EUROPEAN SCIENCE FOUNDATION
SETTING SCIENCE AGENDAS FOR EUROPE

STANDING COMMITTEE

# Physical and Engineering Sciences (PESC)

# Highlights 2007

## Editorial

This was a year of an extraordinary number of events accompanying the start of new programmes and initiatives: A new stage in developing the European Research Area (ERA) was reached with the launching of the European Commission's Framework Programme 7 (FP7) and with a series of events throughout Europe under the German and Portuguese EU Presidencies. The new European Research Council was officially launched in February during the German EU Presidency in Berlin. The first calls for starting investigators grants subsequently attracted over 9100 proposals and many scientists are eager to see the future development of research in Europe unfold with the onset of this new institution.

In 2007 ESF and EUROHORCS (European Heads of Research Councils) completed the fourth and last call of the European Young Investigator awards (EURYI) scheme with 20 new awardees. In June the European X-ray Free Electron Laser (EuroXFEL) was launched in an inaugural session in Hamburg, Germany. Euro-FEL is the very first large scale research infrastructure on the facilities list of the European Strategic Forum on Research Infrastructures (ESFRI) to actually begin the construction phase. In November the second ESFRI project was launched: FAIR in Darmstadt, Germany.

ESF co-organised several European Conferences together with EUROHORCS, the European Commission and the EU Presidency in 2007. In particular, on Research Integrity in September, on Materials Research and New Materials for sustainable energy and transportation in October, and the European Conference on the European Research Area in November.

Within ERA and the discussions about its further development ESF has a unique role as the vehicle of National Research Funding and Performing Organisations and Scientists in Europe for networking and foresight. Within the remit of Chemical, Physical and Engineering Sciences the Standing Committee promotes new strategic foresight and exploratory initiatives and advances in existing networking activities. The PESC unit implements the Committee's decisions and provides straight-forward support to European scientists within ESF programmes.

The highlights presented here illustrate selected initiatives and activities of the past year. The briefs and stories focus on the science behind the activities. They are meant to give a scientifically interested reader a picture of the independent scientific work we promote. We hope to make you curious as to where scientists can contribute to and benefit from PESC activities and from the European Science Foundation in the future.

**Patrick Bressler**, Head of Unit, PESC
**Michel Mareschal**, Chair of the Standing Committee for the Physical and Engineering Sciences – PESC

### Introducing the European Science Foundation – ESF

The European Science Foundation is the "executive agency of European research agencies" meaning that ESF serves its Member Organisations (National research funding and performing organisations) as a European entry point for coordinated multinational programmes and as a platform with common procedures and high quality standards for networking European research in the global context.

ESF promotes the advancement of science in three categories of activities: development of science strategy and science policy, creation of science synergy and networks, and management of multinational programmes.

ESF organises joint conferences and workshops, manages Research Network Programmes (RNPs) and the EUROCORES Programme (European Collaborative Research). Strategic outlooks, foresight studies, such as ESF Forward Looks, and policy briefings are other ESF actions that are becoming more and more important in Europe.

ESF also promotes science through networking activities via extra-European cooperation with partners from all over the world.

## Introducing the Physical and Engineering Sciences – Standing Committee and Unit

The Physical and Engineering Sciences Unit covers the large remit from mathematical sciences, physics and chemistry, to applied research, electronics and engineering.

The PESC Standing Committee is the ESF scientific panel for this remit. Over 30 distinguished scientists, nominated by the Member Organisations serve on the committee. Observers from the European Commission, the European Mathematical Society, the European Research Consortium for Informatics and Mathematics, the Israel Academy of Sciences, the U.S. National Science Foundations and the ESF Standing Committee for the Life, Earth and Environmental Sciences (LESC) are invited to committee meetings as are liaison members from the COST Domain Committees for Chemistry and Molecular Sciences and Technologies (CMST), Information and Communication Technologies (ICT), Materials, Physical and Nanosciences (MPNS) and, since 2007, an observer from the European Materials Forum (EMF). PESC also maintains close working relationships with the ESF Expert Committees on radio astronomy frequencies (CRAF), space sciences (ESSC), and nuclear physics (NuPECC).

