



# 2025 GIORNATE SCIENTIFICHE

## SESSIONE ORALE

CNR | DSCTM

During the conference, there will be an exhibition of scientific and educational software, videogames and boardgames created by DSCTM researchers.

### Day 1 - martedì 21 ottobre 2025 - AULA CONVEGNI

Time	Name	Title	Topic	Inst.	Min.
12:30	Welcome light lunch				
13:15	Opening and Introduction   President CNR - Andrea LENZI, Director of DSCTM - Lidia ARMELAO				15
CHAIR 1:					
13:30	DAVIDE ALTAMURA	Multiscale characterization of Nano/Biomaterials by Synchrotron-like Laboratory X-ray Microsource	Advanced Materials	IC	15
13:45	EMANUELA SARACINO	Advanced Materials and 3D Technology Bridging Basic and Applied Research	Life Science	ISOF	15
14:00	ADOLFO LULIANELLI	Membrane engineering in the H2 strategy: from carbon capture to electrification	Energy	ITM	15
14:15	ANNA COSTA	Nano In Micro Technologies as Practical Tools For SSbD Implementation	Green Chemistry	ISSMC	15
14:30	ROSANNA RIZZI	Designing the Future of Diagnostics and Therapy: Synthetic and Physiological Approaches	Life Science	IPCF	15
14:45	LIBERA VITIELLO	Enhancing biopolymer performance for sustainable applications: hybridization, recyclability, and degradability	Advanced Materials	IPCB	15
CHAIR 2:					
15:00	SIMONE BONATI	Highly deformable metal structure fabricated through laser powder bed fusion	Advanced Materials	ICMATE	15
15:15	FRANCESCO ROSI	Unveiling the fate of plastic materials in Cultural Heritage: A new perspective	Cultural Heritage	SCITEC	15
15:30	MARTA MARIA NATILE	Towards a More Sustainable and Circular Production of Hydrogen	Energy	ICMATE	15
15:45	MARCO FALZETTI	Director of APRE – Agency for the Promotion of European Research   “Towards FP10”	- INVITED -		45
16:30	Coffee break				30

The Future of Chemistry  
and Materials is Sustainable

21-23  
ottobre  
CNR di Bologna



# 2025 GIORNATE SCIENTIFICHE

## SESSIONE ORALE

CNR | DSCTM

During the conference, there will be an exhibition of scientific and educational software, videogames and boardgames created by DSCTM researchers.

### Day 1 - martedì 21 ottobre 2025 - AULA CONVEGNI

Time	Name	Title	Topic	Inst.	Min.
CHAIR 3:					
17:00 (Flash)	TD PNRR – 5 min each				30
	VASILIKI BENEKOU	Advanced Scanning Probe Microscopy for 2D materials	Advanced Materials	ISOF	5
	CARLO NAZARENO DIBENEDETTO	Beyond Nano Building Blocks: 3D Self-Assembled Perovskite and Quantum Dot Supercrystals	Advanced Materials	IPCF	5
	FRANCESCA FEDELE	Phase Seeding: a method for AI-assisted crystal structure determination	Advanced Materials	IC	5
	ANNA PIRAS	Development of QM-derived force fields for the simulation of molecules adsorbed in porous materials	Advanced Materials	ICCOM	5
	SERENA REGINA	Innovative Polyvinylidene Fluoride/Alkali Lignin Membranes for Biocatalytic Membrane Reactor	Advanced Materials	ITM	5
	SERGIO SAPIENZA	Post-Impact Collision Detection on a Collaborative Robot by Fast Strain Measurements	Advanced Materials	ISMN	5
17:30	JESSICA GROPPI	Developing Molecular Devices and Materials with Photoactive Compounds	Energy	ISOF	15
17:45	TOMMASO MECCA	Functionalized Cryogel for Environmental Chemistry and Applications	Green Chemistry	ICB	15
18:00	LEONARDA LIOTTA	Hydrogen and e-fuels synthesis by CO <sub>2</sub> as feedstock: opportunities and challenges	Energy	ISMN	15
18:15	FIORENZA FANELLI	Atmospheric pressure plasma surface engineering for environmental applications and catalysis	Advanced Materials	ICCOM	15
18:30	FRANCESCA BOCCACCINI, GABRIELLA DI CARLO	Sustainable advanced materials for cultural heritage conservation: from design to museum applications	Cultural Heritage	ISMN	15
18:45	End of day				
19:00	GIUNTA DSCTM				60





# 2025 GIORNATE SCIENTIFICHE

## SESSIONE ORALE

CNR | DSCTM

During the conference, there will be an exhibition of scientific and educational software, videogames and boardgames created by DSCTM researchers.

