NOBEL SYMPOSIA 198

CHEMISTRY FOR SUSTAINABILITY: FUNDAMENTAL ADVANCES

19-22 May, 2025

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CHEMISTRY FOR SUSTAINABILITY: FUNDAMENTAL ADVANCES

MONDAY MAY 19

Morning Arrival & registration

13.00-14.00 LUNCH

14.00-14.15 WELCOME

14.15-15.45 SESSION 1

Foundations of systems chemistry

Chair: Lennart Bergström, Stockholm University

- Javier Garcia Martinez, University of Alicante, Spain
  Catalyzing sustainable pathways for complex chemical transformations
- Magdalena Titirici, Imperial College London, UK
  Sustainable batteries - reality or utopia?
- Peter Licence, University of Nottingham, UK
  Systems and scale: where should we start?

15.45-16.15 COFFEE BREAK

16.15-17.55 SESSION 1 CONTINUED

Foundations of systems chemistry

Chair: Lennart Bergström, Stockholm University

- Paul Anastas, Yale University, USA
  The Design and Implementation of Systems Chemistry for Sustainability
- Audrey Moores, McGill University, Canada
  Integrating land-use and the eco-sphere in biomass research: a relational systems thinking approach to sustainability
- Joint panel

18.00-19.00 PHOTO SHOOT AND SIGNING OF THE STOCKHOLM DECLARATION

19.00 DINNER

TUESDAY MAY 20

8.30-10.30 SESSION 2

Sustainable synthesis

Chair: Belén Martín-Matute, Stockholm University

- Chao-Jun Li, McGill University, Canada
  Towards Green Synthesis
- Helen Sneddon, University of York, UK
  Sustainable Synthesis: considerations from a feedstock, solvent, reagent, technology and degradation perspective
- Shū Kobayashi, University of Tokyo, Japan
  Organic synthesis in water: towards a sustainable future
- Panel

10.30-11.00 COFFEE BREAK

11.00-13.00 SESSION 3

Sustainable materials chemistry

Chair: Kristiina Oksman, Luleå University of Technology

- Orlando Rojas, University of British Columbia, Canada
  Global insights into the circularity and sustainability of bio-based functional materials
- Athina Anastasaki, ETH Zürich, Switzerland
  Monomers from polymers
- Desiree Plata, Massachusetts Institute of Technology, USA
  Accelerating sustainable innovation to build a restorative economy
- Panel

13.00-14.00 LUNCH

14.00-16.00 SESSION 4

Molecular intersections of chemistry and toxicology

Chair: Magnus Breitholtz, Stockholm University

- Thomas Hartung, John Hopkins University, USA
  Green toxicology as a sustainable approach for assessing chemical safety and designing safer chemicals
- Beate Escher, Helmholtz Centre for Environmental Research (UFZ), Germany
  Innovative approaches for faster and reliable chemical hazard assessment
- Kathrin Fenner, University of Zurich, Switzerland
  Degradable-by-design chemicals: advances in making it practical and plausible
- Panel

16.00-16.30 COFFEE BREAK

16.30-17.30 POSTER SESSION

19.00 DINNER

WEDNESDAY MAY 21

8.30-10.30 SESSION 5

CO_2 conversion and use

Chair: Sascha Ott, Uppsala University

- Buxing Han, Chinese Academy of Sciences, China
  Conversion of CO_2, biomass, and waste plastics into chemicals and fuels in catalyst-green solvent systems
- Elsje Alessandra Quadrelli, University of Lyon, France
  CO_2 conversion as a climate mitigation strategy: when (some) "facts [are] uncertain, values in dispute, stakes high and decisions urgent" green chemistries are needed
- Ganapati Yadav, Institute of Chemical Technology, India
  CO_2 refineries of the future for fuels, chemicals, and materials
- Panel

10.30-11.00 COFFEE BREAK

11.00-13.00 SESSION 6

New activation methods for chemical transformations

Chair: Peter Somfai, Lund University

- Ben Feringa, University of Groningen, the Netherlands
  Exploring catalytic space
- Reshma Rao, Imperial College London, UK
  Electrocatalysis for production of green hydrogen and beyond: materials and mechanisms
- Tomislav Friščić, University of Birmingham, UK
  Mechanochemistry as a door to simpler, cleaner, scalable chemistry
- Panel

13.00-14.00 LUNCH

14.00-16.00 SESSION 7

Dynamic, adaptable, and obedient catalysts

Chair: Per-Ola Norrby, AstraZeneca

- Ludmilla Steier, University of Oxford, UK
  Understanding defect chemistry in photocatalysts
- Walter Leitner, Max Planck Institute for Chemical Energy Conversion, Germany
  From optimized to adaptive: multifunctional catalytic systems at a dynamic and variable chemistry-energy nexus
- Charlotte Vogt, Technion, Israel
  Seeing the unseen: unlocking the hidden forces of catalysis
- Panel

16.00-16.30 COFFEE BREAK

16.30 EXCURSION IN SIGTUNA

18.30 EVENING ACTIVITY WITH DINNER

THURSDAY MAY 22

8.30-10.30 SESSION 8

Sustainable and scalable processing

Chair: Tanja Zimmermann, Empa

- Philip Jessop, Queens University, Canada
  Direct and indirect hotspots as priorities for green chemistry research
- Kyoko Nozaki, University of Tokyo, Japan
  Reductive C-O bond cleavage for efficient use of carbon resources
- John Warner, Technology Greenhouse, USA
  Green chemistry behind the advancement of technologies to reality
- Panel

10.30-11.00 COFFEE

11.00-13.00 SESSION 9

Chemistry of the integrated bio-refinery

Chair: Joseph Samec, Stockholm University

- Julie Zimmerman, Yale University, USA
  Enabling the energy transition through the bioeconomy
- Kei Saito, Kyoto University, Japan
  Polymeric materials with extended lifetimes for circular economy
- Maya Jacob John, Council for Scientific and Industrial Research (CSIR), South Africa
  Biomass based composite technologies for sustainable development
- Panel

13.00-13.15 Concluding remarks

13.15-14.15 LUNCH

PARTICIPANTS

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