



School on: "Surface Science and Applications"

25-27 November 2024

Workshop on: "Advanced Materials for the Energy Transition"

28-29 November 2024

Hotel Canadian • Strada Statale, 17 – L'Aquila

The Organizing Committee is glad to announce:

Three prizes for young researchers under 35 years (consisting of 400 euros and a plate), awarded on the basis of their scientific production in fields related to advanced materials and energy transition. The prizes will be assigned as follows: one for Chemistry, one for Physics of Matter, and one for Engineering. These prizes are co-financed by INSTM and other supporting institutions.

The relevant topics include, but are not limited to:

- Materials for energy storage and conversion
- Materials for sustainable energy production
- Gas sensing technologies
- Materials for desalination and water treatment
- Advanced surface treatments and coatings
- Materials for enhancing energy efficiency in industrial processes and infrastructures

In addition to these, there will also be prizes for the best oral presentation and the best poster presentation, each consisting of a plate. These awards are separate from the Career Achievement Awards, which will be given to leading Italian scientists in the field of materials science in recognition of their lifetime contributions to the discipline.

To submit an abstract, participants must first register for the congress.

IMPORTANT DATES

Abstract submission Deadline: **30th Oct 2024**

Acceptance Notification: **within 3rd Nov 2024**

ABSTRACT PRESENTATION GUIDELINES:

Abstracts shall be written in English and total length should not be more than one A4 page.

Please the template downloadable on <https://susameet.com/abstract-submission/> and send it by e-mail to susameet2024@susameet.com no later than **Oct 30th 2024**.

Authors are requested to indicate in their submitted abstract their availability for a presentation.

Contributed talks will be selected by the Scientific Committee based on the scientific quality and on the relevance with respect to topics and objectives of the conference.



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25-27 November 2024
L'Aquila, Italy

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Programme



LEARNING OBJECTIVES

This in-person meetings aim at providing a forum on new trends in materials science and engineering from the Italian community and beyond. The scope is to gather engineers, physicists, chemists, and materials scientists working on innovative materials and their applications. The scientific program will feature selected talks related to topics covering advanced materials and their applications in surface science and energy transition.

The School on **Surface Science and Applications** is designed to offer both theoretical insights and practical sessions, focusing on key concepts in surface science.

The topics will include:

- *Fundamentals of Surface Science;*
- *Innovations in coatings and surface treatments;*
- *Advanced characterization techniques for surface analysis;*
- *Fabrication and processing techniques specific to surface engineering.*

The **Workshop on Advanced Materials for the Energy Transition** will bring together experts and researchers to discuss recent advancements in materials science for energy-related applications.

The workshop will cover:

- *Novel materials for energy storage and conversion;*
- *Catalytic materials for sustainable energy production;*
- *Gas sensing technologies for environmental monitoring and industrial applications;*
- *Advanced materials for desalination and water treatment;*
- *Innovations in renewable energy systems;*
- *Materials aimed at enhancing energy efficiency.*

SCIENTIFIC COMMITTEE

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Rita Di Massimo, University of L'Aquila



Monday, 25 November 2024

12.00 – 13.30 Welcome lunch

OPENING

13.30 – 14.30 **Introduction to Surface Science**

This section would lay the groundwork for understanding the physical and chemical phenomena that occur at surfaces and interfaces. It would include lectures on the history, scope, and fundamental principles of surface science.

Antonio Politano

SESSION I **Characterization Techniques**

The following modules would focus on the various techniques used in surface science, explaining their principles, capabilities, and limitations.

14.30 – 15.30 XPS (X-ray Photoelectron Spectroscopy)
Unveiling surface chemistry through core-level analysis.

Gianluca D'Olimpio

15.30 – 16.30 ARPES (Angle-Resolved Photoemission Spectroscopy)
Insights into the electronic band structure of materials.

Federico Bisti

16.30 – 16.45 *Coffee Break*

16.45 – 17.45 STM (Scanning Tunneling Microscopy)
Atomic-scale imaging and manipulation.