The Standing Committee provides independent scientific advice on research issues. The panel assesses the proposals and monitors the ESF activities in the PESC remit. The Core Group prepares the work of the Standing Committee.

Further details can be found on the PESC website: *www.esf.org/pesc*

Pictured at the October 2007 meeting of the PESC Standing Committee held in Strasbourg, France are from left to right front row: Janos Kollar (HU), Michel Mareschal (BE), Patrick Bressler (ESF); second row: Manuel de Leon (ES); Peter Venturini (SL), Walter Gear (UK); third Row : Kaisa Sere (FI) ; Elisabeth Guazzelli (FR), Pasquale Lubrano (IT)

# Current Instruments

A brief description is given of each instrument below.
**Networking instruments** include
- European Collaborative Research Programmes (EUROCORES)
- Research Networking Programmes
- Exploratory Workshops

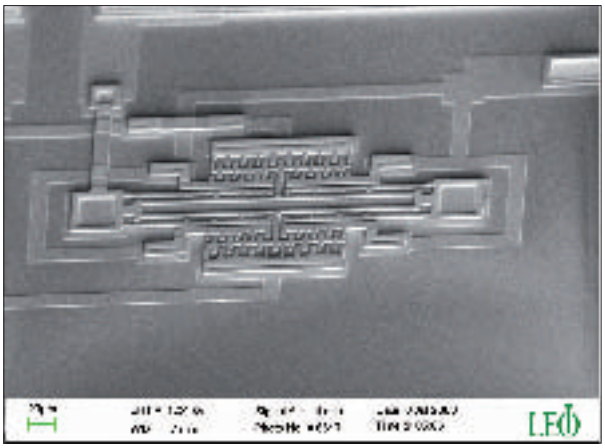
**Science Policy instruments** include
- Interdisciplinary New Initiatives Fund
- Forward Looks

# Networking Instruments

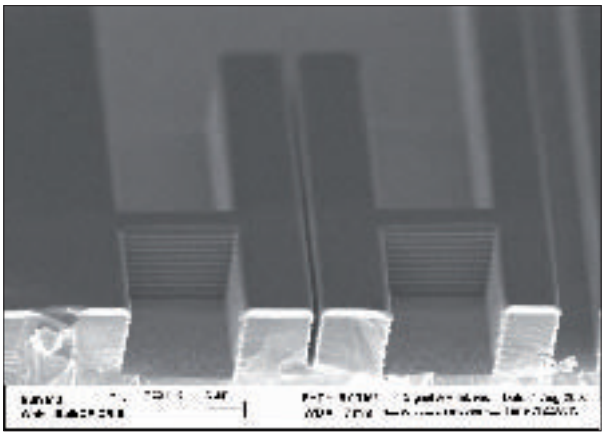
## EUROCORES

The aim of the European Collaborative Research Programmes is to enable researchers in different European countries to develop cooperation and scientific synergy in areas where European scale and scope are required. The scheme provides a flexible framework which allows national research funding organisations to join forces to support top-class European research in and across all scientific areas. The EUROCORES Scheme is currently supported by the EC Sixth Framework Programme under Contract no. ERAS-CT-2003980409.

- **Chemical Control at the Nanoscale – EuroNANOCHEM**
  Theme selected for further development; call to be issued in March 2008 if enough commitments from ESF Member Organisations
  See *www.esf.org/euronanochem*
- **Cold Quantum Matter – EuroQUAM**
  Research and Networking phase
  See *www.esf.org/euroquam*
- **Friction and Adhesion in Nanomechanical Systems – FANAS**
  Full proposal selection phase
  See *www.esf.org/fanas*
- **Fundamentals of NanoElectronics – FoNE**
  Research and Networking phase
  See *www.esf.org/fone*
- **Quantum Standards and Metrology – EuroQUASAR**
  Full proposal selection phase
  See *www.esf.org/euroquasar*
- **Self-Organised NanoStructures – SONS 1**
  Final Report under preparation
  See *www.esf.org/sons*
- **SONS 2**
  Research and Networking phase
  See *www.esf.org/sons2*
- **Smart Structural Systems Technologies – S3T**
  Research and Networking phase
  See *www.esf.org/s3t*



