«ETTORE MAJORANA» FOUNDATION AND CENTRE FOR SCIENTIFIC CULTURE

TO PAY A PERMANENT TRIBUTE TO ARCHIMEDES AND GALILEO GALILEI, FOUNDERS OF MODERN SCIENCE AND TO ENRICO FERMI, THE "ITALIAN NAVIGATOR", FATHER OF THE WEAK FORCES

INTERNATIONAL SCHOOL OF ATOMIC AND MOLECULAR SPECTROSCOPY

36th Workshop: *NEW DEVELOPMENTS IN ADVANCED LUMINESCENCE MATERIALS*

ERICE-SICILY: 25 – 31 JULY 2018

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

PROGRAMME AND LECTURERS

Er-doped oxysulfide nanophosphors for temperature sensing
• R. BALDA, Universidad del País Vasco UPV/EHU, Bilbao, ES

Bologna stone: From alchemy to persistent luminescence
• M. BETTINELLI, University of Verona, Verona, IT

Spectroscopic properties of rare earth ion doped 20Al(PO3)3-80LIF glasses as fast scintillators for neutron detection
• G. BOULON, Université Claude Bernard Lyon 1, Villeurbanne, FR

Theory of radiative lifetime of an activator ion in the presence of a metallic surface
• J. COLLINS, Wheaton College, Norton, MA, US

Novel white-light emission in solids
• B. DI BARTOLO, Boston College, Chestnut Hill, MA, US

Luminescence quenching by electron and hole ionization in the lanthanides, the transition metals, and the s^2-elements
• P. DORENBOS, Delft University of Technology, Delft, NL

Nd-based stoichiometric random lasers: Performance and applications
• J. FERNÁNDEZ, Universidad del País Vasco UPV/EHU, Bilbao, ES

Energetic structure and radiative processes in luminescence materials by high hydrostatic pressure spectroscopy
• M. GRINBERG, Gdańsk University, Gdańsk, PL

Why we should care when scientists are cheating
• H. GUDEL, University of Bern, Bern, CH

Transparent optical ceramics based on rare earth ion-doped cubic tungstate/molybdate matrices
• M. GUSIK, University of Wrocław, Wroclaw, PL

The Search for high efficiency energy conversion nanocrystals: A personal account
• X. LIU, National University of Singapore, Singapore, SG

Understanding luminescence quenching: Tale of a dozen quenching mechanisms
• A. MEIJERINK, Utrecht University, Utrecht, NL

Variable charge state of fast emitting rare earth dopants: An optimization tool in wide band-gap oxide scintillators
• M. NIKL, Institute of Physics, ASCR, Prague, CZ

Energy transfer mechanism and concentration quenching effects in the emission modulation of Ba_2SiO_4 matrix simultaneously doped with Eu^{3+} and Tb^{3+}
• A.M. PIRES, FCT–UNESP, Sao Paulo, BR

New insight into spontaneous and stimulated emission
• M. POLLNAU, University of Surrey, Guildford, UK

Afterglow mechanisms in scintillators
• C. RONDA, Phillips Research Eindhoven, Eindhoven, NL

Development of Mn^{4+} based phosphors for LED
• A.M. SRIVASTAVA, G.E. Optics Materials, New York, NY, US

Engineering lanthanide nanoparticles towards biophotonic applications
• L. SUN, Peking University, Beijing, CN

Peculiar white light emission from matter – possible mechanisms and applications
• W. STREK, Institute of Low Temperature and Structure Research, Wroclaw, PL

New insight into luminescent materials: from C-dots to Fe^{3+} halides
• R. VALIENTE, University of Cantabria, Santander, ES

May Pr^{3+} offer a breakthrough in luminescence thermometry?
• E. ZYCH, University of Wroclaw, Wroclaw, PL

PURPOSE OF THE WORKSHOP

Research on luminescent materials is growing very quickly due to the emergence of new important applications (clean energy, luminescent nano-powders, LED displays, thermo-luminescence, bio-medicine, new scintillators, hybrid luminescent materials, etc.) requiring a detailed and precise understanding of the mechanisms responsible for the luminescence processes (excited state dynamics, energy and electron transfer, non-radiative relaxation, radiative transition probabilities, energy flow, etc). For these reasons, the interplay between applications, new experimental techniques and understanding of the fundamental processes is timely and important, and will be the scope of the Workshop. In addition to pursuing the merely scientific goals, the meeting will aim at designing initiatives that foster a closer collaboration between industrial and academic researchers and finding ways by which we may create a greater awareness on the part of faculty advisors of the great potential of luminescence spectroscopy as a theme for scientific education of graduate and undergraduate students.

APPLICATIONS

The participants should plan to arrive the afternoon of July 25 and leave the morning of July 31, 2018. The meeting is limited to invited participan.

PLEASE NOTE

Participants must arrive in Erice on July 25, no later than 7 p.m.

More information about the other activities of the "ETTORE MAJORANA" FOUNDATION AND CENTRE FOR SCIENTIFIC CULTURE can be found on the WWW at the following address:
http://www.ccsem.infn.it

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 Sicanians 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 Anchise, by his son Enea, 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.

M. BETTINELLI – J. COLLINS
DIRECTORS OF THE WORKSHOP

B. DI BARTOLO
DIRECTOR OF THE SCHOOL

A. ZICHICHI
PRESIDENT EMFCSC