



International School of Bioelectromagnetism "Alessandro Chiabrera"

**13th Course - "Bioelectromagnetic systems for innovative High
Performance Sensing and Interaction strategies"**

Co-organized with  **BioEM**

Erice, May 2-7, 2026

PROGRAMME

May 2 - Saturday

arrival and accommodation

May 3 - Sunday

8.30 - 8.45 - Welcome to Participants, Brief Overview of The School and practical details (School Directors)

8.45 – 9.00 -Introduction and Course opening (Course Director/s)

9.00 – 9.15 - Introduction of participants and the topics they work on

9.15 – 10.00 - Introductory lesson – The multidisciplinary approach and best laboratory practices (M.R. Scarfi, CNR-IREA, Naples, Italy)

10.00 – 10.45 – Coffee break and Poster hang up

Photonic sensing – Transduction mechanisms & Molecular recognition elements

10.45 – 11.30 - Overview of optical fibers and planar waveguides (L. Zeni, University of Campania Luigi Vanvitelli)

11.30 - 12.15 - Planar waveguides-based devices (L. Zeni, University of Campania Luigi Vanvitelli)

Photonic Biosensors/1

12.15 – 13.00 - Biological & biomimetic interfaces for sensing (O. Soppera, Université de Haute-Alsace – France)

13.00 -15.00 – Lunch

15.00 – 15.45 - Optical Sensing strategies for detection at a single molecule level (N. Cennamo, University of Campania Luigi Vanvitelli; M. Pesavento, University of Pavia)

15.45 – 16.15 - Coffee break

16.15 -17.00 - Photonic sensors for environmental and medical applications (O. Soppera, Université de Haute-Alsace, France)

17.00 -17.45 Nanophotonics and photonic sensing in several application fields (F. Dell'Olio, Polytechnic of Bari, Italy)

May 4 - Monday

Photonic Biosensors/2

8.30 -9.15 - Devices based on linear and nonlinear optics for biosensing (F. Dell'Olio, Polytechnic of Bari, Italy)

9.15 – 10.00 – From laser-tissue interaction to spectroscopic diagnosis (P. Jorge, INESC-TEC, Portugal)

10.00 – 10.30 Coffee Break

10.30 – 11.15 – Resonance-based optical platforms for biosensing (P. Jorge, INESC-TEC, Portugal)

11.15 – 12.00 - Hands-on experience

12.00 - 14.00 - Lunch

Terahertz sensing

14.00 – 14.45 - Terahertz radiation: generation and detection (G.P. Gallerano, formerly at ENEA, Frascati)

14.45 – 15.30 - Terahertz imaging: an overview (I. Catapano, CNR-IREA, Naples)

15.30 – 16.00 Coffee Break

16.00 – 17.00 - Security gates (I. Catapano, CNR-IREA, Naples)

May 5 - Tuesday

Systems for exposure and therapy

8.30 – 9.15 – Electroporation: from basic research to clinical applications (M-P. Rols, CNRS, Toulouse, France)

9.15 – 10.00 - Microwave laboratory devices (A. Paffi, Univ. of Rome, La Sapienza)

10.00 – 10.30- Coffee Break

Microwave systems for sensing and interaction

10.30 – 11.15 - Microwaves for viruses' inactivation (P. Bia, ELT Group, Italy)

11.15 – 12.00 - Microwave dielectric spectroscopy for biological analysis and EM fields interactions (K. Grenier, CNRS, Toulouse, France)

12.00 -12.45 - Microwave Imaging for Biomedical Applications: From Models to Inverse Problems (R. Solimene, University of Campania Luigi Vanvitelli)

Excursion with lunch box

May 6 - Wednesday

Microwave exposure and radiation

8.30 – 9.15 – Miniature microwave exposure systems (K. Grenier, CNRS, Toulouse, France)

9.15 – 10.00 – Biological effects of microwaves (M-P. Rols, CNRS, Toulouse, France)

10.00 – 10.30 Coffee Break

Wearable and ingestible devices for sensing and energy transfer and harvesting

10.30 – 11.15 - Microwave wearable devices for energy transfer and harvesting (A. Costanzo, University of Bologna, Italy)

11.15 – 12.00 - Theoretical foundations and design strategies for wireless implantable devices (D. Nikolayev, University of Rennes, France)

12.00 – 12.45 - Microwave wearable devices (M. Spirito, Technical University, Delft, The Netherlands)

12.45 - 14.45 – Lunch

14.45 – 17.30 - Poster Section

20.00 - Course Dinner and price for the best poster

May 7 - Thursday

9.00 – 10.30 - On-going researches and projects (all speakers)

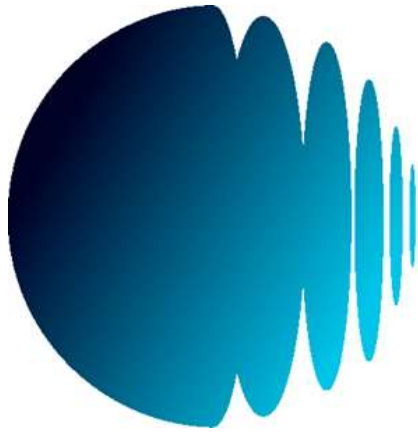
10.30 – 11.00 Coffee Break

11.00 – 12.00 - Conclusions with questionnaire on quality of the course (all participants)

Lunch

Departure

We wish to thank our sponsors



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Interazioni tra Campi Elettromagnetici e Biosistemi