Micro-Monitoring – Power Harvesting MEMS Strain Sensors



Field Trials at tunnels in Prague metro

**Highlight**

### Smart Structural Systems Technologies (S3T)

This EUROCORES seeks to lay down theoretical and experimental bases for the integration of state-of-the-art sensors into systems to monitor and control major structures. Seven projects were launched with the programme's first scientific committee meeting in September 2006; these collaborative projects bring together 45 teams from 9 countries. The topics deal with diverse areas of smart structures such as: Material algorithms, Finite Element methods and Experiments; Smart sensing in Structural Health Monitoring; Aircraft Morphing; Shape Memory Alloys in Civil Engineering; Measurement and Monitoring of Ageing Underground Infrastructures using Micro Electro Mechanical Systems; Vibration Control in Civil Engineering; and, shape control of membrane reflectors. Several networking, dissemination and training activities have been organised by the S3T community including many joint initiatives with the US National Science Foundation.

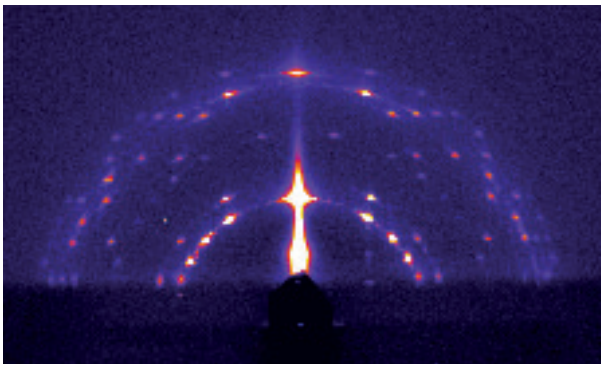
Images Courtesy of the Consortium: Measurement and Monitoring of Ageing Underground Infrastructures using Micro Electro Mechanical Systems, Project Leader: Prof. Kenichi Soga, University of Cambridge, UK.

**Highlight**

### Self-Organised Nano-Structures (SONS 1)

Several research highlights from individual projects (IPs) and Cooperative Research Projects (CRPs) have been making the headlines in top class peer-reviewed journals such as **Nature Materials, Nature Physics, Advanced Functional Materials** and others. For example:

- SONS 1 CRP "Nanoscale Electrical Transport in Self-Organized Molecular Assemblies (NETSOMA) made the cover page of **Nature Materials** (see **Nature Materials**, 950, 5, Dec. 2006) with "Multicomponent semiconductor polymer systems with low crystallization-induced percolation threshold".
- SONS 1 CRP: "Bio-organics nanostructuring for molecular electronics" (BIONICS) reports on "Quantitative Measurement of the local surface potential of π-conjugated nanostructures" in **Advanced Functional Materials** (see **Adv. Funct. Mater.**, p. 1407, 16, 2006).
- SONS 1 CRP: "Novel Optical Methods for Self-Assembled Nanostructures" (NOMSAN) reports on "Parallel and selective trapping in a patterned plasmonic landscape" in **Nature Physics** (p. 477-480, 3, 2007).



SONS 2: Grazing-incidence small-angle X-ray diffraction (GISAXS) pattern of a thin film of a amphiphilic liquid crystal whose molecule contains four incompatible segments - see schematic model. The film was deposited on silicon and recorded at the synchrotron beamline BM28 at ESRF, Grenoble. Courtesy of Feng Liu, Sheffield University, UK