### Day 2 - mercoledì 22 ottobre 2025

Session A		GREEN-CHEMISTRY-ENERGY-MODELLING-CULTURAL HERITAGE	Conference rooms 215 - 1st floor		
Time	Name	Title	Topic	Inst.	Min.
CHAIR 4:					
08:45	CARMELO DRAGO	Chemical Conversion of Waste Oils and Fats into Sustainable Biofuels	Green Chemistry	ICB	15
09:00	BEATRICE CAMPANELLA	Welcome to the (Chemical) Jungle: TLC-SERS for Unravelling Synthetic Dye Mixtures from the 1950s	Cultural Heritage	ICCOM	15
09:15	NICOLA COMISSO	Oxidation of Ethylene Glycol in Alkaline Media on Palladium-Rhodium Electrodes	Energy	ICMATE	15
09:30	ROSSELLA LABARILE	Photobiological Hydrogen Production by Rhodobacter: Toward Sustainable Energy Solutions	Green Chemistry	IPCF	15
09:45	FILIPPO AGRESTI	Composite materials for energy efficiency and thermal storage in buildings	Energy	ICMATE	15
10:00	FRANCESCA SERVADEI	Co-valorisation of construction and demolition waste and basalt powder: improving sustainability in geopolymer materials	Green Chemistry	ISSMC	15
10:15	Coffee break + poster session				30
CHAIR 5:					
11:00	ENRICO FASTELLI	HSE & Facility Director, Racing Bulls   “Improving performance in a sustainable way: towards a net-zero production process for a F1 racing car”	- INVITED - “AULA CONVEGNI”		45
11:50	ILARIA CITRO	Advancing Dye-Sensitized Solar Cells: Utilizing Carbon Dots to Optimize Photoelectrode Sensitization and Increase PhotoelectroChemical Efficiency	Energy	IPCF	15
12:05	ELENA TOCCI	Membrane Engineering in the Era of Machine Learning	Modelling	ITM	15
12:20	Lunch + poster session				60
13:20	Photo   All participants meet in main hall for a group photo				10



# 2025 GIORNATE SCIENTIFICHE

## SESSIONE ORALE

CNR | DSCTM

During the conference, there will be an exhibition of scientific and educational software, videogames and boardgames created by DSCTM researchers.

### Day 2 - mercoledì 22 ottobre 2025

#### Session A

GREEN-CHEMISTRY-ENERGY-MODELLING-CULTURAL HERITAGE

Conference rooms  
215 - 1st floor

Time	Name	Title	Topic	Inst.	Min.
------	------	-------	-------	-------	------

#### CHAIR 6/7:

13:30	CLAUDIO EVANGELISTI	Supported mono- and bimetallic catalysts for hydrogen production by reforming processes	Energy	ICCOM	15
13:45	DANIELE MEGGIOLARO	Towards stable and efficient perovskite solar cells: a computational perspective	Modelling	SCITEC	15
14:00	NICOLA SANGIORGI	New multifunctional materials and approaches for solar supercapacitors	Energy	ISSMC	15
14:15	DARIO GIUFFRIDA	Sustainable SERS sensing for non-invasive Cultural Heritage diagnostics	Cultural Heritage	IPCF	15
14:30	SIMONE QUARANTA	Mining tailings for energy and environmental applications	Energy	ISMN	15
14:45	MARIA CAPORALI	Application of 2D black phosphorus in solar-driven hydrogen production	Energy	ICCOM	15
15:00	IVAN BASSANINI	Sustainable by Design: (Chemo)Enzymatic Pathways to APIs and Bioactive Small Molecules	Green Chemistry	SCITEC	15
15:15	TERESA POERIO	Micro- and Nano-plastics in Water: Monitoring and Treatment via Membrane Technologies	Green Chemistry	ITM	15
15:30	GIOVANNA LI PETRI	Cytrocell: a new high performing nanocellulose from Citrus	Green Chemistry	ISMN	15
15:45	Coffee break + poster session				45

#### CHAIR 8/9:

16:30	LUCIA RICCI	Degradation of (Bio)plastics in real vs simulated marine conditions: an experimental approach	Green Chemistry	IPCF	15
16:45	ANDREA MARCHIONNI	Recovery of Lithium for the Sustainability of Lithium-Ion Batteries (LIBs)	Energy	ICCOM	15
17:00	BARBARA VERCELLI	Non-covalent Functionalization of Carbon Quantum Dots: A Spectroscopic and Electrochemical Study	Green Chemistry	ICMATE	15

The Future of Chemistry  
and Materials is Sustainable

21-23  
ottobre  
CNR di Bologna





# 2025 GIORNATE SCIENTIFICHE

## SESSIONE ORALE

CNR | DSCTM

During the conference, there will be an exhibition of scientific and educational software, videogames and boardgames created by DSCTM researchers.

