



«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 MATERIALS FOR SUSTAINABLE DEVELOPMENT AND ENERGY

## 2nd Course: *MACROMOLECULAR SCIENCE FOR ADVANCED AND SUSTAINABLE MATERIALS*

ERICE-SICILY: 10 – 14 JULY 2022

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

### PROGRAMME AND LECTURERS

*Making and Unmaking Polymers by Controlled Radical Polymerization*  
• A. ANASTASAKI, ETH Zurich, CH

*Macromolecular Photocatalysts in Reversible-Deactivation Radical  
Polymerization*  
• B. SUMERLIN, University of Florida, Gainesville, FL, US

*Molecular engineering in four dimensions: A mechanistic approach to  
dynamic polymer networks*  
• J. KALOW, Northwestern University, Evanston, IL, US

*Toward precision hybrid protein-polymer conjugates: Synthesis and  
applications*  
• K. VELONIA, University of Crete, GR

*Automation in Polymer Synthesis: Challenges and Opportunities*  
• T. JUNKERS, Chemistry Monash University, Clayton, AU

*Closed-loop sustainability in polymers: Leveraging biomass and plastics  
waste feedstocks*  
• T.H. EPPS, University of Delaware, Newark, DE, US

*Getting into shape - precision self-assembly*  
• R. O'REILLY, University of Birmingham, UK

*Brushes by grafting to: The true and the false*  
• M. LAUS, University of East Piemonte, Alessandria, IT

*Revaluing food protein waste*  
• R. MEZZENGA, ETH Zurich, CH

*Exploring the use of biomass and plastic waste as sustainable source for  
polymer production*  
• H. SARDON, University of Basque Country, Leioa, ES

*Biomimetic polymer vesicles: From bioactive nanomedicines to functional  
artificial cells*  
• S. LECOMMANDOUX, Université de Bordeaux, FR

*Functional polymers for organic/printed optoelectronics*  
• B. VOIT, Technische Universität Dresden, DE

### PURPOSE OF THE COURSE

The purpose of the Course is to exhaustively cover the state-of-the-art and the future perspectives of Macromolecular Science for Advanced Materials for applications in smart and sustainable products.

These intriguing organic based systems, able to fulfil the growing demands of multifunctional materials, are realized via a fine macromolecular design, by using innovative processing methods and technologies to boost specific features keeping in sight the main social challenges to be faced.

In light of this, the topics covered by this Course will concern all the different scientific aspects related to the formulation of polymer-based and hybrid systems, tailored to environmental sustainability (water and air remediation), energy (production and storage) and healthcare (sensors, body protection, rehabilitation and biomedical applications).

The industrial point of view will be also take into account.

### APPLICATIONS

Persons wishing to attend the Course are requested to write to the Director of the Course:

Dr. Sabrina Carola Carroccio  
CNR-IPCB Catania Unit  
Via P. Gaifami 18  
95126 CATANIA, IT  
Email: [sabrinacarola.carroccio@cnr.it](mailto:sabrinacarola.carroccio@cnr.it)

### PLEASE NOTE

Participants must arrive in Erice no later than 12 a.m. on 10th July 2022.

### 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>