**Highlight**

**Self-Organised Nano-Structures (SONS 2)**

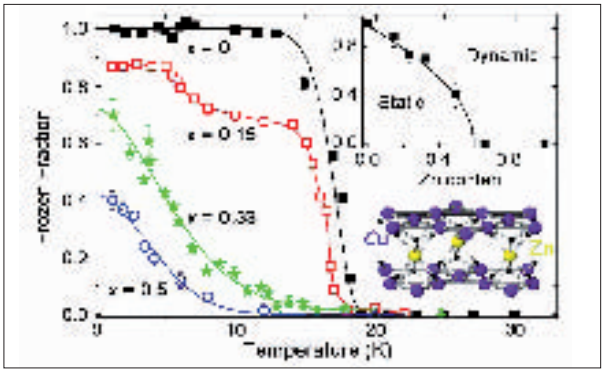
Professor John Goodby, Project Leader of LC-NANOP, and Dr. Saif Haque, Principal Investigator of SOHYD, are two of the winners of the Royal Society of Chemistry Awards 2007.
John Goodby, from the University of York, has been awarded the Interdisciplinary award for his longstanding contribution to the study of Liquid Crystals. Saif Haque, from Imperial College London, was awarded the Edward Harrison Memorial Prize for his research on organic solar cells.

## Research Networking Programmes (RNPs)

27 RNPs currently active with a further 5 under consideration for launching in 2008
For complete list see *www.esf.org/pesc/programmes*

**Highlight**

**Highly Frustrated Magnetism (2005-2010)** is a joint effort between solid-state chemists, experimental and theoretical physicists. Goal is to reach a broad understanding of the novel quantum states and effects driven by magnetic frustration.



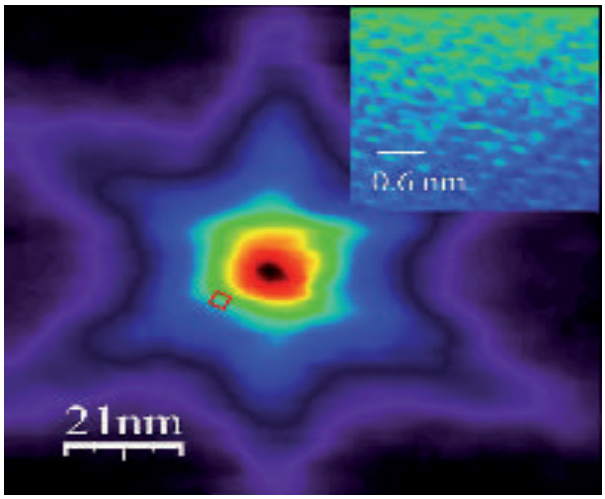

Phase diagram of the paratacamite family compounds $Cu_{4-x}Zn_x(OH)_6Cl_2$. Magnetic order vanishes as the perfect kagome case (x=1) is approached. Courtesy of P. Mendels, Université Paris Sud, France

**Highlight**

**Nanoscience and Engineering in Superconductivity (2007-2012)**

To publicly initiate the NES programme, the fifth international conference on Vortex Matter in Nanostructured Superconductors (VORTEX V) was jointly organised by the ESF and the **Japan Society for the Promotion of Science (JSPS)** in Rhodes, Greece, in September.

In total 130 participants from 25 countries attended. During the conference, many new and fascinating highlights were presented. A high point at the meeting was the discovery of terahertz radiation from a stack of intrinsic Josephson junctions in a mesa -Bi2212 crystal [U. Welp, Argonne National Laboratory, US]. This new technology will fill an important gap in the electromagnetic spectrum, and provide the world with a new tool for many applications. Soon it is expected that we will see the creation of new prototypes for generation of coherent terahertz light emission based on this scientific result.




STM imaging of a vortex in NbSe2.
Courtesy of H. Suderow, Universidad Autonoma de Madrid, Spain

## Exploratory Workshops

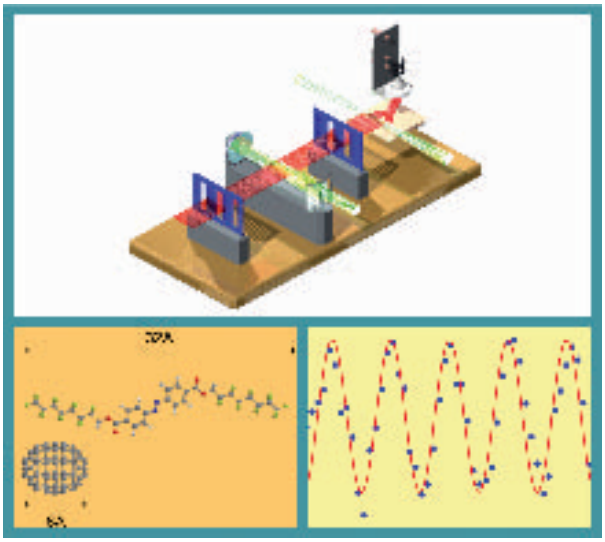
14 workshops in 2007
For complete list see *www.esf.org/pesc/workshops*