### Day 2 - mercoledì 22 ottobre 2025

Session A		GREEN-CHEMISTRY-ENERGY-MODELLING-CULTURAL HERITAGE	Conference rooms 215 - 1st floor		
Time	Name	Title	Topic	Inst.	Min.
17:15	FILIPPO BOSSOLA	Challenges and strategies to enhance the performances of nanostructured heterogeneous catalysts for the sustainable hydrogen production	Energy	SCITEC	15
17:30	SERGIO ARGENTO	Agrochemical Inputs Reduction in Horticulture to Enhance the Quality of the Agri-food Supply Chain	Green Chemistry/ Environment	ICB	15
17:45	MARCO AGNES	Cyclodextrin-based materials as multi-purpose supramolecular platforms	Green Chemistry	ISOF	15
18:00	DANIEL FORRER	Computational modelling of electrochemical reduction at metal porphyrin - modified electrodes	Modelling	ICMATE	15
18:15	ANNAROSA GUGLIUZZA	Engineered membranes for preventive conservation	Cultural Heritage	ITM	15
18:30	SARA MASSARDO	Stability and sustainability in perovskites air-electrodes for solid oxides cells	Energy	ICMATE	15
15:45	End of day				
20:30	Social Dinner   <i>Palazzo Gnudi Bologna</i>				

### Day 2 - mercoledì 22 ottobre 2025

Session B		ADVANCED MATERIALS-LIFE SCIENCE	Plenary room		
Time	Name	Title	Topic	Inst.	Min.
CHAIR 10:					
08:45	DA DEFINIRE				15
09:00	FABIO IANNOTTI	Integration of chemical and biomolecular strategies to decipher the role of natural and endogenous small molecules in rare diseases	Life Sciences	ICB	15

The Future of Chemistry  
and Materials is Sustainable

21-23  
ottobre  
CNR di Bologna



# 2025 GIORNATE SCIENTIFICHE

## SESSIONE ORALE

CNR | DSCTM

During the conference, there will be an exhibition of scientific and educational software, videogames and boardgames created by DSCTM researchers.

### Day 2 - mercoledì 22 ottobre 2025

Session B		ADVANCED MATERIALS-LIFE SCIENCE		Conference rooms 216 - 1st floor	
Time	Name	Title	Topic	Inst.	Min.
09:15	ANTONIO MAZZAGLIA	Supramolecular Nanomaterials based on Carbohydrates: from Self-Assembly to Smart Bio-Devices	Advanced Materials	ISMN	15
09:30	GIUSEPPINA SABATINO	Peptides as versatile tool for the surface functionalization of materials: graphene nanoparticles and high-entropy alloy	Life Sciences	IC	15
09:45	ELISA MARTELLA	A multimodal nano-based approach for cancer therapy: tumor microenvironment remodelling by photodynamic and immuno-therapies	Life Sciences	ISOF	15
10:00	MARIA ROSARIA RICCIARDI	Manufacturing of Composites Materials Casein - based. New frontiers for sustainability	Advanced Materials	IPCB	15
10:15	Coffee break + poster session				45
(CHAIR 5):					
11:00	ENRICO FASTELLI	HSE & Facility Director, Racing Bulls   “Improving performance in a sustainable way: towards a net-zero production process for a F1 racing car”	- INVITED - “AULA CONVEGNI”		45
CHAIR 11:					
11:45	CRISTINA D'ARRIGO	Extracellular vesicles as a platform for the detection and treatment of neurodegenerative diseases	Life Sciences	SCITEC	15
12:00	ALESSANDRA SCIDÀ	Laser-scribing of biodegradable poly (lactic acid)/graphene oxide composites for sustainable electrochemical sensors	Advanced Materials	ISOF	15
12:15	Lunch + poster session				45
12:30	Photo   All participants meet in main hall for a group photo				15
CHAIR 12/13:					
13:30	ANTONIO VINCI	Recent advances on Ultra-high Temperature Ceramic Matrix Composites	Advanced Materials	ISSMC	15
13:45	ANNA SANSONE	Capsaicin, Oleic Acid, and their combined treatment Differentially Modulate Lipidome profile and Cytokine Levels in HepG2 Cells	Life Sciences	ISOF	15

The Future of Chemistry  
and Materials is Sustainable

21-23  
ottobre  
CNR di Bologna





# 2025 GIORNATE SCIENTIFICHE

## SESSIONE ORALE

CNR | DSCTM

During the conference, there will be an exhibition of scientific and educational software, videogames and boardgames created by DSCTM researchers.

