

# FORNEL

Bavarian Research Cooperation for Nanoelectronics

## 3<sup>rd</sup> FORNEL Workshop on Nanoelectronics

Erlangen, March 27, 2007



Invitation and Preliminary Program



Bayerische  
Forschungsstiftung

Friedrich-Alexander-Universität  
Erlangen-Nürnberg



Fraunhofer



Institut  
Integrierte Systeme und  
Bauelementetechnologie



**Bavarian Research Cooperation  
for Nanoelectronics**

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**Erlangen, March 27, 2007**

In all technical fields and in almost every aspect of life including health care, mobility, safety and security, communication, as well as entertainment, micro and nanoelectronics play an often hidden but essential role. From the social and economic point of view, innovations in nanoelectronics have a tremendous impact. Due to the fast development of microelectronics associated with the transition to nanoelectronics physical and economic limits will soon be reached. To ensure technological competitiveness, we have to face these challenges for the realization of novel electron devices and circuits on a nanometer scale.

The Bayerische Forschungsstiftung stays abreast of this development by the support of the Bavarian Research Cooperation for Nanoelectronics (FORNEL), an association of partners from industry and academia, which started its work in 2004 and has established itself as an efficient and successful network of Bavarian nanoelectronics research dealing with issues of high industrial relevance.

After successful workshops in Munich and Würzburg, the 3<sup>rd</sup> FORNEL Workshop on Nanoelectronics will be held in Erlangen on March 27, 2007. Results of FORNEL research but also other important topics from nanoelectronics with international high-class speakers will be presented, as can be seen in the included program. We cordially invite you to participate in the workshop.

Please return the attached reply form by fax or mail not later than March 12, 2007.

Looking forward to seeing you in Erlangen!

With kind regards,

A handwritten signature in black ink, appearing to read "M. Ryszel", written in a cursive style.

Prof. Dr. Heiner Ryszel

Chair of Electron Devices, University of Erlangen-Nuremberg  
Fraunhofer IISB, Erlangen

Speaker of FORNEL



**3<sup>rd</sup> FORNEL Workshop on Nanoelectronics  
Erlangen, March 27, 2007**

- 9:00 **Welcome and Presentation of FORNEL**  
H. Ryssel, University of Erlangen-Nuremberg and Fraunhofer IISB, Erlangen
- 9:15 **Physics-Based Modeling of Quantum Transport in Nanostructured Devices**  
A. Heigl, G. Wachutka, Technical University of Munich
- 9:45 **Simulation of CMOS Nanotransistors**  
A. Burenkov, Fraunhofer IISB, Erlangen
- 10:15 **Simulation of the Silicon Tunnel FET**  
K. Boucart, EPFL Lausanne, Switzerland
- 10:45 **Ab-Initio Assisted Process and Device Simulation for Nanoelectronic Devices**  
W. Windl, Ohio State University, USA
- 11:15 *Coffee Break*
- 11:35 **Memory Concepts for Sub-50nm Technology Generations**  
T. Mikolajick, Technical University of Freiberg
- 12:05 **Analog Circuit Design with Multi-Gate and Tunneling FETs**  
M. Fulde, M. Weis, G. Knoblinger, D. Schmitt-Landsiedel, Technical University of Munich
- 12:35 *Lunch*
- 13:40 **Compact Logic Gates with Electron Y-Branch Switches**  
L. Worschech, D. Hartmann, A. Forchel, University of Würzburg
- 14:10 **Probes with Nanotips – from Single Probes to Intelligent Parallel Probe Arrays**  
J. Diebel, NanoWorld Services GmbH, Erlangen
- 14:40 **Optimization of the Quartz Template Fabrication for UV Nanoimprint Lithography**  
H. Schmitt, University of Erlangen-Nuremberg
- 15:10 **Projection Mask-Less Nano-Lithography (PML2) and Nano-Patterning (PMLP) for Nanoelectronics**  
H. Loeschner, E. Platzgummer, IMS Nanofabrication AG, Vienna, Austria
- 15:40 *Coffee Break*
- 16:00 **A Comparative Study of ALD Grown High-k Dielectrics Using Ozone and Water as Oxidant**  
F. Speck, University of Erlangen-Nuremberg
- 16:30 **In-situ Monitoring and Optimization of ALD Processes**  
V. Rangelov, ATV Technologie GmbH, Vaterstetten
- 17:00 **Cleaning Methods for Silicon Surfaces**  
T. Stimpel-Lindner, Bundeswehr University, Munich
- 17:30 **Quantitative Determination of Oxide Charge and Interface State Density by Photocurrent Analysis**  
M. Rommel, Fraunhofer IISB, Erlangen
- 18:00 **Closing Remarks**  
H. Ryssel, University of Erlangen-Nuremberg and Fraunhofer IISB, Erlangen



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for Nanoelectronics**

**Please return form by March 12, 2007:**

Dr. Bernd Fischer  
Fraunhofer IISB  
Schottkystrasse 10  
91058 Erlangen  
Germany

**Fax +49-9131-761-102**  
Phone +49-9131-761-106  
bernd.fischer@iisb.fraunhofer.de

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Erlangen, March 27, 2007

**Location:**

Fraunhofer Institute of Integrated Systems and Device Technology (IISB)  
Schottkystrasse 10  
91058 Erlangen  
Germany

For directions and map see <http://www.iisb.fraunhofer.de/en/profil/address.htm>

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title / first name / last name

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**I will attend the 3<sup>rd</sup> FORNEL Workshop on Nanoelectronics**

- Yes
- No

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date / signature