**Highlight**

**Coherence, Decoherence & Entanglement Of Non-Degenerate Massive Quantum Systems**
(Vienna, Austria, 4-7 October 2007)

An interdisciplinary group of experimentalists and theorists met in Vienna to explore the possibilities of future collaborations on the theme of “Coherence, decoherence and entanglement of non-degenerate massive quantum systems”. The experts covered a broad range of topics, among them, electron beam physics, neutron interferometry, atomic physics, photoelectron spectroscopy, mesoscopic solid state physics, macromolecule interferometry as well as particle physics.

As an outcome of the workshop, an application for a Research Networking Programme is currently being prepared. Furthermore, because of the interesting mix of people at the workshop, further joint research projects are being planned. There was also a good exchange of "technology knowhow" on the margins of the workshop and new connections were made with the Weizman theory community.



The figure shows a new type of molecule interferometer (a Kapitza-Dirac Talbot Lau interferometer) which has been recently developed by the Vienna research group around Markus Arndt [1], in fruitful interdisciplinary and transnational collaboration with chemists at the University of Basel and nanotechnologist at MIT, Cambridge. A new class of molecular chains (perfluoroalkyl-functionalized azobenzenes) could thus be shown to propagate as molecular waves – in spite of their hot, floppy and highly anisotropic character and in perfect agreement with the predictions of quantum physics. **[1] Nature Physics** 3, **711** – 715 (2007). Courtesy of Stefan Gerlich, Lucia Hackermüller, Klaus Hornberger, Alexander Stibor, Hendrik Ulbricht, Fabienne Goldfarb, Tim Savas, Marcel Müri, Marcel Mayor, and Markus Arndt

# Science Policy Instruments

## Interdisciplinary New Initiatives Fund

The goal of the Interdisciplinary New Initiatives Fund – INIF – is to promote cooperation and new initiatives across research domain boundaries with a potential to develop into larger follow-up activities with a strategic value for science in Europe including science policy (foresight type) topics. The follow-up activities may be developed in the framework of EUROCORES, ESF Forward Looks, EC Framework Programme or other initiatives.

**Highlight**

**Clean Solar Fuels: Scientific perspectives and their impacts on society and the global energy market**

This INIF workshop took place in Parsberg, Germany on 11-14 March 2007. During the workshop, the Steering Group concluded that an extended policy briefing with a prominent launching event and a press release in Brussels would be much more appropriate and effective to convey to the societies and funding organisations the necessity to support research in this highly important area.
The Science Policy Briefing is currently in preparation.

**Highlight**

**Emerging new science fields: the synergy of national lights sources in Europe**

This initiative deals with the emerging new science field and activities in the light of several new "free-electron-laser" facilities. The goal is to provide an academic/scientific platform to scope the new fields and to develop and combine new experimental methods without the 'facility-drive'.
The INIF scoping workshop took place in Zeuthen, near Berlin, May 21-23, 2007. Currently, the INIF editorial board is preparing a position paper.

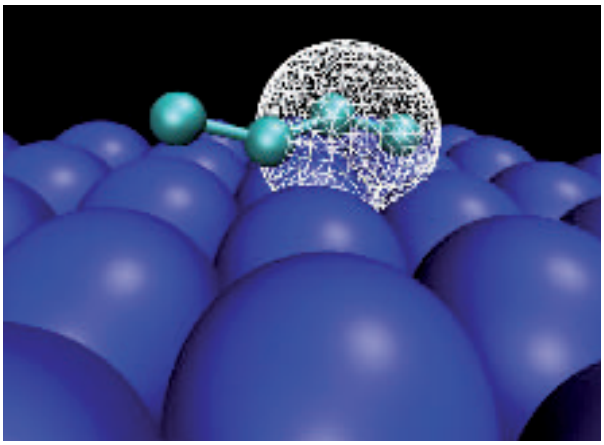
## Forward Looks

ESF Forward Looks are an instrument which enables policy makers from ESF Member Organisations, in interaction with Europe's scientific community and other organisations, to develop medium to long-term views and analyses of future research developments with the aim of defining research agendas and priorities. The purpose of a Forward Look is to bring together in a global context scientific foresight and priority setting for research funding at national and European levels.

