

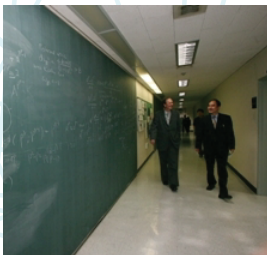
FRIAS School of Soft Matter visits two Excellence Institutes in South Korea



From May 23rd to 27th, a FRIAS delegation, consisting of the school directors, Professors Hermann Grabert and Jan Korvink, as well as physics scientist Dr. Wolfgang Häusler and scientific coordinator Dr. Britta Küst paid a commendatory visit to two major Korean institutes. On the agenda was the Korean Advanced Institute for Science and Technology (KAIST) in Daejeon and the Korean Institute of Advanced Study (KIAS) in Seoul. KAIST was established in 1971 as Korea's first graduate school specializing in science and engineering. The institute is located in Daejeon, 150 kilometers south of the capital city, Seoul. Over the past four decades, KAIST has evolved into a global research university with about 5500 students in bachelor and master programs, 2500 in doctoral programs and 1100 senior scientists. At KAIST the delegation visited the Central Research Instrument Facility, an impressive facility established as a technology support center for staff and students. Here not only very elaborate equipment for chemical, structural, surface and thermophysical analysis is housed in one facility, but also the technical >

staff is present 24 hours a day to conduct the measurements required by the scientists. The NanoCentury Institute for interdisciplinary nanotechnology research (one of the 8 top KAIST institutes) and other nano-related research groups were visited. A discussion with the Dean of External Relations and former Humboldt fellow at Erlangen University, Professor Yong-taek Im, revealed further interesting facts about the KAIST.

The next day, the delegation headed for the KIAS in Seoul, an institute built in strong analogy with the mother of all IAS in Princeton, where it was welcomed by the president, Professor Hyo Chul Myung, and the vice president, Professor Jaewan Kim. The president gave an introduction into



KIAS, an Institute for Advanced Study founded in 1996 under the support of the Korean government with a strong commitment for basic theoretical sciences in the fields of mathematics, physics and computational sciences. Next to research KIAS organizes numerous international conferences, workshops and lectures. Reminiscent of FRIAS, the KIAS has three types of scientists: research fellows, who are post-docs with own research grants appointed for a maximum of 5 years; faculty staff, who are professors from Korean universities; and KIAS scholars, who are visiting scientists (up to 3 months) resembling the FRIAS Soft Matter External fellow pool. The KIAS presentation was followed by a guided tour around the KIAS, where the FRIAS delegation had the chance to talk to some scientists at KIAS. The discussions were extended into a traditional Korean lunch at the faculty club where future formal agreements between the two institutes were discussed and where a reciprocating visit of a KIAS team to Freiburg was agreed upon.

TO COME

Black Forest Focus on Soft Matter I, July 8-11, 2009 at FRIAS

The School of Soft Matter Research will host its first international conference "Black Forest Focus on Soft Matter" on Computational Methods for Soft Matter and Biological Systems from July 8-11, 2009 at FRIAS.

This four day workshop will focus on recent advances in modeling and computer simulation of soft matter and biological systems. Several national and international leading experts on the structure formation with polymers, large-scale lattice Boltzmann simulations of soft matter nanoscale systems, the quantum dynamics of biomolecular systems and molecular electronics convene in Freiburg. About 50 participants are expected. Beyond scientific activities, an excursion leads to the picturesque town of Haigerloch with guided tour at the "Atomkeller" museum (site of the German nuclear reactor project during World War II).

Persons interested in attending the workshop should contact michael.thorwart@frias.uni-freiburg.de

(more Information: www.frias.uni-freiburg.de/bff)

SOFT MATTER SEMINARS:

15.06.2009 11:15h - **Dr. Stefan Schiller**

29.06.2009 11:15h - **Prof. Hans Briegel**

08.-11.07.2009 - **Workshop: Black Forest Focus on Soft Matter**

13.07.2009 11:15h - **Prof. Michael Krische**

(more Information: www.frias.uni-freiburg.de/matter_research/veranstaltungen)

NEW EXTERNAL SENIOR FELLOW

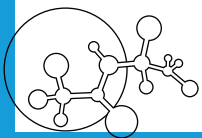


On May 1st, 2009 Professor Michael J. Krische from the Department of Chemistry and Biochemistry at the University of Texas, Austin/USA and Humboldt Research Awardee joined the FRIAS School of Soft Matter Research for two years.

In 1989, Professor Krische obtained a B.S. degree in Chemistry from the University of California at Berkeley/USA, where he performed research under the tutelage of Professor Henry Rapoport. After one year of study as a Fulbright Fellow at Helsinki University in Finland, he initiated graduate research at Stanford University under the mentorship of Professor Barry Trost as a Veatch Graduate Fellow. Following receipt of his PhD in 1996, he worked with Jean-Marie Lehn at the Université Louis Pasteur in Strasbourg/France as an NIH Post-Doctoral Fellow. In 1999, Michael Krische was appointed Assistant Professor at the University of Texas at Austin. He was promoted directly to Full Professor in 2004 and in 2007 he received the Robert A. Welch Chair in Science. During the last decade, Michael Krische received more than 15 awards and prizes for his work in the field of organic chemistry.

At FRIAS, Professor Krische will work on the hydrogenation in C-C-coupling reactions beyond alkene hydroformylation, simultaneously defining a departure from the use of preformed organometallic reagents in carbonyl addition.

