



ETTORE MAJORANA FOUNDATION AND CENTRE FOR SCIENTIFIC CULTURE
1963–2023
60th ANNIVERSARY OF ACTIVITIES



INTERNATIONAL SCHOOL OF SOLID STATE PHYSICS

83rd Course

INFRARED AND TERAHERTZ QUANTUM

ERICE-SICILY: 25 JUNE – 1 JULY 2023

Sponsored by the: • Italian Ministry of Education, University and Scientific Research • Sicilian Regional Government

PROGRAMME AND LECTURERS

Quantum sources

Quantum detectors

Physics of intersubband related low-dimensional systems

Light-matter interaction at the nanoscale

Nano-structured materials

2D quantum materials

Near field quantum optics and scanning probe microscopy

Plasmonics with semiconductors and other materials

Topological photonics

- S. BONETTI, University of Venice, IT
- D. BURGHOFF, University of Notre Dame, US
- P. CHEVALIER, Harvard University, Cambridge, MA, US
- P. DE NATALE, CNR-INO, Rome, IT
- Q. HU, MIT, Boston, MA, US
- M. JARRAHI, University of California, Los Angeles, CA, US
- T. KAMPFRATH, Fritz-Haber Institut, DE
- S. LAW, Penn State University, PA, US
- A. LEITENSTORFER, University of Konstanz, DE
- D. MARRIS-MORINI, Université Paris Saclay, FR
- R. MORANDOTTI, INRS, Montreal, CA
- A. VASANELLI, Ecole Normale Supérieure, Paris, FR
- O. GRAYDON, Nature Photonics, London, UK

PURPOSE OF THE COURSE

The theme of The Infrared and Terahertz Quantum Workshop (ITQW) is the exploration of novel physical phenomena in quantum- and electromagnetically-engineered photonic materials in the infrared and terahertz frequency ranges and the exploitation of these phenomena to create novel photonic devices and applications. This spectral region is particularly interesting in this respect, owing to relaxed fabrication tolerances, low loss of metals, controllable plasmonic and nonlinear optical properties of semiconductors and 2D materials, the presence of phonon resonances in the dielectric constant, and the ability to engineer intersubband transitions in semiconductor heterostructures.

APPLICATIONS

Persons wishing to attend the Course should apply in writing to the Director of the School:

Professor Miriam Serena VITIELLO
NEST - CNR-Istituto Nanoscienze and
Scuola Normale Superiore, Piazza San Silvestro 12
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They should specify: i) full name(s), address, age, nationality; ii) academic qualifications and degree; iii) present position and place of work; iv) current research activity; v) list of publications.

• PLEASE NOTE

Participants must arrive in Erice no later than 7 p.m. on 25 June 2023.

POETIC TOUCH

According to legend, Erice, son of Venus and Neptune, founded a small town on top of a mountain (750 metres above sea level) more than three thousand years ago. The founder of modern history — i.e. the recording of events in a methodic and chronological sequence as they really happened without reference to mythical causes — the great Thucydides (~500 B.C.), writing about events connected with the conquest of Troy (1183 B.C.) said: «After the fall of Troy some Trojans on their escape from the Achaei arrived in Sicily by boat and as they settled near the border with the Sicilians all together they were named Elymi: their towns were Segesta and Erice.»

This inspired Virgil to describe the arrival of the Trojan royal family in Erice and the burial of Anchises, by his son Aeneas, on the coast below Erice. Homer (~1000 B.C.), Theocritus (~300 B.C.), Polybius (~200 B.C.), Virgil (~50 B.C.), Horace (~20 B.C.), and others have celebrated this magnificent spot in Sicily in their poems. During seven centuries (XIII-XIX) the town of Erice was under the leadership of a local oligarchy, whose wisdom assured a long period of cultural development and economic prosperity which in turn gave rise to the many churches, monasteries and private palaces which you see today.

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 neighbourhood: 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: all at less than one hour's drive from Erice.

More information about the «Ettore Majorana» Foundation and Centre for Scientific Culture can be found on the WWW at the following address:
<http://www.ccsem.infn.it>