Fourth International Symposium

ENGINEERING OF CHEMICAL COMPLEXITY

Program

6 June, Tuesday

16:00 – 20:00 Registration

7 June, Wednesday

8:45 Opening: **G. Ertl**

Session chair: ***P. De Kepper***

9:00 **R. Kapral** (Toronto, Canada)
"Geometrical effects on spiral defect dynamics"

9:35 **Y. Kuramoto** (Sapporo, Japan)
"Noise-induced chemical turbulence"

10:10 **J. L. Hudson** (Charlottesville, USA)
"Dynamical order and complexity in populations of electrochemical oscillators"

10:45 – 11:15 Coffee break

Session chair: ***R. Kapral***

11:15 **I. Epstein** (Waltham, USA)
"Localized structures in reaction-diffusion systems"

11:50 **H. Kitahata, K. Yoshikawa** (Kyoto, Japan)
"Spontaneous motion of a droplet driven by chemical potential or photon flux"

12:25 – 14:00 Lunch

Session chair: ***N. Jaeger***

14:00 **P. De Kepper** (Bordeaux, France)
"The Landolt reaction: Stationary and oscillating fronts in an open spatial reactor with conical geometry"

14:35 **A. De Wit** (Brussels, Belgium)
"Hydrodynamic instabilities of chemical fronts"

15:10 **O. Steinbock** (Tallahassee, USA)
"Three-dimensional wave structures in excitable media"

15:45 – 16:15 Coffee break

Session chair: ***M. Marek***

16:15 **K. Showalter** (Morgantown, USA)
"Collective behavior in addressable excitable media"

16:50 **H. Engel** (Berlin)
"Feedback-controlled motion of a spiral wave core along a desired trajectory in an excitable medium"

17:25 **M. Bär** (Berlin)
"Effective models and homogenization in reaction-diffusion processes: from tunable pattern formation to realistic heart modeling"

8 June, Thursday

Session chair: ***K. Showalter***

9:00 **I. A. Aksay** (Princeton, USA)
"Processing of pixelated matter through guided self-assembly"

9:35 **U. Steiner** (Cambridge, UK)
"Structure formation in organic-inorganic hybrid materials"

10:10 **H. Yokoyama** (Tsukuba, Japan)
"Morphology and dynamics of microscopic bubbles in liquid crystals"

10:45 – 11:15 Coffee break

Session chair: ***Y. Kevrekidis***

11:15 **E. Bodenschatz** (Göttingen, Germany)
"Spatially forced patterns and hexaroll chaos"

11:50 **R. Ismagilov** (Chicago, USA)
"Using microfluidics and modular mechanism to understand spatiotemporal dynamics of complex reaction networks"

12:25 – 14:00 Lunch

*Session chair****: Y. Nishiura***

14:00 **Q. Tran-Cong** (Kyoto, Japan)
"Reaction-induced hierarchical structures in multiphase polymer materials"

14:35 **F. Sagues** (Barcelona, Spain)
"Langmuir monolayers: textures, flows and dynamic patterns"

15:10 **M. Bonn** (Amsterdam, Netherlands)
"Site-dependent surface reactivity investigated using nanostructured surfaces"

15:45 – 16:15 Coffee break

Session chair: ***J. Hudson***

16:15 **R. Imbihl** (Hannover, Germany)
"Pulses transporting potassium on a Rh(110) surface"

16:50 **D. Luss** (Houston, USA)
"What causes temperature oscillations during CO oxidation in packed bed reactors"

17:25 **J. Lauterbach** (Newark, USA)
"Local microdosing as means to control a nonlinear surface reaction"

19:00 Concert Bastian Schäfer (Berliner Philharmoniker, First Violinist)
Matthew Hunter (Berliner Philharmoniker, Violist)
1. Georg Friedrich Händel, Chaconne in G Major
2. Wolfgang Amadeus Mozart, Duo KV 423, for Violin and Viola
Allegro
Adagio
Rondeau

19:30 Dinner

9 June, Friday

Session chair: ***E. Bodenschatz***

9:00 **Y. Nishiura** (Sapporo, Japan)
"Entropy and sensitivity of particle patterns in dissipative systems"

9:35 **B. Fiedler** (Berlin)
"Kinematics of forced meandering and drifting spirals"

10:10 **Y. Kevrekidis** (Princeton, USA)
"Some examples of coarse-grained computation in complex systems"

10.45 – 11:15 Coffee break

Session chair: ***G. Ertl***

11:15 **M. Marek** (Prague, Chech Republic)
"Nonlinear dynamics of forced catalytic mufflers"

11:50 **K. Krischer** (München, Germany)
"Instabilities and pattern formation during electro-oxidation of H_2-CO mixtures in a fuel cell relevant system"

12:25 **M. Falcke** (Berlin)
"By chance or by the clock: How does intracellular calcium oscillate?"

13:00 **Y. Kuramoto** (Sapporo, Japan)
"Early days of the research on coupled oscillators"

13:30 Closing