(more Information: www.frias.uni-freiburg.de)



April 29, 2009: Inaugural Lecture Michael Thorwart

"Are there nontrivial quantum effects in biological systems?"



In a joint seminar of the Physical Institute and the FRIAS School of Soft Matter Junior Fellow and PD Michael Thorwart held his inaugural lecture as part of the FRIAS Dinner Speech series.

After an introduction into the basics of quantum mechanics

Thorwart presented his current work which focuses on the understanding of the interaction between quantum nanosystems with their environment.

In photosynthesis, chromophores, nanosized parts of larger macromolecules, absorb light and form an exciton as first step of light harvesting. These excitons are then transported via several intermediate chromophores to a reaction centre where the energy is stored by a chemical reaction. In biological systems this transport process is highly efficient meaning that rarely any exciton is lost during transport although the protein environment, in which the chromophores are embedded, very strongly disturbs the transport process.

Quantum mechanical tunnelling of the excitons from one chromophore to its nearest neighbour would speed up transport in order to avoid damping by the environment. Decoherence by environmental charge fluctuations however limit this process. Quantum coherence was found experimentally for exciton transport between the chromophores in the Fenna-Matthews-Olsen complex to last up to >

660 fs, far longer than expected. Thorwart showed that the peculiar details of protein environments, namely small bath cut-off frequency, result in non-markovian dynamics and allow for this elongated coherence times. He further showed that the protein environment allows at the same time rather long survival times of coherence and entanglement between longer chains of chromophores. It is currently a speculation that such entanglement is at the heart of the problem to understand the efficiency of photosynthesis. If positively answered our daily life would depend on quantum mechanics beyond its microscopic constituents.

The lecture closed with a lively discussion supported by snacks and drinks in the FRIAS lounge.

Faculty of Engineering at FRIAS

On Thursday, April 30th, the Dean's office of the Faculty of Engineering visited FRIAS. The youngest faculty at Freiburg University, formerly called the Faculty of Applied Sciences, or "the 11th Faculty", consists of the two departments, Computer Sciences and Microsystems Engineering, as well as a some associated professorships (Communication Systems, Telematics, Modeling and Social, Applied Physics, and Solar Energy).

The Faculty of Engineering collaborates with FRIAS principally with the School of Soft Matter Research. There are, however, strong ties to the School of Life Sciences.

The Dean's office, represented by the Dean Professor Hans Zappe and the Professors Bernd Becker, Wolfram Burgard and Jürgen Wilde, accepted the invitation from FRIAS Directors Werner Frick, Jan Korvink and Hermann Grabert to discuss further future interactions between the two institutions. In addition to the general FRIAS structure and the different School of Soft Matter research lines, fellow-selection procedures and laboratory assignments were reviewed.

PRIZES 2009

External Senior Fellow Masamitsu Wada received Midori Academic Prize



The Japanese Midori Academic Prize was established in 2007 with the aim of increasing awareness amongst the general public of the importance of greenery (jap. = "midori"). The award strives to recognize individuals who have

attained outstanding academic achievements in relation to green spaces through their research into plants, forests, landscaping, natural conservation and other areas, as well as the development of related technologies. The prize was awarded to Professor Wada, external senior fellow at the School of Life Sciences, by the Prime Minister in the presence of the Japanese Emperor and Empress at a ceremony held on April 24, 2009 at the Kensei Kinenkan (Parliamentary Museum) in Tokyo.

TO COME

First Interdisciplinary FRIAS Symposium "Evolution: Careers of a scientific paradigm", July 16 and 17, 2009

The four schools of the Freiburg Institute for Advanced Studies will jointly organise an international symposium on the topic "Evolution: Careers of a scientific paradigm" on July 16 and 17, 2009. The symposium is designed around the fact that 2009 is the bicentennial of Darwin's birth and the sesquicentennial of the publication of "The Origin of Species", but also incorporates issues from the humanities and cultural studies as well as the social and natural sciences. The conference is divided into five thematic sections and will feature an evening panel discussion and a moderated expert round to conclude the meeting.

Opening ceremony of the Center for Systems Biology and International Symposium

"SystemsBiology.Challenges.Society", June 17-19, 2009

As prelude to the first International Symposium on Systems Biology in Freiburg, the Center and the University of Freiburg invite to the ZBSA official opening ceremony on June 17, 2009. In a panel discussion chaired by Dr. Robert Lossau (senior-science editor, "Die Welt") high-ranking participants from science, politics and industry will debate on "Systems Biology.Challenges.Society".

The symposium, organised by ZBSA in cooperation with FRIAS School of Life Sciences, the Center for Biological Signalling Studies (bioss) and the Freiburg Initiative for Systems Biology (FRISYS), will then take place on June 18 and 19, 2009 in the Auditorium of the Institute of Biology II. The symposium addresses not only to scientists from the field of life sciences but also to experts from industry, telecommunications, information technology, logistics and medicine. With its interdisciplinary program comprising renowned speakers from biosciences, theoretical and computer sciences as well as from industry the symposium aims at establishing a sustainable transfer of knowledge and applications of biosystems research well beyond the discrete disciplines.



For further information about the program and registration details please visit:

www.zbsa.de/symposium

Life Sciences seminars

08.06.2009 11:15h - **Prof. Chuanyou Li**
22.06.2009 11:15h - **Prof. Knut Biber**

(more Information: www.frias.uni-freiburg.de/lifenet/veranstaltungen)



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