

RESEARCH CONFERENCE ON 'ADVANCING FRONTIERS OF OPTICAL AND QUANTUM EFFECTS IN CONDENSED MATTER'

12 - 15 May 2004

Miramare, Trieste, Italy

The Abdus Salam International Centre for Theoretical Physics (ICTP), Trieste, Italy, will organize a Conference on the Advancing Frontiers of Optical and Quantum Effects in Condensed Matter, to be held in Trieste from 12 to 15 May 2004. The Conference is co-sponsored by Elsevier Publishing Co.

DIRECTORS: **A. PINCZUK** (Columbia University, New York, U.S.A.)
V. AGRANOVICH (University of Texas, Dallas, U.S.A.)

LOCAL ORGANIZER: **E. TOSATTI** (SISSA/ICTP, Trieste, Italy)

Optical and quantum effects that extend to the world of nanostructures, atomic imaging, inelastic X-ray scattering, and many other phenomena, constitute key subjects that cover some of the most dynamic areas in condensed matter science. This Conference is meant as a forum where significant advances, both experimental and theoretical, will be discussed at their state of the art. Keynote lecturers, world-class authorities in the core topics of the Conference, will introduce their research with a pedagogical effort addressed to younger and less experienced researchers, in the full spirit of the ICTP. The Conference will honor Elias Burstein (University of Pennsylvania, Emeritus), a founding father of studies of optical and quantum effects in solids, and a staunch friend and believer of ICTP and of its role in the international science scene.

Studies of optical and quantum effects comprise some of key segments of contemporary condensed matter sciences. The Conference will cover recent studies of novel classical and quantum effects that emerge in optics, the exploration of physical phenomena in biological systems, the development of advanced fabrication and measurement methods at the nanoscale and single molecule levels, etc. These studies create breakthroughs that expand the frontiers of fundamental sciences and revolutionize the state-of-the-art of leading technologies.

This Conference will bring together scientists that are playing key roles in these studies, with the goal of debating the most recent developments in expanding areas of fundamental and applied research.

Among key **topics** to be debated are recent developments in:

Nanotubes
Nanoscale organic systems
Novel Molecular Systems
Quantum wires and Dots
Quantum Fluids
Novel Optical Responses

PRELIMINARY LIST OF INVITED SPEAKERS:

G. ABSTREITER* (Technische Universität München)
J.M. CALLEJA PARDO (Universidad Autonoma de Madrid)
M. CARDONA (Max-Planck-Institut für Festkörperforschung, Stuttgart)
A.J. HEEGER (University of California at Santa Barbara)
S. JOHN (University of Toronto)
L.V. KELDYSH* (P.N. Lebedev Institute of Physics, Moscow)
E.J. MELE (University of Pennsylvania, Philadelphia)
E.E. MENDEZ* (State University of New York, Stony Brook)
J. MENENDEZ (Arizona State University, Tempe)
D.L. MILLS (University of California at Irvine)

E. MOLINARI* (Universita' di Modena e Reggio Emilia, Modena)
J.E. MOOLJ* (Delft University of Technology)
M.A.G.J. ORRITT* (Leiden University)
V. PELLEGRINI (Scuola Normale Superiore, Pisa)
L.P. PITAEVSKII* (Universita' di Trento)
G. SCOLES (Scuola Internazionale Superiore di Studi Avanzati, Trieste)
D.W. SNOKE (University of Pittsburgh)
A.K. SOOD (Indian Institute of Science, Bangalore)
K. TAKAYANAGI (Tokyo Institute of Technology)
C. TEJEDOR (Universidad Autonoma de Madrid)
J.P. TOENNIES* (Max-Planck-Institut für Strömungsforschung, Göttingen)
S. USHIODA (Tohoku University, Sendai)
C. WEISBUCH (Ecole Polytechnique, Palaiseau)
R. WIESENDANGER (Universität Hamburg)

*) to be confirmed

PARTICIPATION

Scientists and students from all countries which are members of the United Nations, UNESCO or IAEA may attend the Conference. As it will be conducted in English, participants should have an adequate working knowledge of this language. Although the main purpose of the Centre is to help research workers from developing countries, through a programme of training activities within a framework of international cooperation, a limited number of students and post-doctoral scientists from developed countries are also welcome to attend.

As a rule, travel and subsistence expenses of the participants should be borne by the home institution. Every effort should be made by candidates to secure support for their fare (or at least half-fare). However, limited funds are available for some participants who are nationals of, and working in, a developing country, and who are not more than 45 years old. Such support is available only for those who attend the entire activity. There is no registration fee.

The **Application Form** is obtainable from the ICTP WWW server (activity Home Page): <http://agenda.ictp.trieste.it/agenda/current/fullAgenda.php?email=0&ida=a03402> (which will be constantly up-dated) or from the activity Secretariat. It should be completed and returned (not via e-mail) before **22 February 2004** to:

Conference on: "Optical and Quantum Effects in Condensed Matter" (smr.1612)
the Abdus Salam International Centre for Theoretical Physics
Strada Costiera 11, 34014 Trieste, Italy.

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ICTP Home Page: <http://www.ictp.trieste.it/>

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DEADLINE

for requesting participation

22 February 2004