

# Third International Symposium

## *ENGINEERING OF CHEMICAL COMPLEXITY*

### Program

#### **4 May, Tuesday**

16:00 – 20:00 Registration

#### **5 May, Wednesday**

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

Session chair: **N. Jaeger**

9:00 **M. Marek**

“Nonlinear dynamics of catalytic converters”

9:35 **D. Luss**

“Dynamics of transversal hot zones on the top of shallow packed bed reactors”

10:10 **J. L. Hudson**

“On the mechanism of sudden onset of pitting corrosion on stainless steels”

10:45 – 11:15 Coffee break

Session chair: **R. Kapral**

11:15 **M. Britton**

"Probing chemical waves and patterns using nuclear magnetic resonance"

11:50 **J. Lauterbach**

“Pattern formation during heterogeneously catalyzed reactions: bridging the materials and pressure gap”

12:25 – 14:00 Lunch

Session chair: **H. Yokoyama**

14:00 **K. Showalter**

“Collective behaviour of interacting stabilized waves”

14:35 **O. Steinbock**

“Anomalous dispersion in chemical reaction-diffusion systems”

15:10 **S. Müller**

“Hydrodynamic instability of autocatalytic reaction fronts”

15:45 – 16:15 Coffee break

Session chair: **D. Luss**

16:15 **I. Epstein**

“Complex patterns in complex media”

16:50 **R. Imbuhl**

“Reactive phase separation in surface chemical reactions”

17:25 – 18:45 Poster session

19:00 Conference dinner

**6 May, Thursday**

Session chair: **R. Rigler**

9:00 **R. Kapral**

“Mesoscopic dynamics of reaction-diffusion systems”

9:35 **P. Gaspard**

“Oscillatory phenomena and fluctuations in nanosystems”

10:10 **Y. Tabe**

“Coherent collective molecular motion in a condensed monolayer system”

10:45 – 11:15 Coffee break

Session chair: **Y. Nishiura**

11:15 **R. Rigler**

“Nonequilibrium catalysis of single enzyme molecules”

11:50 **E. D. Gilles, J. Stelling**

“Structure of cellular biological systems”

12:25 – 14:00 Lunch

Session chair: **I. Epstein**

14:00 **N. Packard**

“Evolutionary control of amphiphilic phases”

14:35 **T. Ohta**

“Microphase separation in rod-coil copolymers”

15:10 **M. Bär**

“Chemically driven moving structures in thin liquid films and biomembranes”

15:45 – 16:15 Coffee break

Session chair: **S. C. Müller**

16:15 **F. Sagues**

“Chemoconvective patterns: experiments and theory”

16:50 **H. Engel**

“From trigger waves to phase waves and back again”

17:25 **M. Eiswirth**

“Nonautocatalytic oscillators and olfactory response”

**7 May, Friday**

Session chair: **N. Packard**

9:00 **I. Kevrekidis**

“Equation-free modeling of complex systems”

9:35 **B. Fiedler**

“Hybrid models”

10:10 **Y. Nishiura**

“Dynamics of particle-like patterns in dissipative systems”

10.45 – 11:15 Coffee break

Session chair: **G. Ertl**

11:15 **K. Krischer**

“A journey through the complex dynamics of electrode reactions”

11:50 **I. Kiss**

“Building up a society: cooperative action of coherent groups in electrochemical oscillator populations”

12:25 **H. Yokoyama**

“Technological impact of nonequilibrium nanostructures in reactive soft matter”

13:00 Closing

## **Poster presentations**

### **1. C. Beta**

“From uniform to nonuniform coupling: global feedback in oscillatory reaction-diffusion systems “

### **2. V. Casagrande**

“Desynchronization and turbulence in populations of nonlocally coupled chemical oscillators”

### **3. J. Davidsen**

„Spiral wave dynamics on spherical shells with inhomogeneous excitability“

### **4. M. Hauser and S. C. Müller**

"Nonlinear dynamics in a membrane-bound enzyme model system"

### **5. Y. Hayase**

"External noise applied to a bistable surface reaction"

### **6. H. Kori**

“Pacemakers in randomly coupled oscillator networks”

### **7. M. Nonomura**

" Kinetics of morphological transitions in microphase-separated diblock copolymers"

### **8. O. Rudzick**

“Storage of pulses and twisted spirals in oscillatory media under periodic forcing”

### **9. U. Storb, C. R. Neto, M. Bär, and S. C. Müller**

"Interaction of filaments in an excitable chemical reaction"

### **10. G. Viswanathan and D. Luss**

“Transverse non-uniform states in packed bed reactors”

### **11. V.S. Zykov, G. Bordiougov, H. Brandtstädter, I. Gerdes, and H. Engel**

“How to guide a spiral wave core along a prescribed trajectory through an active medium”