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RESEARCH CONFERENCES

ESF-COST High-Level Research Conference

Systems Chemistry

Hotel Villa del Mare, Acquafredda di Maratea • Italy
3 – 8 October 2008

Chair: **Günter von Kiedrowski**, Ruhr University Bochum, DE
Vice-Chair: **Dieter Schinzer**, University of Magdeburg, DE

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Final Programme

Friday 3 October

Late afternoon / early evening	Registration at the ESF-COST desk
19.00	Dinner
21.00	Welcome Drinks

Saturday 4 October

08.45-09.00	Conference Opening

Session 1: Replication Systems Chemistry

Chair: Peter Strazewski, University of Lyon, France

09.00-09.45	Günter von Kiedrowski Ruhr-University of Bochum, Germany *Some roots of Systems Chemistry*
09.45-10.30	Douglas Philp University of St. Andrews, St. Andrews, UK *In Through the Out Door: Directing Synthetic Replication Networks*
10.30-11.00	Coffee break
11.00-11.45	M. Reza Ghadiri The Scripps Research Institute, La Jolla, USA *Peptide Replicators and Artificial Copying Systems*
11.45-12.30	Gonen Ashkenasy Ben Gurion University of the Negev, Beer Sheva, Israel *Functional Modules in Small Networks of Replicating Molecules*
12.30	Lunch
16.00-16.30	Coffee break

Session 2: Systems Chemistry of the Early Earth

Chair: Zbigniew Zagorsky, Institute of Nuclear Chemistry, Warsaw

16.30-17.15	George Cody Carnegie Institution, George Mason University, Washington, USA *Geomimetic Biochemistry*
17.15-18.00	James Cleaves Carnegie Institution, George Mason University, Washington, USA *Mineral Surfaces, Molecular Selection, and the Origin of Life's Homochirality*
19.00	Dinner
20.30-22.00	Poster session

Sunday 5 October

Session 3: Metabolic Systems Chemistry

Chair: Dieter Schinzer, University of Magdeburg, Germany

09.00-09.45 — **Steven A. Benner**
The Foundation for Applied Molecular Evolution, Gainesville/FL, USA
Systems Chemistry that Creates "Life", Naturally on Earth and by Intelligent Design

09.45-10.30 — **Arthur C. Weber**
SETI Institute, NASA Ames Research Center, Mountain View/CA, USA
Sugars as the Source of Energized Carbon for Protobiosynthesis

10.30-11.00 — Coffee break

11.00-11.45 — **Carlos F. Barbas, III**
The Scripps Research Institute, La Jolla, USA
Organocatalysis: Today and yesterday

11.45-12.30 — **Svetlana B. Tsogoeva**
University of Erlangen-Nuremburg, Germany
Self-replication: Organocatalysis goes autocatalytic

12.30 — Lunch

16.00-16.30 — Coffee break

Session 4: Systems Chemistry at the Interface to Synthetic Biology

Chair: Peter Strazewski, University of Lyon, France

16.30-16.55 — **Piet Herdewijn**
Royal University of Leuven, Belgium
Non-natural Nucleic Acids Recognized by Polymerases

16.55-17.20 — **Pierre-Alain Monnard**
University of Southern Denmark, Odense, Denmark
Nucleobase-mediated, photocatalytic production of amphiphiles to promote the self-assembly of a simple selfreplicating protocell

17.20-17.45 — **Pasquale Stano**
University of Rome III, Italy
Vesicles-based Systems and Semi-synthetic minimal cells

17.45-18.10 — **Ludovic Jullien**
UMR CNRS-ENS-Université Paris 6, France
Sorting Strategies for Systems Chemistry

19.00 — Dinner

20.30-22.00 — Poster session

Monday 6 October

Session 5: Asymmetric Systems Chemistry

Chair: Josep M. Ribo, University of Barcelona, Spain

09.00-09.45	Kenso Soai Tokyo University of Science, Japan *Role of Asymmetric Autocatalysis in the Origins of Homochirality*
09.45-10.30	Donna Blackmond Imperial College London, UK *Chemical and Physical Models for the Evolution of Biological Homochirality*
10.30-11.00	Coffee break
11.00-11.45	Ben Feringa University of Groningen, The Netherlands *From Molecules to Molecular Systems*
11.45-12:10	Meir Lahav The Weizmann Institute of Science, Rehovot, Israel *Racemic b-sheets as Templates in the Chirobiogenesis of Peptides*
12.10-12.45	Vladik A. Avetisov Semenov Institute for Chemical Physics, Moscow, Russia *Theoretical Foundations of Chiral Symmetry Breaking*
13.00	Lunch
Afternoon	Half-day excursion
19.00	Dinner
20.00-21.00	Forward Look Plenary Discussion

Tuesday 7 October

Session 6: Systems Theory and the Origin of Life

Chair: John S. McCaskill, Ruhr University of Bochum, Germany

09.00-09.45	Peter Schuster University of Vienna, Austria *The Advent of Information and Combinatorial Complexity: Understanding Darwinian Evolution at the Molecular Level*
09.45-10.30	Eörs Szathmáry Collegium Budapest, Hungary *The Origin of the Genetic Code: Pattern and Process*
10.30-11.00	Coffee break
11.00-11.45	Stuart Kauffman University of Calgary, Canada *Reinventing the Sacred*
11.45-12.10	Addy Pross Ben Gurion University of the Negev, Beer Sheva, Israel *Life as a Kinetic Phenomenon*

12.10-12.45	Christoph Kuhn Switzerland *Systems Chemistry and Early Attempts to Understand the Origin of Life*
13.00	Lunch
16.00-16.30	Coffee Break

Session 7: Protocell Projects – Where we stand today

Chair: Eörs Szathmáry, Collegium Budapest, Hungary

16.30-17.15	Peter E. Nielsen University of Kopenhagen, Denmark *Peptide Nucleic Acid (PNA) as an Information Molecule*
17.15-18.00	John S. McCaskill Ruhr University of Bochum, Germany *Phase-Modulating Chemical Reactions towards Artificial Cells*
18.00	Closing remarks
20.00	Get-together & Conference Dinner

Wednesday 8 October

Breakfast & Departure

Abstracts, Posters & Short Oral Presentations

There will be no short talks other than those listed on the programme.
All other abstracts are accepted as posters. The list of accepted posters is available from www.esf.org/conferences/08267.

They can be fixed with self-adhesive tape onto poster panels which will be available. Recommended poster size is 100 cm high x 100 cm wide. Use letters and drawings that can be read from approximately 100 cm distance.