

“ETTORE MAJORANA” FOUNDATION and CENTRE FOR SCIENTIFIC CULTURE
INTERNATIONAL SCHOOL OF QUANTUM ELECTRONICS

51st Course: SECOND MEDITERRANEAN INTERNATIONAL PHOTOACOUSTIC & PHOTOTHERMAL
WORKSHOP: FOCUS ON BIOMEDICAL AND NANOSCALE IMAGING AND NDE

ERICE-SICILY: 19 – 26 APRIL 2012

DIRECTOR OF THE CENTRE: A. ZICHICHI

DIRECTORS OF THE SCHOOL: A.N. CHESTER - S. MARTELLUCCI

DIRECTORS OF THE COURSE: R. LI VOTI - A. MANDELIS

Dear colleague,

we are now able to give you the list of the invited speakers of the “*Second Mediterranean International Workshop on Photoacoustic & Photothermal Phenomena: Focus on Biomedical and Nanoscale Imaging, and NDE*” that will be held at the Center Ettore Majorana EMFCSC in Erice (Sicily, Italy), in the period April 19-26, 2012. All the information and the program can be found on the website at <http://w3.uniroma1.it/photoacoustic-photothermal/>.

We are also pleased to inform you that there are still a few places left to attend and present your work at the Workshop. For this purpose the application deadline has been **extended to March 27th 2012**.

Participants are encouraged to present their own results in the field. Special oral sessions will be scheduled for participant presentations during or following the lecturers' talks

PURPOSE OF THE WORKSHOP

The aim of the workshop is to bring together scientists, clinicians, engineers, technology developers and users who are involved or interested in “Photoacoustic and Photothermal Science”, in the wonderful atmosphere of the old pre-mediaeval monasteries of the Center Ettore Majorana in Erice, in the middle of the Mediterranean Sea.

This Foundation and Center for Scientific Culture has a long tradition in the organization of Summer Schools, Workshops and International Conferences, covering all branches of Science, in a tradition similar to the Gordon Research Conferences. In fact, the idea to organize the *Mediterranean International Workshops on Photoacoustic & Photothermal Phenomena* arose so as to fill the vacuum left from the cancellation of the well-known biennial Gordon Research Conferences in the same disciplines.

The Workshop intends to bring together a group of invited leading scientists developing current “hot” and growing areas of our field and participants who are active researchers, users, entrepreneurs and technologists wishing to become involved.

The Workshop organized with invited talks, oral presentations and poster sessions will cover the following thematic subjects:

Session A: Biomedical and Biological PA & PT (Chair: A. Mandelis)

1. Instrumentation design, software and signal generation techniques for biomedical photoacoustics and imaging.
2. Clinical applications of biomedical photoacoustics
3. Microscopy, spectroscopy and endoscopy
4. Animal imaging
5. Dyes, nanoparticles and other contrast agents
6. Biothermophotonics and biomedical photothermal methodologies
7. Biological photoacoustics and photothermics

Session B: Nanoscale Heat Transfer and Imaging (Chairs: S. Volz and G. Tessier)

8. Ultrafast thermoelastic phenomena
9. Thermal and elastic properties on the nanoscale
10. Picosecond photoacoustics
11. Phonon Transport

Secretariat of the Centre: Via Guarnotta 26 - 91016 Erice - Italy -Tel. +39 0923 869133 -Telefax +39 0923 869226 - e-mail: hq@emcsc.ccsem.infn.it

Secretariat of the School: Prof. S. Martellucci, Engineering Faculty - Università di Roma “Tor Vergata”

Via del Politecnico 1 - 00133 Roma - Italy - Tel. +39 06 72597206 - Telefax +39 06 72597207 - e-mail: smart@uniroma2.it

Secretariat of the Course: Prof. R. Li Voti - Università di Roma - La Sapienza - Via Scarpa 16, 00161 Roma - Italy

Tel.: +39-06-49916540 - Fax: +39-06-44240183 - e-mail: WorkshopErice@uniroma1.it

International School of Quantum Electronics: • Physical and Technical Measurements with Lasers - 1971 • Non-linear Optics and Short Pulses - 1972 • Laser Frontiers Short: Wavelengths and High Power - 1973 • Cooperative Phenomena in Multi-component Systems - 1974 • Molecular Spectroscopy and Photochemistry with Laser - 1975 • Physics and Technology of Free Electron Lasers - 1980 • Integrated Optics Physics and Applications - 1981 • Analytical Laser Spectroscopy - 1982 • Laser Applications to Biology and Medicine - 1983 • Optical Phase Conjugation - 1984 • Progress in Microemulsions - 1985 • Optical Fiber Sensors - 1986 • Laser Science and Technology - 1987 • Nonlinear Optics and Optical Computing - 1988 • Optoelectronics for Environmental Sciences - 1989 • Laser Systems for Photobiology and Photomedicine - 1990 • Phase Transitions in Liquid Crystals - 1991 • Laser Applications for Mechanical Industry - 1992 • Advances in Integrated Optics - 1993 • Biomedical Optical Instrumentation and Laser-assisted Biotechnology - 1995 • Diffractive Optics and Optical Microsystems - 1996 • Global Automotive Technology Senior Management Briefing - 1997 • Optical Sensors and Microsystems - 1997 • Excimer Laser for Fusion and Industrial Applications - 1997 • Advances in Optoelectronics for Environmental Monitoring - 1998 • Observational Database and Mechanisms of Climate Change - 1998 • Bose-Einstein Condensates and Atom Lasers - 1999 • Laser beam and optics characterization - 2000 • Nanoscale linear and non-linear optics - 2000 • Atoms, solids and plasmas in super-intense laser fields - 2000 • Global Automotive Laser Applications - 2001 • Optical Coatings - 2001 • Free d guided optical beams - 2002 • Quantum Information Processing - 2003 • Spectroscopic techniques for materials, environment and cultural heritage - 2003 • VLSI Photonics - 2003 • Optical Chemical Sensors - 2004 • Molecular Physics and Plasmas in Hypersonics - 2005 • Photonics Metamaterials - 2005 • Matter in Super-Intense Laser Fields - 2005 • Matter in Super-Intense Laser Fields - 2006 • Advances on Nanophotonics II - 2007 • Optical Biosensors and Biochips for Clinical Applications - 2008 • Atoms and Plasmas in Super-Intense Laser Fields - 2009 • First Mediterranean International Workshop on Photoacoustic & Photothermal Phenomena - 2010 • Matter in Super-Intense Laser fields 2011



