Novel Enzymes 2025, March 25-28 2025, Budapest Hungary

Programme schedule

Tuesday, 25th March

15:00-18:00	*Registration*
18:00-18:20	*Opening ceremony*
18:20-19:00	*Plenary lecture 1* ***Bornscheuer, Uwe T.*** University of Greifswald, GERMANY *Discovering and engineering of novel enzymes for the depolymerization of polyurethanes*
19:00-19:30	*Keynote lecture 1* ***Perczel, András*** Eötvös L. University, HUNGARY *Drug-drug interactions and ligand binding promiscuity in serine proteases revealed by the first Cryo-EM structures of mammalian acylaminoacyl peptidase*
19:30-20:30	*Welcome Party*

Wednesday, 26th March

9:00-9:10	*Technical information*
9:10-10:40	**Session 1 – From screening to metalloenzymes** *(Chair: Prof. Roland Wohlgemuth)*
9:10-9:40	*Keynote lecture 2* ***Hollfelder, Florian*** University of Cambridge, UNITED KINGDOM *How do we find new functional proteins in sequence space?*
9:40-10:40	*Oral presentations*
9:40-10:00	***O1 - Potocki-Veronese, Gabrielle*** Toulouse Biotechnology Institute INSAT INRAE, FRANCE *Unlocking the opportunities of microbiomics for the discovery of carbohydrate-active enzymes*
10:00-10:20	***O2 - Schallmey, Anett*** Technische Universität Braunschweig, GERMANY *Novel halohydrin dehalogenases carrying variations in HHDH-specific sequence motifs*

10:20-10:40	***O3 - Wang, Yane-Shih*** Academia Sinica Life Science Institute of Biological Chemistry, TAIWAN *Site-specific histidine aza-Michael addition in proteins enabled by a ferritin-based metalloenzyme*
10:40-11:00	*Coffee Break*
11:00-12:40	**Session 2 – Biosynthesis and biosystems** *(Chair: Prof. Jennifer Littlechild)*
11:00-12:40	*Oral presentations*
11:00-11:20	***O4 - Lei, Xiaoguang*** Peking University, CHINA *Opportunities for merging chemical and biological synthesis*
11:20-11:40	***O5 - Pietruszka, Jörg*** Heinrich-Heine-Universität Düsseldorf, GERMANY *Prenyltransferases in the synthesis of pyrroloindoles*
11:40-12:00	***O6 - Granit, Pauline*** KTH Royal Institute of Technology, SWEDEN *Metal promiscuity in present-day and ancestral terpene cyclases*
12:00-12:20	***O7 - Cuesta Hoyos, Sebastian A.*** University of Manchester/ Manchester Institute of Biotechnology, UNITED KINGDOM *Deciphering the biosynthesis of peptides with β-lactone warheads: enzymatic assembly and mechanistic insights*
12:20-12:40	***O8 - Möller, Christina*** University of Greifswald, GERMANY *Creation of universal blood for ABO blood group independent transfusion*
12:40-13:40	*Lunch*
13:40-15:30	*Poster Session*
15:30-15:50	*Coffee Break*
15:50-18:00	**Session 3 – Identification of novel enzymes** *(Chair: Prof. Melanie Hall)*
15:50-16:20	*Keynote lecture 3* ***Tasnádi, Gábor*** Servier Research Institute of Medicinal Chemistry, HUNGARY *From "off-the-shelf" enzymes to cell-free engineering*

16:20-18:00	*Oral presentations*
16:20-16:40	***O9 - Bayer, Thomas*** University of Greifswald, GERMANY *Identification and engineering of promiscuous amidases for multipurpose applications*
16:40-17:00	***O10 - Beatty, Meagan*** Toulouse Biotechnology Institute Catalysis and Enzyme Molecular Engineering INSA, FRANCE *A deep dive into the underexplored marine halophilic viral glycoside hydrolase guided by sequence-based metaviromics*
17:00-17:20	***O11 - Teune, Michelle*** University of Greifswald, GERMANY *Carbohydrate esterases of family CE20 operate via an undescribed diluted catalytic triad*
17:20-17:40	***O12 - Incze, Dániel J.*** Budapest University of Technology and Economics, HUNGARY *Understanding the molecular mechanism of fumonisin esterases by kinetic and structural studies*
17:40-18:00	***O13 – Maršavelski, Aleksandra*** University of Zagreb, CROATIA *Discovery and engineering of thermostable metagenomic esterases for polyester depolymerization*
20:00-21:00	*Concert at St. Stephen's Basilica*

Thursday, 27th March	
9:00-10:40	**Session 4 – De novo enzymes and directed evolution** *(Chair: Prof. Uwe Bornscheuer)*
9:00-9:40	*Plenary lecture 2* ***Hilvert, Donald*** ETH Zurich, SWITZERLAND *Designing enzymes de novo*
9:40-10:40	*Oral presentations*
9:40-10:00	***O14 - Mayer, Clemens*** University of Groningen, NETHERLANDS *A continuous evolution platform to make defluorinases fit for PFAS degradation*