Anna Sgarlata

17.45 – 18.45 EELS (Electron Energy Loss Spectroscopy)
Analysis of vibrational and electronic excitations.

Antonio Politano



Tuesday, 26 November 2024

08.45 – 09.45 AFM (Atomic Force Microscopy)
Nanoscale topography and property mapping.
Gianluca D'Olimpio

09.45 – 10.45 HAS (Helium Atom Scattering) and Molecular Beams
Surface structure and dynamics studies.
Daniel Farias

10.45 – 11.15 *Coffee break*

SESSION II **Fabrication and Processing Techniques**
An exploration of methods used to prepare and manipulate surfaces and nanostructures.

11.15 – 12.15 Solution Processing
Techniques for surface modification and functionalization.
Lorenzo Caputi

12.15 – 13.15 Nanofabrication
Creating nanostructures for various applications.
Doron Naveh

13.15 – 14.30 *Light Lunch*

SESSION III **Application-Driven Modules**
These sections would cover the practical applications of surface science in various fields.

14.30 – 15.30 Spectroscopies for Catalysis: *Advanced methodologies revealing catalyst properties and catalytic processes.*
Andrea Lazzarini

15.30 – 16.30 Electrocatalysis
Processes at the electrode-electrolyte interface for energy applications.
Maya Bar Sadan

16.30 – 17.30 Photoelectrocatalysis
Harnessing light to drive catalytic reactions.
Danil W. Boukhvalov



Wednesday, 27 November 2024

- 09.00 – 10.00 **Gas Sensing**
Surface interactions for detection of gases.
Eduard Llobet
- 10.00 – 11.00 **Surface Plasmons**
Exploitation of electronic excitations at surfaces for sensing and photonic devices.
Carlo Rizza
- 11.00 – 11.20 *Coffee break*
- 11.20 – 12.20 **Thermoplasmonic Solar Desalination**
Utilizing solar energy for water desalination through surface plasmon resonance.
Sergio Santoro
- 12.20 – 12.40 **ROUND TABLE**
Interdisciplinary Approaches and Future Directions
Antonio Politano, Lorenzo Caputi
- 12.40 – 14.00 *Light Lunch*
- PRACTICAL SESSION**
- 14.00 – 19.00 Hands-on training where participants will gain experience with the discussed techniques and applications



Workshop on: Advanced Materials for the Energy Transition

Thursday, 28 November 2024

- 08.40 – 09.00 **Opening and Career Achievement Award**
- 09.00 – 11.00 **Gas sensing technologies for environmental monitoring and industrial applications**
Keynote Speech by:
Eduard Llobet, Rovira i Virgili University
And Selected presentations
- 11.00 – 11.30 *Coffee break*
- 11.30 – 13.30 **Advanced Materials for Catalysis**
Keynote Speeches by:
Daniel Farias, Universidad Autónoma de Madrid
Maya Bar-Sadan, Ben-Gurion University of the Negev
Danil W. Boukhvalov, Nanjing Forestry University
Gianluca D'Olimpio, University of L'Aquila
And Selected presentations
- 13.30 – 14.40 *Light Lunch*
- 14.40 – 15.30 **Poster Session**
- 15.30 – 15.50 **Advanced Materials for Water Treatment**
Keynote Speech by:
Sergio Santoro, University of Calabria
- 15.50 – 16.30 Selected presentations
- 16.30 – 16.50 *Coffee break*
- 16.50 – 18.30 Selected presentations



Friday, 29 November 2024

08.30 – 09.40

Advanced Materials for Energy Storage

Keynote Speeches by:

Andrea Lamberti, Politecnico di Torino

Doron Naveh, Bar-Ilan University

Lorenzo Caputi, University of Calabria

09.40 – 11.00

Selected presentations

11.00 – 11.30

Coffee break

11.30 – 13.30

Selected presentations

13.30 – 14.45

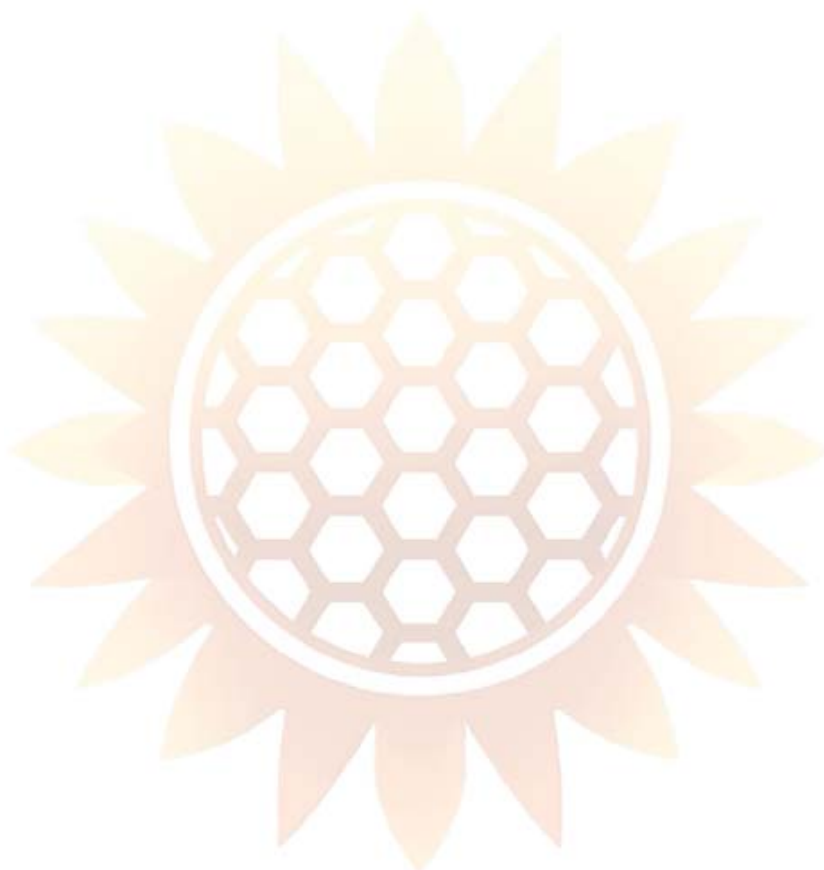
Light Lunch

14.45 – 15.00

Best Poster Award

15.00 – 15.30

Best Oral Presentation and Awards to Emerging Young Researchers





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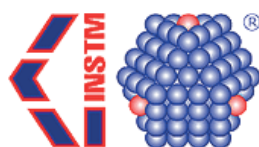
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INFORMATION

VENUE

Hotel Canadian • Strada Statale, 17 – 67100 Località Casermette, L'Aquila

REGISTRATION

Registration for the event should be done at the following link:

<https://susameet.com/>

For further assistance, please contact the organizing secretariat:

susameet2024@centercongressi.com

REGISTRATION FEES (22% VAT included)

School Registration*	€ 550,00
School Accommodation Package**	€ 270,00
Workshop Registration***	€ 550,00
Workshop Accommodation Package****	€ 220,00
School and Workshop registration Bundle*****	€ 1000,00
Full Event Accommodation*****	€ 490,00
Social Dinner on November 28th	€ 70,00

*Includes: access to all School sessions, materials, 3 coffee breaks, and 3 lunches.

**Includes: accommodation for the duration of the School IN 25/11 OUT 27/11 and 2 dinners.

***Includes: access to all Workshop sessions, materials, 3 coffee breaks, and 2 lunches.

****Includes: accommodation for the duration of the Workshop IN 27/11 OUT 29/11 and 1 dinner.

*****Includes: access to all School sessions, materials, 6 coffee breaks, 5 lunches.

*****Includes: accommodation for the duration of the School and Workshop and 3 dinners.