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Session C: Non Destructive Evaluation & Testing (Chairs: R. Li Voti and A. Mandelis)

12. Infrared Thermography and Thermophotonic Imaging
13. Non-destructive testing and industrial applications
14. Depth profiling of materials and inverse problems
15. Semiconductors, Photovoltaics, MEMS, NEMS, and phononic bandgap materials
16. Environmental sensors, biosensors, new instrumentation, and methodology

Session D: Thermophysical Properties (Chair: C. Glorieux)

17. Complex fluids, phase transitions and glass transitions
18. Spectroscopy, analytical chemistry, nonlinear optics and photochemistry
19. Thermophysical and thermodynamic properties using PA & PT

LIST OF INVITED SPEAKERS

Olivier Chapuis - CNRS - INSA Lyon, France

*Heat Conduction in Nanostructures Investigated with Electrical Means.
A Comparison with Optical Techniques*

Dorin Dadarlat - Institute for Isotopic and Molecular Technology, Romania

Recent Developments in the Photopyroelectric Calorimetry of Condensed Matter

Ariane Deniset - Université Paris-Sud, France

When AFM met IR: Nanospectroscopy AFMIR for subcellular imaging

Rinat Essenaliev - University of Texas Medical Branch, TX, USA

Optoacoustic Platform for Noninvasive, Continuous Monitoring of Multiple Physiologic Parameters

Shirang Manohar - University of Twente, The Netherlands

Photoacoustic Breast Imaging: the Twente experience

Osamu Matsuda - Hokkaido University, Japan

Time-resolved two-dimensional imaging of GHz surface acoustic waves in phononic crystals and structures based on them

Arantza Mendioroz - University of the Basque Country UPV/EHU

Internal heat sources reconstruction: an approach to defect characterization from vibrothermography data

Fulvio Mercuri - Università di Roma "Tor Vergata", Italy

Active infrared thermography applied to the study of Cultural Heritage

Michel Orrit - Leiden University, The Netherlands

Photothermal Spectroscopy of Single Gold Nanoparticles

Guenther Paltauf - Karl-Franzens Univ. Graz, Austria

Focusing acoustic elements for photoacoustic imaging

Amir Rosenthal - Helmholtz Zentrum, Munich, Germany

Advances in multispectral optoacoustic tomography

Vladimir Zharov - University of Arkansas for Medical Sciences, USA

Photoacoustic flow cytometry for early diagnosis of cancer, infections and cardiovascular diseases

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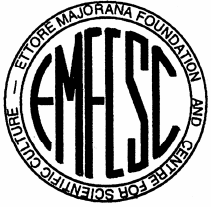
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CONFERENCE FEE

The Conference fee is 1000 Euro for each participant and 700 Euro for accompanying persons. The fee will cover the registration, accommodations (for the whole period April 19-26, 2012), all meals including the social dinner, and the transfers from the Airports (Trapani or Palermo) to the Conference site in Erice and vice versa. For your convenience we remind you that Trapani Airport is served by the low cost company Ryanair (see <http://www.ryanair.com/it>). Both Palermo and Trapani airports are served also by Alitalia (see <http://www.alitalia.com/>) and other companies. If you need more assistance you may also contact a local travel agent at giuliana.levantino@collageturismo.it

FURTHER DETAILS and APPLICATION

Because the time to the deadline is short, in order to submit the application to attend the Workshop you are kindly asked to send at your earliest convenience, before **March 27th** a short email to the conference Secretariat at WorkshopErice@uniroma1.it indicating:

- 1) Name and affiliation of the participant
- 2) Kind of presentation you wish for: poster presentation, oral presentation, none of them.

In order to complete the registration the Secretariat will kindly ask you to fill the following simple forms also downloadable on <http://w3.uniroma1.it/photoacoustic-photothermal/>,

- 3) Personal data form
- 4) 1- page abstract according to the abstract template form

Participants are requested to pay their fees **in advance** before **March 27th** by bank transfer. Exceptionally the fee might be paid in Erice, upon registration but in cash, or in travellers cheques, or with Eurocheques only. For the details visit the web site <http://w3.uniroma1.it/photoacoustic-photothermal/> or contact the Secretariat at WorkshopErice@uniroma1.it

The program of the Workshop and the complete details can be found on the website at <http://w3.uniroma1.it/photoacoustic-photothermal/>. Please note that according to the rules of EMFCSC the first day (April 19th) is scheduled to welcome the participants while the last day (April 26th) is for the transfer to the airports. All the lectures and the oral presentations will effectively start from April 20th to April 25th.

Looking forward to seeing you in Erice

Sincerely yours, the organizers

Roberto Li Voti
Sapienza Università di Roma

Andreas Mandelis
University of Toronto

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