

# ESF RESEARCH CONFERENCES

## Rapporteur Report

Partnership:	
Conference Title:	Systems Chemistry III
Dates:	23-28 October, 2011
Chair:	Prof. Gonen Ashkenazy
Rapporteur:	Prof. Wim Dehaen

### General Comments

The conference was attended by a number of scientists from diverse areas of research. Many people came from a community dealing with the Origin of Life (OoL). Others were coming from the community of supramolecular chemists, and are now taking a more systems chemistry (SC) view (this reporter belongs, or aspires to belong, to the latter category). Both theoreticians and experimentalists were present, often leading to interesting confrontation of ideas.

### Quality of Scientific Programme, Presentations and Discussion

The area of SC is a very broad and interdisciplinary one, too broad perhaps to cover completely in a 4-day conference. The organizers have made some clear choices (Dynamic Self-Assembly, Molecular networks, Artificial cells, Origin of homochirality, Peptides, proteins and nucleic acids in systems chemistry, Minimal living systems), that are complementary to earlier editions of this conference series. The quality of the presentations and ensuing discussions was generally at a very high level. One evening lecture was given by a Nobel laureate.

### Informal Networking and Exchange; Atmosphere

The organizers and chairpersons left enough space for discussion after the lectures, and this was done in an open, friendly and constructive way. The program was not overburdened with lectures and there was enough time in the program for informal discussions during breaks, lunches and dinners, and those discussions were quite lively at times. The chairpersons took the initiative to activate the younger persons in the audience to participate in formal discussions, which was not always successful. Perhaps the presence of so many eminent colleagues was intimidating. On the other hand, a number of short lectures and oral presentations were given by early stage researchers, and also the poster session made sure young people were not left out.

### Balance of Participants

There was a good balance between senior and junior researchers, and also a relatively good spread among European nationalities. Some relatively smaller countries had larger delegations (e.g. Israel, Denmark, The Netherlands) but these were in proportion to the efforts done in OoL/SC in these parts of the world. Among the speakers were some key scientists from the USA and Japan.

### Outlook and Future Developments

Many people present are relatively new to the field or even are just getting ready to enter it, but they will now contribute with techniques, products, ways of thinking to the emerging community of Systems Chemistry. The formal and informal discussions will be followed up, and this will surely lead to new collaborations that would not have been initiated if this conference would not have taken place.

In the outlook discussion, it became clear that

(1) there is indeed a large overlap between the domains of OoL and SC, and this ranges further into astrobiology. Some even said that astrochemistry is a more appropriate term

(2) next to the fundamental importance of SC and the relevance for domains such as organic synthesis, OoL, Systems Biology and Synthetic Biology, there are important opportunities for valorisation in (smart) material synthesis, molecular electronics, energy (recycling, fixing, storing), information technology, production (manufacturing) technologies, disease detection (and perhaps curing) and drug delivery.

(3) This very successful series of conferences should certainly live on. It was suggested to organize a next edition already in 2012, although on the long term a biannual formula may be more appropriate. It may be of interest to organize during the next conference a workshop where projects of theoretical people are given feedback by their experimental colleagues (and vice versa). It was suggested that Piet Herdewijn and Christoph Flamm would co-organize the next (Systems Chemistry IV) edition, perhaps in places like Cyprus or Split. The ESF office will be asked what are the possibilities.

### **Follow-up**

The current COST Action CM0703 on SC runs out in 2012 and initiatives have to be taken for a follow-up Action (or Actions). Stuart Kaufmann mentioned an important opportunity for OoL research (during the Outlook discussion) of collaborating with CERN.

What immediate and long term follow-up would benefit collaborations and dialogues that may have begun at the conference?

### **Organisation and Infrastructure**

The venue is a great one for this type of ESF conferences. Catering (all-in formula) and accommodation were of very high quality, offering great value and contributing to the friendly atmosphere, and the conference dinner was a highlight. The hotel is far enough from city sights, although a half day excursion was organized. The delegates are thus stimulated to stay at the hotel for informal discussions and do not stray over a large city area, and this is facilitating informal encounters. The conference room had all the expected requirements. The on-site administration and support was exemplary.

### **Summary & Overall Assessment**

Without any doubt this was a very successful conference (see the comments above) that is sure to have a significant effect on further development of the field.

## About ESF Research Conferences

### **The Scheme**

This conference is part of the European Science Foundation's (ESF) Research Conferences Scheme. The Scheme aims to promote scientific excellence and frontier level research throughout Europe and the rest of the world. Conferences aim to provide leading scientists and other participants, including young researchers, with a platform to present their work, to discuss the most recent developments in their fields of research and to network.

### **Conference Format**

The core activities should be based on lectures by invited speakers, who are leaders in their respective fields, followed by extensive discussion periods. An informal exchange of ideas, both inside and outside the lecture room, should be encouraged, and the number of sessions in the daily timetable should be limited in order to allow sufficient time for interaction between the participants. Time should be reserved for a 'Forward Look Plenary Discussion' about future developments in the field.

Participants can take all their meals together to encourage further contact and networking, which can be particularly beneficial to younger researchers who may be less outspoken in the formal lecture room setting. In order to gain optimum benefit from the conference, both the speakers and the participants are asked to stay for the whole duration.

### **Division of Tasks**

The Conference Chair is responsible for ensuring the quality of the scientific programme through the selection and invitation of speakers, and through the selection of participants.

The ESF Conferences Unit is responsible for managing all the logistical aspects of the conference organisation, including the provision of an on-site secretariat.

Further information: [www.esf.org/conferences](http://www.esf.org/conferences)