

# Program of the 4th Swiss-German-Japanese Workshop on Biocatalysis and Bioprocess Development in Greifswald, Germany

Venue:

University Main Building at University of Greifswald  
Domstraße 11, 17489 Greifswald, Germany

**Wednesday – June 25<sup>th</sup>, 2025**

**Aula**

## **Session 1**

16:00    Opening remarks **Chair: U. Bornscheuer**

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16:15    **Keynote Lecture**

**Haruyuki Atomi, Kyoto University, Japan**

*UNIQUE ENZYMES INVOLVED IN AMINO ACID CONVERSION IN HYPERTHERMOILIC  
ARCHAEA*

16:45    **Peter Neubauer, Technical University of Berlin, Germany**

*ADVANCING BIOPROCESSING AND BIOCATALYSIS WITH SELF-DRIVING LABS:  
FROM MODEL-BASED DESIGN TO DEEP PROCESS INSIGHT*

17:00    **Kathrin Castiglione, Friedrich-Alexander University of Erlangen-Nuremberg,  
Germany**

*EFFICIENT RECOMBINANT PRODUCTION OF A PET-DEPOLYMERIZING CUTINASE  
AND ITS IMMOBILIZATION USING STIMULUS-RESPONSIVE POLYMERS*

17:15    **Ren Wei, University of Greifswald, Germany**

*DISCOVERY AND ENGINEERING OF NOVEL POLYURETHANE HYDROLASES*

17:30    **Michael Richter, Fraunhofer Institute for Interfacial Engineering and  
Biotechnology, Germany**

*PROTEINS - A VALUABLE PLATFORM RESOURCE FOR BIOCATALYTIC TAILORING  
TOWARDS SPECIALTY CHEMICALS*

17:45    **Jan Marienhagen, Research Center Jülich, Germany**

*DEVELOPMENT OF BIOSENSORS FOR THE INTRACELLULAR DETECTION OF  
PHENOLIC COMPOUNDS AND THEIR APPLICATION USING FLUORESCENCE-  
ACTIVATED CELL SORTING*

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18:00    **Welcome Reception @ ship MS Stubnitz**

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Start at Museumshafen, Greifswald

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**Thursday – June 26<sup>th</sup>, 2025**

**Konferenzraum**

9:00      **Optional Excursion** to Dom St. Nikolai, per pedes  
Domstraße 54, 17489 Greifswald  
(gothic church from the 12<sup>th</sup> century)

**Session 2**

**Chair: Jun Ogawa**

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| 10:30 | <b>Keynote Lecture</b><br><b>Vlada Urlacher, Heinrich Heine University Düsseldorf, Germany</b><br><i>LATE-STAGE OXYFUNCTIONALIZATION WITH CYTOCHROMES P450</i>                                  |
| 11:00 | <b>David Schönauer - Aminoverse B.V., Netherlands</b><br><i>BENCHMARKING A NOVEL AI PLATFORM AGAINST IN SILICO DESIGNS</i>  |
| 11:15 | <b>Natsuko Miura, Osaka Metropolitan University, Japan</b><br><i>DESIGNER ENZYME CONDENSATES FOR TUNABLE BIOCATALYSIS</i>   |
| 11:30 | <b>Robert Kourist, Graz University of Technology, Austria</b><br><i>ENZYME ENGINEERING OF A MEMBRANE-BOUND MONOOXYGENASE AS KEY STEP OF AN ARTIFICIAL METABOLIC PATHWAY TOWARDS TULIPALIN A</i> |
| 11:45 | <b>Michiki Takeuchi, Kyoto Institute of Technology, Japan</b><br><i>ELECTROCHEMICAL ANALYSIS OF MICROBIAL INDIGO-REDUCTION</i>  |
| 12:00 | <b>Gladwin Suryatin Alim, University of Basel, Switzerland</b><br><i>MOLYBDOENZYME MEDIATES CARBON-SULFUR BOND MAKING AND BREAKING IN ERGOTHIONEINE BIOSYNTHESIS</i>                            |
| 12:15 | <b>Ryotaro Hara, Kyoto University, Japan</b><br><i>SCREENING OF MICROBIAL ENZYMES FOR THE PRODUCTION PROCESS OF NATURAL AND NON-NATURAL S-SUBSTITUTED CYSTEINE SULFOXIDES</i>                   |
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**12:30      Lunch**