**Highlight**

**European Computational Science**
**The Lincei Initiative: from computers to scientific excellence**

The aim of this Forward Look is to develop a vision of how Computational Sciences will evolve in the coming 10 to 20 years. Based on a scenario of how this field will evolve and on the needs of the scientific community, a strategy will be presented aiming at structuring software and hardware support and development at the European level.



$C_4$ fragment on a Nickel (111) surface. The electron density shown in wireframe format relative to one of the sigma-bonds.
Courtesy of S. Meloni, CASPUR, Rome, Italy

# Science Policy Issues

**Highlight**

### Annual Meeting with ESF Member Organisations

This year's PESC Round Table with Member Organisations (MO Round Table) focused on Chemistry. Issues were to identify scientific trends and requirements in chemistry, and discuss how to improve networking actions and what PESC can do to improve ESF support.

The Round Table included science officers and programme managers from Member Organisations, Core Group Members, ESF-PESC staff, observers and invited scientists. Invited speakers and discussion panellists were Dr. Richard Pike (CEO of the Royal Society of Chemistry and Executive Board Member of the Association for Chemical and Molecular Sciences (EuCheMS), Dr. John Baird (director Chemistry Division, EPSRC and Chairman of the Committee of European Chemistry Council Chairmen – CERC3), Dr. Karlheinz Schmidt, DFG (Chairman of ERANET Chemistry – ERAChem – and CERC3 Board Member), Dr. Mario Ruben (FZ Karlsruhe and EUROCORES IP Leader SONS) and Prof. Luis Echegoyen (Director Chemistry Division, National Science Foundation – NSF).

Presentations illustrated current funding and networking activities in Europe, at the NSF, at EPSRC and through ERAChem. Discussions dealt with the spectrum/variety of research in chemistry (or molecular sciences) and where structural obstacles could exist. In a dedicated session "Taking stock of chemistry" a "SWOT" analysis of the activities of individual member organizations in Chemistry was performed. Practical discussions focused on comparing ESF EUROCORES, ERAChem and EC funded research projects, better ways to deploy ESF-instruments and how to intensify cooperation, e.g.: with CERC3.

In summing up, Professor Mareschal emphasised that PESC is open to putting into practice quick European collaborations in the area of chemistry, in close collaboration with CERC3 and national funding organisations and that the structure of the Standing Committee is beneficial in that it allows for proposals that are not too limited. The aim is to achieve levels of flexibility and efficiency comparable to those existing in the US. The meeting led to the following mission statement for PESC: To provide a European vision for fundamental research in the chemical sciences and to lead to cross-disciplinary approaches to meet the challenges facing society, in the most flexible and effective manner.

PESC has decided to highlight one scientific field in its remit each year at the Member Organisation Round Table Meetings with the goal to identify action items and to promote new initiatives for research and networking. **The 2008 Meeting with Member Organisations will focus on engineering.**

**Highlight**

### Materials

In October 2006, the PESC Core Group entered discussions with the European Materials Research Society (EMRS) and the European Materials Forum (EMF) on how to cooperate closer in support of materials research and initiatives to create Knowledge and Innovation Communities (KICs), which are also foreseen as cornerstones for a European Institute of Technology (EIT).

A first result of these discussions was the "First World Materials Summit on Materials Research: Key to meeting Energy Needs and Climate Change" initiated and co-sponsored by PESC, EMRS, and EMF together with the Portuguese EU-Presidency, the European Commission, ALSTOM and the IUMRS. This conference took place in Lisbon 4-5 October 2007. It was extremely successful in that it attracted highly renowned scientists, policy makers and industrial representatives and was a high class showcase on how sustainable energy supply and climate change are true global issues that require more than just scientific understanding but clear solutions with ramifications in all fields of research and society.

