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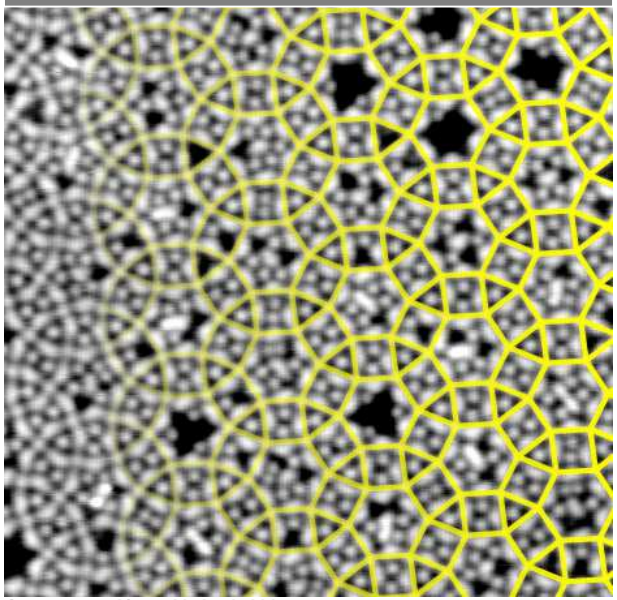
Karlsruhe Institute of Technology

Molecular Architectonics for Advanced Information Processing

German-Japanese Symposium

Institute of Nanotechnology,
Karlsruher Institute of Technology

14th March 2018
Karlsruhe • Germany



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Scope

Molecular Architectures are designed by state-of-the-art organic/inorganic synthesis and supramolecular self-assembly techniques to operate as functional quantum systems. To extract and to manipulate the quantum information of the molecular systems, their implementation and integration of into devices will be addressed.

Topics

- Molecular Self-Assembly
- Surface-Confined Coordination Chemistry
- Molecular Magnetism
- Hybrid Materials
- Nanoscaled Transport
- Surface Characterisation Techniques
- Scanning Tunneling Microscopy and Spectroscopy
- Theoretical Modelling

Invited Speakers

Johannes V. Barth (München)
Michio M. Matsushita (Nagoya)
Marcell Mayor (Basel)
Svetlana Klyatskaya (Karlsruhe)
Tadahiro Komeda (Sendai)
Senthil Kuppusamy (Strasbourg)
Eufemio Pineda Moreno (Karlsruhe)
Takuji Ogawa (Osaka)
Hiroshi Okuyama (Kyoto)
Mario Ruben (Karlsruhe/Strasbourg)
Hirokazu Tada (Osaka)
Noriaki Takagi (Tokyo)

Organisators

Prof. Tadahiro Komeda
Tohoku University, Sendai, Japan

Prof. Mario Ruben
Institute of Nanotechnology, Karlsruhe, Germany

Programme

7h45 Transfer from Hotel "Erbprinzenhof" to INT

8h30 **Coffee / Badges**

9h00 Welcome by Prof. Tadahiro Komeda, Tohoku University, Sendai, Japan and Prof. Mario Ruben, Institute of Nanotechnology, Karlsruhe, Germany

9h05 "*The Institute of Nanotechnology (INT) at the KIT*"
Horst Hahn
Director Institute of Nanotechnology, KIT

Chair: Matthias Hettler (INT)

9h15 "*Controlled switching of single-molecule junctions by mechanical motion of aphenyl ring*"
Hiroshi Okuyama, Kyoto University

9h45 *"Surface-confined molecular switches, hybrid systems and complex tesselations"*
Johannes V. Barth, TU Münich

10h15 "*Single molecule electronic properties of hetero metallo-porphyrin arrays*"
Takuji Ogawa, Graduate School of Science, Osaka University

10h45 *"E-field triggered single-molecule switches"*
Marcel Mayor, University of Basel

11h15 "*Magnetoresistance of organic materials: from single crystals to single molecules*"
Hirokazu Tada, Graduate School of Engineering Science, Osaka University

11h45 *"Synthesis of 2 D Graphdiynes and hybrid functional materials"*
Svetlana Klyatskaya, INT

12h15-13h15 **Lunch**

Chair: Svetlana Klyatskaya (INT)

13h15 "*Magnetoresistance caused by spins in organic radical molecules*"
Michio M. Matsushita, Department of Chemistry, Graduate School of Science, Nagoya University

13h45 *"Hybrid spin crossover materials"*
Senthil Kuppusamy, University Strasbourg

14h15 "*Quantum transition in a single molecule by STM manipulation*"
Noriaki Takagi, Department of Advanced Materials Science, The University of Tokyo

14h45 *"Engineering of the quantum properties of molecular spin-qudits"*
Eufemio Pineda, INT

15h15 "*Spin property of single molecule magnet detected by STM*"
Tadahiro Komeda, IMRAM, Tohoku University

15h45 *"Implementation of Grover´s quantum search algorithm in a $TbPc_2$ Qudit"*
Mario Ruben, INT/ University of Strasbourg

16h15 **Visit of the Institute**

17h00 Transfer to Hotel "Erbprinzenhof"

18h30 Dinner "Eigenart "
https://eigenart-karlsruhe.de/

21h00 Return walk to Hotel