze Optische Technologien: 100,00 EUR  
Students 50,00 EUR

Date

Signature

Please complete and fax this form before July 14<sup>th</sup> to:  
International Photonics Cluster Summer School,  
Mr. Bernd Weidner, + 49.30.6392-1729, Email: [summerschool@optecbb.de](mailto:summerschool@optecbb.de)

We request that you please transfer the participation fee upon receipt of confirmation of registration.