10:00-10:20	***O15 - Hidalgo, Aurelio*** Universidad Autonoma de Madrid, SPAIN *Reproducing the central dogma of molecular biology at the single-molecule level for ultrahigh-throughput library screening*
10:20-10:40	***O16 - Weissensteiner, Florian*** University of Graz, AUSTRIA *Directed evolution of a photodecarboxylase for new-to-nature C-C bond formations*
10:40-11:00	*Coffee Break*
11:00-12:40	**Session 5 – From computation to applications** *(Chair: Prof. Xiaoguang Lei)*
11:00-12:40	*Oral presentations*
11:00-11:20	**O17 - Debruyne, Romain** Université Libre de Bruxelle BELGIUM *Computational insights into enzyme stability-activity trade-off*
11:20-11:40	***O18 - Hermans, Pauline*** Université Libre de Bruxelles, BELGIUM *Predicting enzyme fitness by combining structural and (co)evolutionary methods*
11:40-12:00	***O19 - Londi, Giacomo*** University of Pisa, ITALY *Protein-driven electron-transfer process in a fatty acid photodecarboxylase*
12:00-12:20	***O20 - Rigkos, Konstantinos*** BSRC "Alexander Fleming" Institute for Bioinnovation (IBI), GREECE *An Extremozyme tailored for decarbonization: CA-KR1, an inherently ultra-stable carbonic anhydrase for biomimetic CO2 capture*
12:20-12:40	***O21 - Oroz-Guinea, Isabel*** University of Graz, AUSTRIA *Biocatalytic sulfation of aromatic and aliphatic alcohols catalyzed by arylsulfate sulfotransferases*
12:40-13:40	*Lunch*

13:40-15:30	**Session 6 – Enzymatic bioprocesses** *(Chair: Prof. Tom Desmet)*
13:40-14:10	*Keynote lecture 4* ***Martins, Ligia O*** Universidade Nova de Lisboa, PORTUGAL *Engineering bacterial oxidoreductases for enzymatic bioprocesses targeting lignocellulose components*
14:10-15:30	*Oral presentations*
14:10-14:30	***O22 - Góra, Artur*** Silesian University of Technology, POLAND *Discovery and rational design of hydrolases for polyurethane degradation*
14:30-14:50	***O23 - Moellebjerg, Andreas*** Aarhus University, DENMARK *Hunting for plastic-degrading enzymes using fluorescence-assisted cell sorting*
14:50-15:10	***O24 - Zickler, Emil*** Martin-Luther-Universität Halle-Wittenberg, GERMANY *Selective rubber breakdown via engineered rubber oxygenase enzymes*
15:10-15:30	***O25 - Catucci, Gianluca*** University of Turin, ITALY *Discovery and characterization of a novel bacterial lignin-degrading dye-decolorizing peroxidase*
15:40-16:00	*Coffee Break*
16:00-17:50	**Session 7 – Novel enzymes for syntheses** *(Chair: Dr. Gábor Tasnádi)*
16:00-16:30	*Keynote lecture 5* ***Hall, Mélanie*** University of Graz, AUSTRIA *Biocatalytic hydronitration of α,β-unsaturated carboxylic acids: Scope and challenges*
16:30-17:50	*Oral presentations*
16:30-16:50	***O26 - Lanza, Lucrezia*** University of Freiburg, GERMANY *A novel thiamine diphosphate-dependent lyase with an unusual cofactor-binding motif for the synthesis of tertiary alcohols*

16:50-17:10	***O27 - Conte, Melissa*** TU Darmstadt, GERMANY *Structural and functional insights to novel sialic acid synthases for biocatalysis*
17:10-17:30	***O28 - Mohit*** University of Hyderabad, INDIA *Engineering hydroxynitrile lyases for the sustainable biocatalytic synthesis of chiral cyanohydrins*
17:30-17:50	***O29 - Gal, Lilla*** University of Graz, AUSTRIA *Expanding the substrate scope of acyltransferases in C-C bond formation reactions*
18:00-21:00	*Farewell Party*

Friday, 28th March	
9:40-12:20	**Session 8 – Novel enzymes towards applications** *(Chair: Prof. Wolf-Dieter Fessner)*
9:40-10:20	*Plenary lecture 3* ***Bommarius, Andreas*** Georgia Institute of Technology, UNITED STATES *Towards new enzymes with new design criteria*
10:20-10:40	Oral presentations ***O30 - Schönauer, David*** Aminoverse B.V., NETHERLANDS *Contribution of AI into enzyme engineering – AI-evolved enzymes for low-sugar foods*
10:40-11:00	*Coffee Break*
11:00-12:20	*Oral presentations continued* *(Chair: Dr. Zsófia Molnár)*
11:00-11:20	***O31 - Joosten, Henk-Jan*** Bio-Prodict, NETHERLANDS *3DM engineering; Combining 3DM protein family platforms and ai disrupts protein engineering*
11:20-11:40	***O32 - Godehard, Simon P.*** BRAIN Biotech AG, GERMANY *Leveraging the unexplored sequence space for industrial enzyme solutions*

11:40-12:00	***O33 - Antonopoulou, Io*** Luleå University of Technology, SWEDEN *Carbonic anhydrase as promoted in Carbon Capture: Discovery of ultrastable enzymes, screening, characterization and application*
12:00-12:20	***O34 - Ferrer, Manuel*** Institute of Catalysis – CSIC, SPAIN *Innovative strategies for discovering rare mycotoxin degrading enzymes to enhance food and feed safety*
12:20-12:40	*Closing Ceremony*
12:40-13:40	*Light lunch*