

PRESS RELEASE

Towards a New Future for European Nanoscience



24th May 2005

An exciting innovation to promote collaboration between Nanoscience researchers in Europe is being developed by the *Nanoquanta* Network of Excellence, in which [INSTITUTION] is a partner.

Nanoquanta, an international collaboration part-funded by the European Union's Framework Programme Six, will create a permanent European Theoretical Spectroscopy Facility (ETSF) on the lines of the synchrotron facilities successfully shared by researchers across Europe.

Dr Lucia Reining, CNRS Research Director of the École Polytechnique in Paris, says that "over the last two decades, European research and training networks have increasingly contributed to the development of scientific communities. In order to share this benefit more widely between scientists and with society, we have to find new forms of working together. The ETSF will be a major help for us to answer this challenge."

The project builds on a 15-year collaboration between a number of prominent Condensed Matter Theory groups in Europe. Their scientific work focuses on the properties of electronic excited states in matter, particularly nanostructures, as well as nanoelectronics and the energetics of atomic motion on the nanometre scale.

Many of the theoretical approaches and computational solutions which are commonly used in the framework of calculations of electronic excitations from first principles have been developed in this network. The ETSF concept will attempt to meet the challenge of bringing understanding of these techniques to a wider community.

Until now, support for such work by the EU and national organisations has concentrated on self-contained, fixed-term research projects and networks with no permanent opportunity for other researchers to benefit from the new theoretical and computational developments. The ETSF concept has been devised to ease and encourage this kind of collaboration between researchers.

Like a synchrotron, the ETSF will be a professionally-managed 'knowledge centre' in which expertise, theory and the associated software will be employed in different ways according to the interests and background of users.

At its core will be a number of collaborating research groups, some specialising in theory development, others in the development of software. The ETSF will also build a broad and federal community of research groups working on similar topics.

Users of the facility will be a much larger and varied group, composed of researchers from the public or private sector wishing to benefit from developments in the field of electronic excitations.

The ETSF will also provide long-term specialised training for users and for doctoral students, as well as producing Masters-level modules. Martin Stankovski, a doctoral student at the University of York, says that "Nanotechnology has enormous potential for the industry, but deeper theoretical knowledge of the science involved is often missing in the broader research communities, especially in the private sector. With the ETSF we have the opportunity to get the experience and knowledge of our research out where it will be of direct use."

Notes for Editors

Further information

- For local enquiries, contact the press office from which you received this release.
- For general information about *Nanoquanta*, see <http://www.cmt.york.ac.uk/nanoquanta/>.
- For information about the FP6 funding programme and the Network of Excellence 'instrument', see <http://www.cordis.lu/fp6/whatisfp6.htm>.

Partners in the Nanoquanta Network

1. University of York (Department of Physics).
2. Fritz-Haber-Institut, Berlin (Theory Department).
3. Freie Universität, Berlin (Department of Physics).
4. Friedrich-Schiller-Universität, Jena (Institut für Festkörpertheorie und Optik).
5. Université Catholique de Louvain (Unité de Physico-Chimie et de Physique des Matériaux).
6. Lunds Universitet (Department of Solid-State Theory).
7. Universit degli Studi di Milano (Department of Physics).
8. Laboratoire des Solides Irradiés (Paris)¹.
9. Istituto Nazionale per la Fisica della Materia (Department of Physics, University of Rome 'Tor Vergata').
10. Universidad del País Vasco / Euskal Herriko Unibertsitatea (San Sebastián; Facultad de Químicas and Donostia International Physics Center).

Network Coordinator: Professor Rex Godby, University of York.

Deputy Coordinator: Dr Lucia Reining, Laboratoire des Solides Irradiés.

Network Administrator: Mr Tony Patman, University of York.

Topics of the Nanoquanta Network

Integration

- Establishing the Infrastructure of the ETSF.
- Training and Reach-Out
- External relations
- Society issues (to develop a strategy concerning social issues for young scientists)

Scientific

- Isolate a Zero-Dimensional Structure and Conquer its Environment
- One-dimensional Systems and their Composites
- Computing Total Energy and Excited States at Surfaces and Interfaces
- Fundamental Knowledge for Advanced Materials
- Integration of theory and code developments

¹ The Laboratoire des Solides Irradiés is a joint research laboratory of the Centre National de la Recherche Scientifique, the Commissariat à l'Énergie Atomique and the École Polytechnique.

Nanoquanta External Funding Sources

- **European Union:** Sixth EU Framework Programme for Research and Technological Development.
- **Belgium:** Fonds National de la Recherche Scientifique.
- **France:** Centre National de la Recherche Scientifique, Commissariat à l'Énergie Atomique, École Polytechnique (Palaiseau).
- **Germany:** Deutsche Forschungsgemeinschaft , Max-Planck-Gesellschaft, Bundesministerium für Bildung und Forschung, Österreichischer Forschungsfonds.
- **Italy:** Istituto Nazionale per la Fisica della Materia, University of Rome 'Tor Vergata'.
- **Spain:** Ministerio de Educación y Ciencia; Centro Superior de Investigaciones Científicas (CSIC); Donostia International Physics Center (DIPC), Universidad del País Vasco.
- **United Kingdom:** Engineering and Physical Sciences Research Council.