

"Building and Probing Small"

Programme

Monday March 25, 2019

09:00 Registration

10:30 Welcome Address

Session Chair

Prof. Anne-Sophie DUWEZ
(ULIÈGE, Liege, Belgium)

10:35 PL01 - Building Small: Making the Tiniest Machines

Prof. David LEIGH
(UNIVERSITY OF MANCHESTER, Manchester, United Kingdom)

11:30 KL01 - Artificial Molecular Machines that Work at all Scales

Prof. Nicolas GIUSEPPONE
(UNIVERSITY OF STRASBOURG, Strasbourg, France)

12:00 OC01 - Multicomponent Catalytic Machinery: How the Machine Speed Impacts Catalytic Activity

Prof. Michael SCHMITTEL
(UNIVERSITY OF SIEGEN, Siegen, Germany)

12:20 OC02 - Self-Assembly of Palladium(II)-Templated Covalent Macrocycles, Cages and Larger Structures

Dr Roy LAVENDOMME
(UNIVERSITY OF CAMBRIDGE, Cambridge, United Kingdom)

12:40 Lunch

Session Chair

Dr Guillaume DE BO
(UNIVERSITY OF MANCHESTER, Manchester, United Kingdom)

14:00 KL02 - The Challenges and Opportunities of Polymer Mechanochemistry

Prof. Roman BOULATOV
(UNIVERSITY OF LIVERPOOL, Liverpool, United Kingdom)

14:30 OC03 - Dynamics of Individual Molecular Shuttles Under Mechanical Force

Dr Borja IBARRA
(IMDEA NANOCIENCIA, Madrid, Spain)

14:50 OC04 - Probing the Implications of Knot Tightness on Molecular Level

Dr Liang ZHANG
(UNIVERSITY OF MANCHESTER, Manchester, United Kingdom)

15:10 KL03 - Molecular Motors Steering Macroscopic Motion

Prof. Nathalie KATSONIS
(UNIVERSITY OF TWENTE, Enschede, The Netherlands)

15:40 Coffee break

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Prof. Nicolas GIUSEPPONE
(UNIVERSITY OF STRASBOURG, Strasbourg, France)

16:10 PL02 - Radical Chemistry

Prof. J. Fraser STODDART
(NORTHWESTERN UNIVERSITY, Evanston, United States)

17:05 OC05 - Prototypes of Molecular Motors Based on Ruthenium(II) and Europium(III) Complexes

Prof. Gwenaél RAPENNE
(NANOSCIENCES GROUP CEMES, TOULOUSE CEDEX 4, France)

17:25 OC06 - Design and Synthesis of Rotary Molecular Machines for On-Surface Mechanical Studies

Dr Claire KAMMERER
(CEMES-CNRS, UNIVERSITÉ DE TOULOUSE, TOULOUSE cedex 4, France)

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Tuesday March 26, 2019

Session Chair

Prof. David ALSTEENS
(UCLOUVAIN, Louvain-La-Neuve, Belgium)

09:00 PL03 - Single Molecule Mechanics of Proteins

Prof. Matthias RIEF
(TECHNISCHE UNIVERSITÄT MÜNCHEN, Munich, Germany)

09:55 KL04 - Deconstructing the Molecular Mechanism of Extreme Mechanostability in Pathogen Adhesins

Mr Lukas MILLES
(LUDWIG-MAXIMILIANS-UNIVERSITÄT, München, Germany)

10:25 Presentation of the NanoWizard ULTRA Speed 2 by Bruker

10:35 Coffee break

Session Chair

Prof. Nathalie KATSONIS
(UNIVERSITY OF TWENTE, Enschede, The Netherlands)

11:05 KL05 - Light-Driven Nanomachinery

Prof. Stefan HECHT
(HUMBOLDT-UNIVERSITÄT ZU BERLIN, Berlin, Germany)

11:35 OC07 - Photoswitching DNA-Templated Supramolecular Assemblies

Prof. Mathieu SURIN
(UNIVERSITY OF MONS - UMONS, Mons, Belgium)

11:55 OC08 - Probing PH-Switchable Enzymatic Nanoreactors by Light-Driven Proton Transfer

Dr Dietmar APPELHANS (LEIBNIZ-INSTITUT FÜR POLYMERFORSCHUNG DRESDEN E.V., Dresden, Germany)
(BIOIB,RICA)

12:15 KL06 - Manipulation of Single Molecules: Wires, Switches and Motors

Prof. Leonhard GRILL
(UNIVERSITY OF GRAZ, Graz, Austria)

12:45 Lunch

Session Chair

Prof. Charles-André FUSTIN
(UCLOUVAIN, Louvain-la-Neuve, Belgium)

14:00 PL04 - Quantitative Studies of Single Molecule Mechanochemistry

Prof. Stephen CRAIG
(DUKE UNIVERSITY, Durham, United States)

14:55 KL07 - Mechanochemistry of the Mechanical Bond

Dr Guillaume DE BO
(UNIVERSITY OF MANCHESTER, Manchester, United Kingdom)

15:25 OC09 - Oscillating Emission of [2]Rotaxane Driven by Chemical Fuel

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Mr Amit GHOSH
(UNIVERSITY OF SIEGEN, Siegen, Germany)

15:45 **Coffee break**

16:15 **Poster session**

Session Chair

Prof. Stefan HECHT
(HUMBOLDT-UNIVERSITÄT ZU BERLIN, Berlin, Germany)

17:15 **KL08 - Chemistry Inside the Cavities of Flexible Metal-Organic Cages**

Prof. Rafal KLAJN
(WEIZMANN INSTITUTE OF SCIENCE, Klosterneuburg, Austria)

17:45 **KL09 - Functionalization of 2D Materials: A Molecular Approach**

Prof. Steven DE FEYTER
(KU LEUVEN, Leuven, Belgium)

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Wednesday March 27, 2019

Session Chair

Dr Xavier BOUJU
(CEMES-CNRS, Toulouse, France)

09:00 PL05 - Mechanical Engineering of Protein-Based Biomaterials: from Single Molecule to Biomaterials

Prof. Hongbin LI
(UNIVERSITY OF BRITISH COLUMBIA, Vancouver, Canada)

09:55 KL10 - Force Spectroscopy and High-Speed Bio-AFM Reveal Dynamic and Nano-Mechanical Properties of Antibodies

Prof. Peter HINTERDORFER
(JOHANNES KEPLER UNIVERSITY LINZ, Linz, Austria)

10:25 OC10 - Versatile Tools Towards Real-Time, Single-Molecule Biology

Dr Aida LLAURO PORTELL
(LUMICKS, Amsterdam, The Netherlands)

10:45 Coffee break

Session Chair

Dr Damien SLUYSMANS
(ULIÈGE, Liege, Belgium)

11:15 KL11 - Nanomechanical Mapping of Virus Binding Sites to Animal Cells

Prof. David ALSTEENS
(UCLOUVAIN, Louvain-La-Neuve, Belgium)

11:45 OC11 - Probing the Viscoelastic Properties of Polymeric Materials at the Nanoscale

Prof. Philippe LECLERE
(UMONS, Mons, Belgium)

12:05 OC12 - Self-Assembly and Reactivity in Nanoscale Corrals on Graphite

Mr Lander VERSTRAETE
(KU LEUVEN, Leuven, Belgium)

12:25 Closing address