In a final plenary session, the scientists present unanimously agreed to set up a new global networking initiative in this area. The global network, CORME (Coordination of Research on Materials for Energy), will be organized by the International Union of Materials Research Societies (IUMRS), working in conjunction with regional and national Materials Research Societies and related bodies. For Europe, the European Materials Forum (EMF) will be in charge.

In this context the EMRS and EMF have raised the question if it would be suitable to establish an expert committee on new materials and materials research. Tasks for such a committee would include foresight exercises for materials sciences and servicing as a science board to express materials scientists' views to European institutions such as ESFRI and the EC.

# Standing Committee Members

**Professor Michel Mareschal** (Chair)
Brussels, Belgium
**Professor Yvonne Brandt Andersson**
Uppsala, Sweden
**Professor Jean-Marie André**
Namur, Belgium
**Professor Venko N. Bechkov**
Sofia, Bulgaria
**Professor José Cardoso Menezes**
Lisbon, Portugal
**Professor Katarzyna Chalasinska-Macukow**
Warsaw, Poland
**Professor Kenneth A. Dawson**
Dublin, Ireland
**Professor René de Borst**
Eindhoven, Netherlands
**Professor Manuel de Leon** (Core Group Member)
Madrid, Spain

**Professor Wolfgang Ertmer**
Hannover, Germany
**Professor Stavros C. Farantos**
Crete, Greece
**Professor Walter Gear**
Cardiff, Wales, UK
**Professor Elisabeth Guazzelli** (Core Group Member)
Marseille, France
**Professor Ivan Hubac**
Bratislava, Slovak Republic
**Dr. Fjola Jonsdottir**
Reykjavik, Iceland
**Professor S. Engin Kilic**
Ankara, Turkey
**Professor János Kollár**
Budapest, Hungary
**Professor Ulrich Langer**
Linz, Austria
**Professor Bozidar Liscic**
Zagreb, Croatia
**Dr. Pasquale Lubrano** (Core Group Member)
Perugia, Italy
**Professor Elaine B. Martin**
Newcastle upon Tyne, UK
**Professor Enn Mellikov**
Tallinn, Estonia
**Dr. Henri-Noël Migeon**
Luxembourg
**Professor Radu Munteanu**
Cluj-Napoca, Romania
**Professor Ole John Nielsen**
Copenhagen, Denmark
**Professor Moira C. Norrie**
Zurich, Switzerland
**Professor Valdemaras Razumas**
Vilnius, Lithuania
**Professor Kenneth Ruud**
Tromso, Norway
**Professor Kaisa Sere** (Core Group Member)
Turku, Finland
**Professor Milan Tichy**
Prague, Czech Republic
**Mrs. Malgorzata Tkatchenko**
Gif sur Yvette, France
**Dr. Peter Venturini** (Core Group Member)
Ljubljana, Slovenia
**Professor Dorothea Wagner**
Karlsruhe, Germany
**Professor Michel Waroquier**
Gent, Belgium

Nominations from Cyprus and Italy (CNR) are currently pending.

## Observers and Liaisons

- Standing Committee for the Life, Earth and Environmental Sciences (LESC): **Professor Salvatore Cannistraro**
- COST BMBS – Biomedicine and Molecular Biosciences- Liaison: **Professor Mihail Pascu**
- COST CMST – Chemistry and Molecular Sciences and Technologies – **Liaison: Professor Venceslav Kaucic**
- COST ICT – Information and Communication Technologies – Liaison and European Research Consortium for Informatics and Mathematics – ERCIM: **Professor Juan José Moreno Navarro**
- European Materials Research Society (EMRS) / European Materials Forum (EMF): **Professor Gabriel Crean**
- European Mathematical Society: **Professor Ari Laptev**
- European Commission: **Dr. Lorenzo Valles-Brau**
- Israel Academy of Sciences and Humanities: **Professor Joseph Klafter**
- National Science Foundation: **Division of Materials Research**

