

Transnational chemical bonding

“ We want to anchor within national research strategies the principle that excellent transnational projects with high European added value should be adequately funded. ”

Please note that this project sheet represents an extension to the previous one, included in Series 1 of this publication.

Europe's national chemistry research programmes are extremely diverse, encompassing pure academic and industrial research as well as applications that overlap with neighbouring disciplines. Some attempts have been made to coordinate these efforts, but until now national funding procedures have hampered effective international collaboration. ERA-CHEMISTRY links 14 national research funding bodies from 12 European countries, thus providing a framework for greater coherence and coordination of research programmes and projects across Europe. Agreed European standards for the evaluation and funding of transnational projects are being developed and implemented to overcome the present fragmentation, leading to jointly managed and financed research programmes, and projects with transnational complementarities of expertise.

Chemistry is an international science with many transnational activities. There is an increasing importance of chemical research at the interfaces with other research fields and a large degree of interaction between fundamental, 'curiosity-based' studies and more applied areas like biomedical and materials research. Incompatible terminologies, procedures, research philosophies and funding parameters make the administration of transnational research programmes highly problematic. ERA-CHEMISTRY is implementing an interdisciplinary approach to the funding of chemical research, and is working towards the mutual opening of national programmes. ERA-CHEMISTRY has started resolving the unsettled responsibilities of R&D ministries and national research councils, at the interface between science-driven and industry-initiated research. ERA-CHEMISTRY embarks on a venture with a five-year work plan. The project brings together the programme directors of 14 national research councils and funding agencies, who are responsible for funding their countries' chemistry research and postgraduate training. The aim is to ensure close interaction between national efforts in specific fields, opening the way for joint European research programmes and increasing the international visibility of especially young researchers.

The 14 programmes' combined annual budget for transnational chemical research is approximately €80 million — 10% of all their chemistry research. As this would fund about 1000 researchers in Europe each year, ERA-CHEMISTRY has considerable potential to influence the course of future chemistry research.

European coordination so far

ERA-CHEMISTRY is based on the knowledge and the experiences of the Chairpersons and Directors of European Research Councils' Chemistry Committees (CERC3) who are now all full or associated partners of ERA-Chemistry. During the past three years, ERA-CHEMISTRY has collected and benchmarked information on national evaluation and funding procedures, research priorities and best practices in chemical research, in order to develop suitable common rules for the administration, evaluation and funding of transnational proposals. Prior to the implementation of new rules for the first ERA-CHEMISTRY call for proposals launched in June 2005, the chemical community had the opportunity to express its own wishes which were largely satisfied. There was a two-stage review procedure, starting with 78 transnational pre-proposals. In December 2005, the 9 most highly ranked full proposals (out of



“ *The new tools to be developed by the ERA-NET will establish a reference model for peer review in Europe.* ”

Full title:

Implementation of joint bottom-up European programmes in chemistry

Research field:

Chemistry, pure and applied

Coordinator:

Germany, German Research Foundation

Partners:

- Austria: Austrian Science Fund
- Belgium: Research Foundation - Flanders; National Fund for Scientific Research
- Finland: Academy of Finland
- France: National Center for Scientific Research
- Hungary: Hungarian Academy of Sciences
- Ireland: Irish Research Council for Science, Engineering and Technology
- The Netherlands: Netherlands Research Council
- Poland: Institute of Organic Chemistry of the Polish Academy of Sciences; Ministry of Science and Higher Education
- Portugal: Foundation for Science and Technology
- Spain: Ministry of Education and Science
- Switzerland: Swiss National Science Foundation

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35) received €3.3 million from a common pot and from earmarked national contributions.

Initiatives

ERA-CHEMISTRY includes 14 national research councils and funding agencies from 11 EU Member States and Switzerland. Eventually, it hopes to involve all European countries possessing a good chemical research infrastructure. Research councils currently outside the network (including non-European partners) are invited to take part in all ERA-CHEMISTRY activities. The links with European bodies, such as the European Chemical Industry Council (CEFIC) and with other relevant ERA-NETs, will be intensified.

ERA-CHEMISTRY has been extending its data collection and benchmarking of national guidelines for funding chemical research to neighbouring disciplines (physics, biology, materials science), including applied research. By considering the experiences of the first ERA-CHEMISTRY call for proposals, the common rules for administration, evaluation and funding of transnational proposals will be optimised. ERA-CHEMISTRY has explicitly decided against determining specific scientific subjects a priori. Supported by a high level Scientific Advisory Board, it will instead choose current ‘hot’ topics, to define the innovative chemistry-related research fields that are suitable for transnational thematic calls for proposals; this will be in the form of joint strategy

workshops between researchers and administrators, and also a new type of research conference (Flash Conferences). The topic of the first Flash Conference in March 2007 was ‘Molecules at the interface: From single molecule to functional assemblies’. The second call, on the topic ‘Chemical activation of methane and carbon dioxide’, was disseminated in March 2007, and was backed up by an Open Transnational Funding Scheme for small joint projects, without thematic restriction. Ultimately, all these approaches are expected to constitute the field of chemistry in the European Research Area, on a long-term scale, beyond the funding of the ERA-CHEMISTRY network itself.

ERA-CHEMISTRY has launched the following two Joint Calls:

1. “Hierarchically organised chemical structures: from molecules to hybrid materials”, Call launched: 01/06/2005 with a budget of 3,21 M euros; and
2. “Chemical activation of inert molecules”, Call launched: 20/03/2007 with a budget of 5,4 M euros.

Such Joint Calls can be regarded as major achievements not least because the pooled funds are put partly in a common pot and partly in a virtual pot.