



INTERNATIONAL SCHOOL OF QUANTUM ELECTRONICS

2nd Mediterranean International Workshop on Photoacoustic & Photothermal Phenomena FOCUS on BIOMEDICAL, NANOSCALE IMAGING and NON DESTRUCTIVE EVALUATION

ERICE-SICILY: APRIL 19-26 - 2012

Directors of the Workshop: R. LI VOTI and A. MANDELIS

Sponsored by: • Italian Ministry of Education, University and Scientific Research • Sicilian Regional Government
Sapienza Università di Roma - Thermal Nanoscience and Nanoengineering CNRS European Network - FLIR - EOS – SIOF



SESSIONS & TOPICS

The workshop intends to cover different thematic sessions:

- A) Biomedical and Biological PA & PT (Chair: **A.Mandelis**)
- B) Nanoscale Heat Transfer and Imaging (Chairs: **S.Volz** and **G.Tessier**)
- C) Non Destructive Evaluation & Testing (Chairs: **R. Li Voti** and **A.Mandelis**)
- D) Thermophysical Properties (Chair: **C.Glorieux**)

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 Palttauf** - 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

PURPOSE OF THE WORKSHOP

The aim of the workshop is to bring together all scientists, technology developers and technology users who are investigating or exploiting optically and electromagnetically excited acoustical and thermal phenomena for the investigation of a large variety of material properties and applications. The wealth of photoacoustic and photothermal (PA/PT) topics indicate that this field has developed a broad range of tools for fundamental and applied research. PA/PT research has reached a mature state, with an established position in measurement technology and materials characterisation and future progresses are guaranteed by the close synergy with advances in laser and measurement technology. This second workshop acknowledges the explosive growth of biomedical photoacoustics and tissue imaging, and the presence of an ever growing biomedical photoacoustics research community around the world and in Europe, in particular. It also acknowledges the significant and growing contributions of photoacoustic and photothermal non-destructive evaluation / characterization to nanoscale and other advanced materials (with connections to biomedical imaging by use of nanoparticles). 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

LOCATION & HISTORY

The conference site is the «Ettore Majorana» Foundation and Centre for Scientific Culture (EMFCSC) in Erice – Italy (see <http://www.ccsem.infn.it/>) EMFCSC has a long tradition in the organization of Schools, Workshops and International Conferences, covering all branches of Science. EMFCSC is situated in the old pre-mediaeval city of Erice where 3 monasteries (one of which was the residence of the Viceroy of Sicily during the XIV and XV Centuries) provide an appropriate setting for high intellectual endeavor. Erice is a historic town in Sicily, Italy. It is located on top of Mount Erice, at around 750m above sea level, overlooking the city of Trapani, the low western coast towards Marsala the dramatic Punta del Saraceno and Capo san Vito to the north-east, and the Aegadian Islands on Sicily's north-western coast. In Erice you can admire the Castle of Venus, the Cyclopean Walls (~800 B.C.) and the Gothic Cathedral (~1300 A.D.). Erice is at present a mixture of ancient and medieval architecture. Other masterpieces of ancient civilization are to be found in the neighborhood: at Motya (Phoenician), Segesta (Elymian), and Selinunte (Greek). On the Aegadian Islands — theatre of the decisive naval battle of the first Punic War (264-241 B.C.) — suggestive neolithic and paleolithic vestiges are still visible: the grottoes of Favignana, the carvings and murals of Levanzo. Splendid beaches are to be found at San Vito Lo Capo, Scopello, and Cornino, and a wild and rocky coast around Monte Cofano.

CONFERENCE FEE

The Conference fee is 1000 Euro for participants, 700 Euro for accompanying persons. The fee covers the registration, the accommodation, all meals (for the period April 19-26), the social events, and the transfer from the airports of Trapani or Palermo to the conference site in Erice. (For further information visit <http://w3.uniroma1.it/photoacoustic-photothermal/>).

APPLICATION and FURTHER DETAILS

The deadline for the applications has been extended to **March 27th, 2012**. Each participant is kindly asked to send the following info by email:
1) Name and affiliation of the participant
2) Option: poster presentation, oral presentation, none of them.
The application should be submitted to the Workshop Secretariat at WorkshopErice@uniroma1.it. The Secretariat will reply by email providing all the requested informations to complete the registration. For further information visit <http://w3.uniroma1.it/photoacoustic-photothermal/>.

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EMFCSC PRESIDENT AND DIRECTOR OF THE CENTRE: A. ZICHICHI