

# ESF RESEARCH CONFERENCES

## Rapporteur Report

Partnership:	ESF-LFUI
Conference Title:	Energy Landscapes
Dates:	16-21 July 2012
Chair:	David J. Wales, Cambridge University, UK
Rapporteur:	Dr. Frederic Cazals, INRIA Sophia-Antipolis, FR

### General Comments

Energy landscapes refers to a body of concepts, (physical/chemical) systems, algorithms and applications, which are found across various disciplines, namely physics, chemistry, (structural) biology, (non convex) optimization, applied mathematics, and computer science. In a nutshell, the domain aims at understanding and predicting how certain (molecular) systems evolve and stabilize. It is thus of prime scientific importance, and the variety of approaches developed in the communities corresponding to the aforementioned disciplines makes a conference such as *Energy Landscapes* highly stimulating.

### Quality of Scientific Programme, Presentations and Discussion

The scientific programme involved a collection of talks, balanced with respect to several criteria, namely (i) the afore-mentioned disciplines (ii) the status (invited talks given by leading scientists from the field, versus talks selected from the abstracts submitted), and (iii) the advancement in career of the speakers (young versus seasoned scientists). The talks were not exactly arranged into thematic sessions which is actually an excellent strategy, as people are not tempted to skip sessions that might appear outside their focus.

Stimulating discussions took place during the whole week. As a minor point, I would say that some more time after the short talks would not have harmed. Overall, following the grading system of the Guide Michelin, I would award a \*\*\* to this programme.

### Informal Networking and Exchange, Atmosphere

The atmosphere was relaxed and prone to exchanges. For example, a number of talks discussed unpublished results, which is a sign of confidence towards the audience. Young researchers were perfectly integrated, with 23 talks from tenured researchers and 17 from the younger participants (PhD students and post-docs).

The two poster sessions also triggered intense discussions. The space allocated to posters was a bit cramped, but this turned out to favour encounters! Lunches and dinners also provided excellent opportunities for discussions.

### Balance of Participants

Perfect balance between disciplines, as mentioned above while discussing the quality of the scientific programme. All continents (but Antarctica!) were also represented.

### Outlook, Future Developments and Follow up

Providing precise statistics on the number of collaborations that will emerge from the conference is a difficult task. But such collaborations do exist. The author of this report is involved in one of them. At the individual level, one key benefit is the culture one gets the chance to develop while attending diverse talks such as those delivered within this conference.

At the community level, such an event is a key to networking. In fact, the variety of disciplines represented shows that there is a scientific community revolving around energy landscapes. Having a conference every two years is an excellent thing, but additional instruments should indeed be used to foster collaborations. In the last section of this report, I am making concrete suggestions.

## Organisation and Infrastructure

As for the programme, I would say three stars. The scenery is beautiful and at the same time not so distracting, thus favouring scientific exchanges. The catering was excellent, as was the administrative supervision by Miss Maja De Noyette.

## Summary & Overall Assessment

As outlined above, this has been an excellent conference, in all respects. The spirit of the ESF, namely Fostering collaborations across generations and disciplines has been fully respected. Below, I am proposing selected ideas to strengthen the links within this emerging community.

## Suggestions

Possible improvements at the conference level:

- The program was very dense, and the half day off was used for the excursion. Having another day would be beneficial. Half of this extra day would give more slack for discussions after the short talks. The other half day could be used for informal meetings and working groups. This half day could start with an open problems session, where people could raise challenging questions.
- Having a board with job offers, in particular PhD and post-doc positions would be helpful.
- Software and databases are great instruments to promote collaborations. Having a web site listing such resources would be helpful for the community. Similar experiences have proved useful in other disciplines (computer graphics, computational geometry).

Possible follow-ups at the community level:

- As said above, there is a very rich community of disciplines touching upon energy landscapes in one form or another. Collaborations between these disciplines would clearly be fostered by exchanges of PhD students and post-docs. Therefore, I believe that any ESF/EU instrument in the spirit of the Marie Curie Initial Training Networks<sup>1</sup>, or of Networks of Excellence would provide unique opportunities.

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<sup>1</sup> See [http://ec.europa.eu/research/participants/portal/page/people;efp7\\_SESSION\\_ID=hpdGQNKVJChwkjt15TKsGTVZSXmwcBzqnbzv7vFQFwbfWZs27h6p!-1246834902?callIdentifier=FP7-PEOPLE-2013-ITN](http://ec.europa.eu/research/participants/portal/page/people;efp7_SESSION_ID=hpdGQNKVJChwkjt15TKsGTVZSXmwcBzqnbzv7vFQFwbfWZs27h6p!-1246834902?callIdentifier=FP7-PEOPLE-2013-ITN)

## 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)