



Solvay Workshop

"Chiral Symmetry Breaking at Molecular Level"

VENUE: ULB, Campus de la Plaine, Brussels Building N.O. - 5th Floor - SOLVAY ROOM

Program (November 28 - 30, 2018)

WEDNESDAY 28 NOVEMBER 2018

09:30 - 10:00 Registration and welcome coffee

Chair: Bert Meijer

10:00 - 10:20 Speaker: Yves Geerts (ULB, Brussels, Belgium)

Introduction and context

10:20 - 11:00 Speaker: Donna G. Blackmond (Scripps Research I., La Jolla, USA)

Energy requirement for symmetry breaking in autocatalysis for the emergence of biological homochirality

11:00 - 11:40 Speaker: David Amabilino (U. of Nottingham, UK)

Emergence of morphological chirality in crystals

11:40 - 12:20 Speaker: Ben Feringa (U. of Groningen, The Netherlands)

Exploring chiral space

12:20 - 13:00 Speaker: Karl-Heinz Ernst (Empa, Switzerland)

Cooperate chiral symmetry breaking in two dimensions

13:00 - 14:00 LUNCH (IN HALL ADJACENT TO THE SOLVAY ROOM)

14:00 - 14:40 Speaker: Carsten Tschierske (Martin Luther U. Halle-Wittenberg, Germany)

Chiral symmetry breaking in liquids and liquid crystals

14:40 - 15:20 Speaker: Martin Quack (ETH Zurich, Switzerland)

Parity violation in chiral molecules, biomolecular homochirality, and the fundamental symmetries of physics

15:20 - 16:00 Speaker: Ron Naaman (Weizmann Institute of Science, Israel)

Separation of enantiomers by enantio-specific interaction of chiral molecules with magnetic substrates

16:00 - 16:30 COFFEE BREAK (IN HALL ADJACENT TO THE SOLVAY ROOM)

- 16:30 - 17:10 Speaker: Kazuyuki Ishii (U. of Tokyo, Japan)
Chirality induced by aggregation of aromatic compounds
- 17:10 - 17:50 Speaker: Rasmita Raval (U. of Liverpool, UK)
Nanoscale viewpoints of mirror symmetry breaking at surfaces
- 17:50 - 18:00 Break and installation of posters (9th Floor - room 2N 0906)
- 18:00 - 19:30 **POSTER SESSION AND BUFFET WITH BELGIAN BEERS (9th Floor)**

THURSDAY 29 NOVEMBER 2018

Chair: Dominique Maes

- 10:00 - 10:40 Speaker: Sarah L. Price (U. College London, UK)
Computer modelling insights into chiral separation by crystallization for organic molecules
- 10:40 - 11:20 Speaker: Wim Noorduin (AMOLF, Amsterdam, The Netherlands)
Physical chemical routes to single handedness
- 11:20 - 12:00 Speaker: Inbal Tuvi Arad (The Open U. of Israel)
Conformational chirality of protein building blocks and the chiral ramachandran plot
- 12:00 - 12:40 Speaker: Michinori Suginome (Kyoto U., Japan)
Dynamic helical macromolecules for catalytic transfer, amplification, and up-conversion of molecular chirality in asymmetric synthesis
- 12:40: 12:50 GROUP PHOTO (in the Solvay room)
- 12:50 - 13:30 LUNCH (IN HALL ADJACENT TO THE SOLVAY ROOM)**
- 13:30 - 14:10 Speaker: Peter Vekilov (U. of Houston, USA)
Olanzapine crystal symmetry originates in preformed centrosymmetric solute dimers
- 14:10 - 14:50 Speaker: Elias Vlieg (Radboud U., The Netherlands)
Deracemization of everything?
- 14:50 - 15:30 Speaker: Kenso Soai (Tokyo U. of Science, Japan)
Asymmetric autocatalysis and the origin of homochirality
- 15:30 - 16:10 Speaker: Josep Ribó (U. de Barcelona, Spain)
Chemical networks able to show spontaneous mirror symmetry in chemical evolution scenarios

16:10 - 16:30	COFFEE BREAK (IN HALL ADJACENT TO THE SOLVAY ROOM)
16:30 - 18:00	Solvay Colloquium by Cristobal Viedma (UCM, Madrid Spain) <i>Fighting fire with fire: racemization drives deracemization</i>
18:00 - 18:30	Public transportation to downtown Brussels
18:30 - 19:30	Free time downtown Brussels to drink a beer, to visit or to buy chocolates
19:30	Banquet at the Scheltema Restaurant, Rue des Dominicains, 7 - 1000 Brussels

FRIDAY 30 NOVEMBER 2018

Chair: Yves Geerts

10:00 - 10:40	Speaker: John M. Doyle (Harvard U., USA) <i>High-specificity spectroscopy and chiral detection using buffer-gas cooling and microwave three-wave mixing</i>
10:40 - 11:20	Speaker: Mats Larsson (Stockholm U., Sweden) <i>Chiral-chiral interaction and symmetry breaking studied in low-energy collision experiments</i>
11:20 - 12:00	Speaker: Pedro Cintas (UEx, Badajoz, Spain) <i>Mirror-symmetry breaking in prebiotic chemistry: Computer-aided insights</i>

12:00 - 13:30 LUNCH (IN HALL ADJACENT TO THE SOLVAY ROOM)

13:30 - 14:10	Speaker: Steven DeFeyter (KU Leuven, Belgium) <i>Controlling chirality at the liquid-solid interface</i>
14:10 - 14:50	Speaker: Anja Palmans (Technische U. Eindhoven, The Netherlands) <i>Symmetry breaking and deracemisation in supramolecular polymeric systems</i>
14:50 - 15:30	Speaker: Bert Meijer (Technische U. Eindhoven, The Netherlands) <i>Conclusions & perspectives</i>
15:30	End of the conference