



«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 CRYSTALLOGRAPHY

55th Course:

MOLECULAR CRYSTAL ENGINEERING

ERICE-SICILY: 28 MAY – 5 JUNE 2021

Sponsored by the: • European Crystallographic Association • International Union of Crystallography •
• Italian Ministry of Education, University and Scientific Research • Sicilian Regional Government

PROGRAMME AND LECTURERS

IR and Raman spectroscopy of solid state forms

• A.P. AYALA, Universidade Federal do Ceará, BR

In-situ analysis of phase transitions / Guest-ion recognition

• L.J. BARBOUR, Stellenbosch University, ZA

Introduction and historical perspective

• D. BRAGA, Università di Bologna, IT

Hydrates and solvates

• D.E. BRAUN, Universität Innsbruck, AT

Multicomponent crystals / SS-MNR spectroscopy

• M.R. CHIEROTTI, Università degli Studi di Torino, IT

Photo-crystallography / Optoelectronic and non linear optics

• J.M. COLE, University of Cambridge, UK

Computational methods in crystal engineering

• G.M. DAY, University of Southampton, UK

Crystal forms in industries / Organic semiconductors

• P. ERK, BASF, Ludwigshafen, DE

Crystal nucleation and growth / Solid state in thin films

• Y.H. GEERTS, Université Libre de Bruxelles, BE

Thermodynamics of polymorphs

• U. J. GRIESSER, Universität Innsbruck, AT

Single crystal XRD / Mechanical properties of molecular crystals

• B. KAHR, New York University, NY, US

Crystal morphology and size engineering

• T. LEYSENS, Université Catholique de Louvain, BE

Molecular solid solutions

• M. LUSI, University of Limerick, IE

Crystal forms in crystal engineering

• L. MAINI, Università di Bologna, IT

Polymorph screening in industry

• S. REUTZLER-EDENS, Eli Lilly and Company, Indianapolis, IN, US

Powder XRD: phase analysis and structure determination

• R. RIZZI, CNR-IC, Bari, IT

Thermodynamics of salts and cocrystals

• N. RODRIGUEZ-HORNEDO, University of Michigan, MA, US

Organic nanocrystals

• B. RYBTCHINSKI, Weizmann Institute of Science, IL

Pigments

• M.U. SCHMIDT, Universität Frankfurt, DE

Supramolecular interactions / Crystals as intellectual property

• J.W. STEED, Durham University, UK

Electron microscopy and diffraction

• A. STEWART, University of Limerick, IE

Thermal analysis / Amorphous phases

• L.S. TAYLOR, Purdue University, IN, US

PURPOSE OF THE COURSE

Crystallization experiments are still difficult to control and the development of crystal forms with superior properties remains a challenging task that requires specific synthetic, analytical and computational skills. Recent scientific advances highlight that a thorough understanding of intermolecular interactions is the key to modern crystal engineering and the conception of relations between structure and properties. Such insights are increasingly exploited to design and produce new materials with desired functions. Successful examples of this approach include pharmaceutical, agrochemical, separation and optoelectronic research, at a fundamental and applied level. The 2021 Course at the International School of Crystallography in Erice will focus on molecular crystal engineering. The program will highlight the relevance of this discipline from both, academic and industrial perspectives. Prominent scientists in the field will illustrate theoretical and practical aspects of crystal engineering in lectures, workshops and hands-on trainings. Additionally, the significance of crystal forms in different areas of chemical industry will be discussed, with particular emphasis on synthetic strategies and the design of desired material properties.

APPLICATIONS

Interested candidates should register by 30th November 2020 using the form available at the URL <http://erice2021.azuleon.org> or by writing to the Executive Secretary of the International School of Crystallography:

Dr. Annalisa Guerri
University of Florence
50019 Sesto Fiorentino, Italy
Tel: +39.055.4573429
email: annalisa.guerri@unifi.it

Please include the following information in your application: i) Your full name(s), age, gender, citizenship; ii) Your postal address, phone, fax, electronic mail; iii) Your present academic position and scientific interests; iv) The title or abstract of a scientific contribution to the poster session(s) which might be included in the programme.

Applicants may be able to apply for partial financial support. Please visit www.crystalalice.org to view the full eligibility criteria. Young researchers should include in their application a list of no more than five scientific publications that they have authored, and a letter of recommendation from their supervisor or from a senior scientist, that justifies any support that the researcher requests. In order to reflect the multi-disciplinary nature of the Course, priority will be given to applicants who have an appropriate scientific discipline, a good publication rate and a strong correspondence between their current research interest and the topics covered by the School.

More information about the International School of Crystallography can be found on the WWW at the following address: <http://www.crystalalice.org>

U.J. GRIESSER – M. LUSI – L. MAINI
DIRECTORS OF THE COURSE

T.L. BLUNDELL
DIRECTOR OF THE SCHOOL

A. ZICHICHI
EMFCSC PRESIDENT

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 Achaean 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>

PLEASE NOTE

Participants must arrive in Erice no later than 8 p.m. on 28th May 2021.