**Session 3**

**Chair: Selin Kara**

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| 13:30 | <b>Erik de Vries, BRAIN Biotech AG, Germany</b><br><i>METXTRA DNA DATABASE – DEVELOPING A BUSINESS MODEL</i>   |
| 13:45 | <b>Ken'ichiro Matsumoto, Hokkaido University, Japan</b><br><i>NON-TEMPLATE-DEPENDENT BIOSYNTHESIS OF BLOCK COPOLYESTERS</i>                              |
| 14:00 | <b>Volker Wendisch, CeBiTec Bielefeld, Germany</b><br><i>EXTENSION OF AROMATIC METABOLISM FOR SUSTAINABLE FERMENTATION BY CORYNEBACTERIUM GLUTAMICUM</i> |
| 14:15 | <b>Takaaki Sato, Kyoto University, Japan</b><br><i>IDENTIFICATION OF LIPOATE BIOSYNTHESIS SYSTEM IN HYPERTHERMOPHILIC ARCHAEA</i>                        |
| 14:30 | <b>Tobias Heinks, TU Delft, The Netherlands</b><br><i>USING TRANSAMINASES AS DEHALOGENASES?</i>  |
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| 14:45  | <b>Nina Barua, Kyoto University, Japan</b> | <b>Japanese Students Session</b> |
| <i>FERMENTATION PRODUCTION OF EICOSAPENTAENOIC ACID (EPA)-RICH OIL AT ORDINARY TEMPERATURES THROUGH MOLECULAR BREEDING OF THE OLEAGINOUS FUNGUS MORTIERELLA ALPINA</i> |  |                                  |

- 14:55 **Htun Inzali, Kyoto University, Japan**  
*ISOLATION OF NITRIFYING BACTERIA AND CONSTRUCTION OF A SIMPLIFIED SYNTHETIC NITRIFYING MICROBIAL ECOSYSTEM*
- 15:05 **Taito Tsukimata, Kyoto University, Japan**  
*STUDIES ON RED PROTEINS PRODUCED BY HALOMONAS SP. KM-1*
- 15:15 **Hideaki Satani, Kyoto University, Japan**  
*MICROORGANISM SCREENING FOR EFFICIENT SPHINGOLIPIDS PRODUCTION*
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**15:25 Coffee Break (35 min)**

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**Session 4**

**Chair: Haruyuki Atomi**

- 16:00 **Kazunori Yoshida, Amano Enzyme Inc., Japan**  
*ENGINEERING OF INNOVATIVE PROTEIN-GLUTAMINASE FOR PLANT-BASED FOOD APPLICATION*
- 16:15 **Philipp Süss, Enzymicals AG, Germany**  
*INDUSTRIAL BIOCATALYSIS - FROM MG TO TON SCALE*
- 16:30 **Rolf Schmid, Bio4Business, Germany**  
*'NET ZERO' EMISSIONS FROM EUROPE'S CHEMICAL INDUSTRY - STATUS AND PERSPECTIVES*
- 16:45 **Daniel Ohde, Hamburg University of Technology, Germany**  
*REACTION ENGINEERING OF AN ENZYME CASCADE FOR SYNTHESIS OF UDP-GlcNAc*
- 17:00 **Jun Ogawa, Kyoto University, Japan**  
*BIOCHEMICAL STUDIES ON GUT MICROBIAL DIETARY COMPONENT METABOLISMS AND ITS APPLICATION TO HEALTH PROMOTION*
- 17:15 **Johannes Kabisch, NTNU Norwegian University of Science and Technology, Norway**  
*BACTERIAL SPORES AS AN AMYLOID PRODUCTION PLATFORM*
- 17:30 **Ryota Kumokita, KANEKA Corporation, Japan**  
*KANEKA BIODEGRADABLE POLYMER GREEN PLANET™: BIODEGRADABLE PHBH AS CONVENTIONAL PLASTIC ALTERNATIVE*
- 17:45 **Joerg Pietruszka, Heinrich-Heine-University Düsseldorf, Germany**  
*TRANSFERASES IN THE SYNTHESIS OF PYRROLOINDOLES*
- 18:00 **Guiyeoul Lim, RWTH Aachen University, Germany**  
*INTEGRATED ELECTRO-BIOCATALYSIS FOR CHEMICAL PRODUCTION IN FLOW SYSTEMS*
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18:30 **Workshop photo**

