

## PROGRAMME

### Monday, Sept. 6<sup>th</sup>, 2010

#### Welcome

10:00 Prof. Dr. Jun Okuda,  
Spokesperson SeleCa, RWTH Aachen

10:05 Prof. Dr. Ernst Schmachtenberg,  
Rector, RWTH Aachen

10:15 Representatives of JSPS and DFG

#### Chair: Prof. Dr. Jun Okuda

10:30 Prof. Dr. Manfred Reetz,  
MPI for Coal Research, Mülheim a.d. Ruhr:  
Laboratory Evolution of Stereoselective Enzymes, A  
Prolific Source of Catalysts for Asymmetric Reactions

11:30 Prof. Dr. Richard R. Schrock,  
MIT Cambridge, USA:  
The Third Generation: Thousands of New Catalysts  
for Olefin Metathesis

12.30 Lunch Break 14:00

#### Chair: Prof. Dr. Lothar Elling

14:00 Prof. Dr. Hisao Ohtake, Osaka:  
New Bio-Based Production Platforms for White  
Biotechnology in Japan

14:40 Prof. Dr. Anett Kirschner, Aachen  
Selective Substrate Oxidation with Oxygen:  
Biocatalytic Potential of Bacterial Monooxygenases

15:00 Prof. Dr. Shigenori Kanaya, Osaka  
Structure-Based Functional Studies of a Family I.3  
Lipase

15:20 Prof. Dr. Nakako Shibagaki, Osaka  
Genetic Engineering of *Jatropha curcas* L. for  
Improvement of Drought Resistance

15:40 Prof. Dr. Ulrich Schwaneberg, Aachen  
Protein Engineering by Directed Evolution: Concepts,  
Experimental Implementation, Challenges, and  
Success Stories

16.00 Coffee Break 16:30

#### Chair: Prof. Dr. Kazushi Mashima

16:30 Prof. Dr. Walter Leitner, Aachen  
Selective Functionalization and De-  
Functionalization of Challenging Substrates

16:50 Prof. Dr. Naoto Chatani, Osaka  
Catalytic Reactions Involving Activation of  
Unreactive Bonds

17:10 Prof. Dr. Nobuaki Kambe, Osaka  
Synthetic Reactions via Transition Metal Ate  
Complex Intermediates

17:30 Prof. Dr. Masahiro Miura, Osaka  
Copper- or Nickel-Catalyzed Direct Coupling of  
Heteroarenes

17:50 Prof. Dr. Dieter Enders, Aachen  
Organocatalytic Domino Reactions

### Tuesday, Sept. 7<sup>th</sup>, 2010

#### Chair: Prof. Dr. Ulrich Schwaneberg

09:00 Prof. Dr. Takashi Hayashi, Osaka  
Enhancement of Enzymatic Activities of  
Myoglobin and Horseradish Peroxidase by  
Heme-Substitution Methods

09:20 Prof. Dr. Lothar Elling, Claudia Kamerke, M.Sc.  
Aachen  
Microwave-Assisted Biocatalysis Employing  
Glycosidases

09:40 Prof. Dr. Jörg Pietruszka, Jülich  
Key Building Blocks via Enzyme-mediated  
Synthesis

10:00 Prof. Dr. Mitsuru Akashi, Osaka  
Development of Three-dimensional Layered  
Tissues by Layer-by-Layer Technique

10:20 Coffee Break 10:50

#### Chair: Prof. Dr. Dieter Enders

10:50 Prof. Dr. Yoshito Tobe, Osaka  
Control and Dynamics of Two-Dimensional Self-Assembly  
of Triangular Molecules on Surfaces via Alkyl Chain  
Interdigitation

11:10 Prof. Dr. Iris Oppel, Aachen  
Nano Puzzle – Supramolecular Coordination Chemistry

11:30 Prof. Dr. Hiroaki Sasai, Osaka  
Novel Catalytic Enantioselective Reactions Promoted by a  
Pd-SPRIX Complex

11:50 Prof. Dr. Markus Albrecht, Aachen  
Metallosupramolecular M<sub>4</sub>L<sub>4</sub> Tetrahedra

12.10 Prof. Dr. Kazushi Mashima, Osaka  
New Synthetic Method for Generating Low-valent Early  
Transition Metals: Tantalum Catalyst System for Highly  
Selective Trimerization of Ethylene

#### Closing Remarks

12.30 Prof. Dr. Hisao Ohtake, Osaka

#### Lunch

## TRAVEL

### With public transport

By train: to Aachen (further information: [www.bahn.de](http://www.bahn.de)). From Aachen station it takes approximately 10 min by taxi or by bus No 13b, direction Ponttor, exit at Technische Hochschule.

