

The 3rd LPMO symposium

9-11 November 2022, Oslo, Norway



Wednesday 9. November

Updated November 7, 2022

10:30 Registration (10:30-12:30)

12:30 Lunch

13:30 **Session 1: biomass conversion and virulence.** Chair: Vincent Eijsink
Welcome by Gustav Vaaje-Kolstad

13:40 Lytic pectin monooxygenases as key virulence factors in plant pathogenic oomycetes.
Federico Sabbadin (University of York, UK). Invited speaker.

14:20 A biological role for LPMOs at the plant:pathogen interface. Are they friends or foes, for whom?
David Cannella (Universite libre de Bruxelles, Belgium)

14:50 Role of the AA9 Cel1 and its role in *Cryptococcus neoformans* growth and virulence.
Magnus Hallas-Møller (University of Copenhagen, Denmark)

15:20 Coffee break

15:50 Copper-dependent AA16 oxidoreductases boost cellulose active AA9 lytic polysaccharide monooxygenases from *Myceliophthora thermophila*.
Peicheng Sun (Wageningen University & Research, The Netherlands)

16:20 Inhibition of lytic polysaccharide monooxygenases by natural plant extracts.
Radina Tokin (University of Copenhagen, Denmark)

16:50 Poster session (odd numbered posters)

18:00 Free time

19:30 Dinner

Thursday 10. November

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07:00	Breakfast
	Session 2: LPMO structure, spectroscopy and chemical catalysis. Chair: Morten Sørli & Paul Walton
09:00	Advanced spectroscopic studies of copper-containing metalloproteins: Recent applications to pMMOs and LPMOs. <i>Serena DeBeer</i> (Max Planck Institute for Chemical Energy Conversion, Mülheim an der Ruhr, Germany). Invited speaker.
09:40	Decoding LPMO structures by theoretical EPR spectroscopy. <i>Maylis Orio</i> (Aix-Marseille Université/CNRS, France)
10:10	Bis(benzimidazole)amine/phenol-based N ₃ O-Cu systems as model systems of tyrosine-containing LPMO active sites. <i>Ivan Castillo</i> (Universidad Nacional Autónoma de México, Mexico)
10:40	Coffee break
11:10	Capture of activated dioxygen intermediates at the copper-active site of a lytic polysaccharide monooxygenase. <i>Gabriela Schröder</i> (North Carolina State University USA/ University of the Free State, South Africa)
11:40	Pushing the limits of LPMO crystallography. <i>Leila Lo Leggio</i> (University of Copenhagen)
12:10	Don't forget the tail: in-silico and experimental evidence of intrinsically disordered regions in lytic polysaccharide monooxygenases. <i>Ketty Concetta Tamburrini</i> (Aix Marseille University/INRAE/CNRS, France)
12:40	Lunch
	Session 3: LPMO enzymology and mechanism. Chair: Jean-Guy Berrin & Katja Salomon Johansen
13:40	How do we harness the oxidative power of LPMOs? <i>Katja Salomon Johansen</i> (University of Copenhagen). Invited speaker.
14:20	Electrochemical sensors to measure LPMO activity on natural substrates. <i>Roland Ludwig</i> (University of Natural Resources and Life Sciences, Vienna, Austria)
14:50	QM/MM and DFT calculations of the reaction mechanism of AA9 Lytic Polysaccharide Monooxygenases <i>Paul Walton</i> (University of York, UK)
15:20	Coffee break
15:50	Kinetics of H ₂ O ₂ -driven catalysis by LPMOs: implications of enzyme inactivation. <i>Priit Väljamäe</i> (Tartu University, Estonia). Invited speaker.
16:30	The effects of reductants and free copper ions on catalytic efficiency and enzyme stability in LPMO reactions. <i>Anton Stepnov</i> (Norwegian University of Life Sciences, Norway)
17:00	Elucidating the impact of second sphere residues on copper-site reactivity in LPMOs. <i>Kelsi Hall</i> (Norwegian University of Life Sciences, Norway)
17:30	Poster session (even numbered posters)
18:30	Free time
19:30	Dinner

Friday 11. November

Updated November 7, 2022

07:00	Breakfast
	Session 4: LPMO enzymology, diversity and application. Chairs: Svein Horn, Aniko Varnai and Mirjam Kabel.
09:00	AA9 LPMO diversity, insights from sophisticated product profiling, and possible interplay with lignin. <i>Mirjam Kabel</i> (Wageningen University & Research, The Netherlands). Invited speaker.
09:40	Xylan debranching plays a key role on the xylan degrading activity of AA9 LPMOs. <i>Monika Tölgo</i> (Chalmers University of Technology, Sweden)
10:10	Insights into the activity of a dual cellulolytic/xylanolytic AA9 LPMO on xylan and its role in nanocellulose production in an enzymatic bioprocess. <i>Koar Choroizian</i> (National Technical University of Athens, Greece)
10:40	Coffee break
11:10	Surface-to-core characterization of enzymatically treated cellulosic fibres. <i>Irina Sulaeva</i> (University of Natural Resources and Life Sciences, Vienna, Austria)
11:40	Enzymatic oxidation of cellulosic fibres for improved solubility and fibrillation. <i>Kaisa Marjamaa</i> (VTT Technical Research Centre of Finland)
12:10	Hydrogen peroxide feeding for LPMO-assisted cellulose saccharification using cellulase cocktails. <i>Svein Horn</i> (Norwegian University of Life Sciences, Norway)
12:40	Lunch
13:40	Light activation of <i>T. thermophilus</i> LPMOs 9A and 9H, synergy with cellulases and application for cellulose nanofibers production. <i>Igor Polikarpov</i> (University of São Paulo, Brasil)
14:10	Natural photoredox catalysts promote light-driven LPMO activity and enzymatic turnover of biomass. <i>Eirik Kommedal</i> (Norwegian University of Life Sciences, Norway)
14:40	Recent insights into fungal LPMOs in a biological context. <i>Jean Guy Berrin</i> (Aix Marseille University/INRAE, France). Invited speaker.
15:20	Concluding remarks
15:30	Symposium end