

KOSMOS

SUMMER UNIVERSITY

2011



KOSMOS Summer University 2011

Frontiers of Organic / Inorganic Hybrid Materials for Electronics and Optoelectronics (KOSMOS 2011)

September 17 – 25, 2011

Humboldt-Universität zu Berlin

IRIS Adlershof

The main objective of KOSMOS 2011 is to teach fundamentals of the physics and chemistry of hybrid materials formed by combining inorganic semiconductors and metals with conjugated organic materials, which are of interest for applications in electronics and optoelectronics. KOSMOS 2011 enables an advanced quality of international partnership in research on innovative hybrid materials and to foster young researchers.

KOSMOS 2011 on Frontiers of Organic/Inorganic Hybrid Materials for Electronics and Optoelectronics is a joint venture of Humboldt-Universität's Integrative Research Institute for the Sciences IRIS Adlershof, Chiba University (Japan) and the National University of Singapore. It is the first in a series of KOSMOS Summer Universities at Humboldt-Universität that will take place annually with varying topics and partners.

KOSMOS 2011 is open to graduate students, doctoral candidates and postdocs who are interested in the physics and chemistry of hybrid organic/inorganic materials and who already have a basic knowledge in this field.

Participants are encouraged to bring a poster on their own research. Posters will be on display throughout KOSMOS 2011.

Topics and Lecturers

Topics

- Hybrid materials comprising conjugated organic materials, graphene, inorganic semiconductors, metals, dielectrics
- Making of hybrid materials and systems
- Revealing the structure: from the atomic to the macroscopic scale
- Electronic structure and charge transport in hybrids
- Optical properties: hybrid excitations and their dynamics
- Theoretical modeling of hybrid materials
- Opto-electronic devices with hybrid materials

Lecturers

Georg Heimel (HU Berlin)
Fritz Henneberger (HU Berlin)
Peter Ho (NUS)
Hisao Ishii (Chiba University)
Nori Kobayashi (Chiba University)
Norbert Koch (HU Berlin)
Stefan Kowarik (HU Berlin)
Masakazu Nakamura (Chiba University)
Barbaros Özyilmaz (NUS)
Jürgen P. Rabe (HU Berlin)
Stephanie Reich (FU Berlin)
Christian Thomsen (TU Berlin)
Nobuo Ueno (Chiba University)
Andrew S. T. Wee (NUS)
Jishan Wu (NUS)

Scientific Chairs

Jürgen P. Rabe
Norbert Koch

Humboldt-Universität zu Berlin
IRIS Adlershof &
Department of Physics
Newtonstraße 15 | 12489 Berlin

Fees and Application

Fees

The participation fee for KOSMOS 2011 is 750 € and covers the scientific programme, accommodation (17th to 25th September) and meals during the official programme, transportation in Berlin as well as a social/ cultural programme. Travel costs are not included.

We offer a limited number of programme stipends to participants from the National University of Singapore, Chiba University, and Humboldt-Universität zu Berlin.

Application

To apply for KOSMOS 2011, please submit the following:

- Curriculum Vitae
- Letter of Motivation (1/2 page addressing the question »Why do you want to attend?«)
- Title of poster presentation (optional)

Applicants from Chiba University, Japan are kindly asked to send their application to Prof. Nobuo Ueno

uenon@faculty.chiba-u.jp

Applicants from the National University of Singapore are kindly asked to send their application to Prof. Andrew Wee

phyweets@nus.edu.sg

Applicants from other institutions are kindly asked to send their application to

kosmos.2011@uv.hu-berlin.de

The application deadline is July 15, 2011.

Scientific Background

Future progress of our information-based society demands the concentration of opto-electronic functions with increasingly higher capabilities in smaller and smaller volumes. Established materials have been pushed close to their intrinsic limits. Hybrid materials from inorganic and organic components can combine the strengths of their constituents, and offer the possibility to overcome currently existing restrictions. The exploration of novel hybrid systems, uniting a multitude of different material classes, is therefore found on international research agendas. The fundamental chemical, electronic, and photonic interactions arising from the different nature of the components must be elucidated. The new knowledge will enable us to establish methods for the reliable fabrication of hybrids and to control their opto-electronic properties.

Contact

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Partners