### By car

From North (Düsseldorf) and South (Liege) A 44. Change to A4 at ‚Autobahnkreuz‘ Aachen.

From West (Antwerp) and East (Cologne) A4. Leave A4 at AC-Laurensberg, follow signs to ‚City Center‘. Turn right at Ponttor (large stone gate) into Turmstraße. Turn right into Prof. Pirlet Str. Leave your car in the University Parking Center.

Walk back on Turmstraße crossing the railway line and at the Audimax take first road on the right (Wüllnerstr.) At the traffic light, turn right into Templergraben. The Super C (see photo) is at the corner.

## FURTHER INFORMATION

### Venue

RWTH Aachen, Super C, 6th floor  
Templergraben 57, 52062 Aachen, Germany

### Accommodation

We suggest the following hotels:

Mercure Hotel Aachen am Dom,  
<http://www.mercure.com/de/hotel-5326-mercure-hotel-aachen-am-dom/index.shtml>

Aquis Grana, <http://www.hotel-aquis-grana.de>

Please mention RWTH for booking at a reduced price.

### Language

The symposium will be held in English.

### Registration

Please complete and return the enclosed form or contact:

Prof. Dr. A. Salzer

Institute for Inorganic Chemistry

Landoltweg 1

D - 52074 Aachen, Germany

Phone: +49 241 8094646

Fax: +49 241 8092644

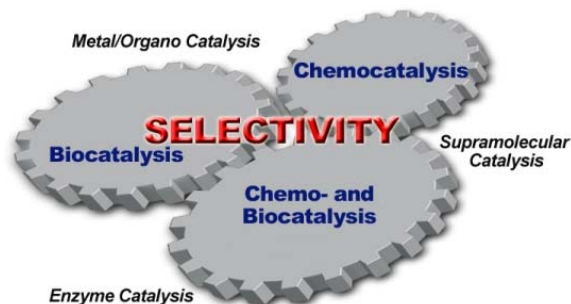
e-mail: [info-seleca@rwth-aachen.de](mailto:info-seleca@rwth-aachen.de)

Internet: <http://www.seleca.rwth-aachen.de>

## SELECTIVITY IN CHEMO- AND BIOCATALYSIS

Rapidly changing global conditions and the imminent depletion of fossil feedstock require substantially improved catalysts for selective transformations to ensure sustainable production of chemicals in the future. The International Research Training Program „Selectivity in Chemo- and Biocatalysis“ ([www.seleca.rwth-aachen.de](http://www.seleca.rwth-aachen.de)) aims at understanding efficient and selective catalytic processes on a molecular level. In an interdisciplinary approach, aspects of chemocatalysis and biocatalysis are combined to synthesize highly functionalized molecules selectively.

Nine groups of RWTH Aachen University, one associated group from the Research Center Jülich together with nine groups of Osaka University cooperate to offer an educational platform for selected graduate students. The educational platform is complemented by a practical training in an interdisciplinary research program towards new chemo- and biocatalytic transformations. The transnational exchange of graduate students between two completely different cultural and societal backgrounds rests on solid foundations based on longstanding scientific and personal cooperations.



The organizers wish to thank the following sponsors:

JSPS DFG

## International Research Training Group

### „Selectivity in Chemo- and Biocatalysis“

### 3<sup>rd</sup> Aachen-Osaka Joint Symposium



## Biological and Chemical Approaches To Selective Processes



RWTH Aachen, Sept. 6th and 7th, 2010  
Super C, Templergraben 57  
Aachen, Germany