**19:00 Banquet Brasserie Hermann**  
<https://www.brasseriehermann.de/>  
Gützkower Straße 1, 17489 Greifswald, Germany

**Friday - June 27<sup>th</sup>, 2024****Konferenzraum****Session 5****Chair: Jan von Langermann**

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- 9:00     **Hans Iding, Roche, Switzerland**  
ENGINEERED (S)-TRANSAMINASE APPLIED IN AN ORGANIC SOLVENT
- 9:15     **Yasuhisa Asano, Toyama Prefectural University, Japan**  
TOTAL SYNTHESIS OF THREE PHARMACEUTICALS - UTILIZATION OF  
INTERMEDIATES OBTAINED BY HYDROXYNITRILE LYASE
- 9:30     **Marc Nowaczyk, University of Rostock, Germany**  
PHOTOSYSTEM I-DRIVEN IN VITRO BIOCATALYSIS
- 9:45     **Carolyn Mücke, Ruhr University Bochum, Germany**  
CYTOCHROME P450 FUSION CONSTRUCTS IN OXYFUNCTIONALIZATION  
REACTIONS
- 10:00    **Kohsuke Honda, The University of Osaka, Japan**  
IN VITRO RECONSTITUTION OF NON-OXIDATIVE GLYCOLYSIS USING  
THERMOPHILIC ENZYMES AND ITS APPLICATIONS TO COFACTOR REGENERATION  
AND SYNTHESIS
- 10:15    **Martin J. Weissenborn, Martin-Luther-Universität Halle-Wittenberg, Halle,  
Germany**  
EVOLVING AND DESIGNING SELECTIVE PEROXYGENASES
- 10:30    **Sarah Westarp, Technical University of Berlin, Germany**  
BIOCATALYTIC SYNTHESIS OF NUCLEOSIDE AND NUCLEOTIDE ANALOGUES
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**10:45     Coffee Break (30 min)****Session 6****Chair: Robert Kourist**

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- 11:15    **Stefan Lutz, Codexis, USA**  
REVOLUTIONIZING RNAI THERAPEUTICS MANUFACTURING WITH ENZYMES
- 11:30    **Christopher Grimm, Leibniz University Hannover, Germany**  
OXIDATION OF SESQUITERPENES BY UNSPECIFIC PEROXYGENASES
- 11:45    **Ayako Yoshida, University of Tokyo, Japan**  
STRUCTURAL INSIGHT INTO ASSEMBLY OF LYSINE BIOSYNTHETIC ENZYMES  
MEDIATED BY AMINO-GROUP CARRIER PROTEIN
- 12:00    **Veronika Hahn, Leibniz Institute for Plasma Science and Technology (INP),  
Germany**  
LACCASE AND PLASMA – OLD AND NEW TOOLS FOR THE SYNTHESIS OF ORGANIC  
SUBSTANCES
- 12:15    **Hiroya Tomita, The University of Osaka, Japan**  
BIOSYNTHESIS OF A THIAZOLE-RICH PEPTIDE IN THERMOPHILE
- 12:30    **Mark Doerr, University of Greifswald, Germany**  
STANDARDISATION AND SEMANTIC INFRASTRUCTURE FOR BIOCATALYST  
DEVELOPMENT WITH LARA
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**12:45     Departure, e.g. for Basel (Biotrans)**

13:30-    *Optional historic tour of*  
14:30    *University of Greifswald*