# PESC Unit

**Dr. Patrick Bressler**, Head of Unit
**Marie Clifford**, Unit Coordinator and Senior Administrator
**Dr. Antonella di Trapani**, Science Officer, EUROCORES
**Chantal Durant**, Senior Administrator RNPs
**Nathalie Geyer**, Administrator
**Dr. Thibaut Lery**, Science Officer RNPs/Expert Committees
**Catherine Lobstein**, Administrator EUROCORES
**Carole Mabrouk**, Senior Administrator RNPs/Expert Committees
**Eléonore Piémont**, Administrator EUROCORES
**Dr. Farzam Ranjbaran**, Science Officer EUROCORES
**Catherine Werner**, Senior Administrator RNPs

Front row: Eléonore Piémont, Antonella di Trapani, Catherine Lobstein, Marie Clifford; Second Row: Thibaut Lery, Nathalie Geyer, Patrick Bressler, Catherine Werner; Third Row: Carole Mabrouk, Chantal Durant, Farzam Ranjbaran

# Forthcoming Meetings

## December 2007

- EuroDYNA / SONS: Round Table Meeting
  4-5 December 2007 – Lisbon (PT)
- PSI-K: Workshop Towards reality in nanoscale materials
  *www.esf.org/psi-k*
  5-7 December – Lapland (FI)
- PSI-K: 2-d Workshop on ab initio phonon calculations
  *www.esf.org/psi-k*
  6-8 December – Cracow (PL)
- Research Conference on Water Interfaces in Physics, Chemistry and Biology
  *www.esf.org/conferences/07225*
  8-13 December – Obergurgl (AT)
- FoNE: Workshop on Quantum Transport, Magnetic Nanodevices and Spintronics
  *http://fone-cuma07.na.infm.it/*
  9-13 December – Naples (IT)
- ESSC: Core Group meeting
  *www.esf.org/essc*
  12 December – Paris (FR)
- SPECT: Last Steering Committee meeting
  *www.esf.org/spect*
  15 December – Vienna (AT)
- FANAS: Second Review Panel Meeting (ranking),
  17-18 December – Strasbourg (FR)

## January 2008

- AMaMeF: Third Bachelier Colloquium on Stochastic
  *www.esf.org/amamef*
  6-13 January – Metabief (FR)
- HCAA: Geometric and Stochastic Methods in Geophysical Fluid Dynamics
  *www.esf.org/hcaa*
  7-11 January – Bremen, Germany
- ESSC: 35th Plenary meeting
  *www.esf.org/essc*
  10-11 January – Brussels (BE)
- PSI-K: Progress in Computational Electronic Structure Theory
  *www.esf.org/psi-k*
  10-12 January – Juelich (DE)
- AMaMeF: 7th Winter School on Mathematical Finance
  *www.esf.org/amamef*
  21-23 January – Lunteren (NL)
- MISGAM: Integrability in AdS/CFT
  *www.esf.org/misgam*
  29-31 January – Utrecht (NL)

## February 2008

- AMaMeF: Workshop on 'Actuarial and Financial Mathematics Workshop: Interplay between Finance and Insurance'
  *www.esf.org/amamef*
  7-8 February – Brussels (BE)

## March 2008

- NUPECC: Plenary Meeting
  *www.esf.org/nupecc*
  7-8 March – Madrid (ES)
- FoNE – INSTANS: 4th Capri Spring School on Transport on Nanostructures
  30 March-5 April 2008 – Capri (IT)

**Standing Committee Meetings 2008**

- 27th Standing Committee Meeting,
  18 April, Madrid, Spain
- 28th Standing Committee Meeting,
  17 October, Strasbourg, France

**2008 Round Table Meeting with Member Organisations (Engineering)**
12-13 June

**Highlights** is edited and published by the ESF-PESC unit with contributions from scientists participating in PESC activities.
For more details of PESC activities see www.esf.org/pesc
Editors of this edition: Patrick Bressler, Marie Clifford, Antonella di Trapani and Farzam Ranjbaran
Feedback, inquiries or questions should be sent to pesc@esf.org

The European Science Foundation (ESF) provides a platform for its Member Organisations to advance European research and explore new directions for research at the European level.
Established in 1974 as an independent non-governmental organisation, the ESF currently serves 75 Member Organisations across 30 countries.

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