### Day 2 - mercoledì 22 ottobre 2025

Session B		ADVANCED MATERIALS-LIFE SCIENCE	Conference rooms 216 - 1st floor		
Time	Name	Title	Topic	Inst.	Min.
14:00	STEFANO ZAMPOLLI	Chemical sensors based on MEMS devices - on the boundary between chemistry, physics and engineering	Advanced Materials	ISMN	15
14:15	DANIELA AROSIO	Design and synthesis of a second generation of triazine-based PD-L1 inhibitors and dual action conjugates	Life Sciences	SCITEC	15
14:30	MIRKO FRAPPA	Eco-sustainable membrane preparation for improved MD/MCr processes	Advanced Materials	ITM	15
14:45	SONIA COVACEUSZACH	Targeting Siderophore-Mediated Iron Uptake in M. abscessus: A New Strategy to Limit the Virulence of Non-Tuberculous Myco-bacteria	Life Sciences	IC	15
15:00	CHIARA MOLINARI	Innovation from mining residues: sustainable building materials and jewellery	Advanced Materials	ISSMC	15
15:15	CLAUDIA FERRONI	Oxygenation, reprogramming and stem cell targeting: A thera-peutic triad against triple negative breast cancer - NANOALLIANCE	Life Sciences	ISOF	15
15:30	ANDREA ROSSIN	Metal-Organic Frameworks as versatile materials for wastewa-ter treatment and greenhouse gas mixtures adsorption-separation	Advanced Materials	ICCOM	15
15:45	Coffee break + poster session				45
CHAIR 14/15:					
16:30	ANNA MARIANO	Engineered osteoinductive biohydrogels for bone regeneration	Life Sciences	IPCB	15
16:45	CLAUDIA HONISCH	Oriented Synchrotron Radiation Circular Dichroism of antimicrobial peptides in model membranes	Life Sciences	ICB	15
17:00	MASSIMILIANO LABARDI	Electrical modes of the AFM: measurement of dielectric and piezoelectric properties of surfaces on the local scale	Advanced Materials	IPCF	15
17:15	GIOVANNI DAL POGGETTO	GPC Beyond Molecular Weight: A Look Inside the Architecture of Functional Polymers	Advanced Materials	IPCB	15

The Future of Chemistry  
and Materials is Sustainable

21-23  
ottobre  
CNR di Bologna



# 2025 GIORNATE SCIENTIFICHE

## SESSIONE ORALE

CNR | DSCTM

During the conference, there will be an exhibition of scientific and educational software, videogames and boardgames created by DSCTM researchers.

### Day 2 – mercoledì 22 ottobre 2025

Session B		ADVANCED MATERIALS-LIFE SCIENCE	Conference rooms 216 - 1st floor		
Time	Name	Title	Topic	Inst.	Min.
17:30	ILARIA SILVESTRI	Structural basis of selectivity in small molecules targeting galectins	Life Sciences	IC	15
17:45	MARIANNA PANNICO	Multifunctional Polydiacetylene Gold Colloids for Theranostic Applications	Life Sciences	IPCB	15
18:00	FEDERICO PUPILLI	Mg-hydroxyapatite nanoroads a new tool to improve intracellular bio-molecule delivery	Life Sciences	ISSMC	15
18:15	FRANCESCO ATTANASIO	Pleiotropic features of Semax, a Synthetic Regulatory ACTH-like Peptide, and its potential pharmaceutical applications	Life Sciences	IC	15
18:30	PAOLA PELUSO	Separation of Deuterated Isotopologues and Isotopomers of Amphetamine and Methamphetamine by liquid-phase chromatography	Life Sciences	ICB	15
18:45	End of day				
20:30	Social Dinner   Palazzo Gnudi Bologna				

### Day 3 – giovedì 23 ottobre 2025 – AULA CONVEGNI

Time	Name	Title	Topic	Inst.	Min.
CHAIR 16:					
09:00 (Flash)	TD PNRR- 5min each				30
	GIUSEPPE CESARE LAMA	Sustainability of Tailored Coatings and Composite Polyurethane Foams for Cultural Heritage Conservation	Cultural heritage	IPCB	5
	SIMONE BATTISTON	Optimizing Early-Stage Sustainability: Life Cycle Assessment in Materials Chemistry	Green Chemistry	ICMATE	5
	JACOPO PAINI	Strategic valorization of seaweeds: A cascading biorefinery approach for high-value oligosaccharide production	Green Chemistry	SCITEC	5

The Future of Chemistry  
and Materials is Sustainable

21-23  
ottobre  
CNR di Bologna





# 2025 GIORNATE SCIENTIFICHE

## SESSIONE ORALE

CNR | DSCTM

During the conference, there will be an exhibition of scientific and educational software, videogames and boardgames created by DSCTM researchers.

### Day 3 – giovedì 23 ottobre 2025 – AULA CONVEGNI

Time	Name	Title	Topic	Inst.	Min.
	SILVIA SFAMENI	Nanotechnological Innovation in Precision Agriculture: A New Paradigm in Agri-Food Waste Valorization and Resource Optimization	Green Chemistry / Environment	ISMN	5
	ELISABETTA CAMPODONI	Injectable composite biomaterials for 3D printed customised matrices for the bioengineering of advanced bone models in bioreactor systems	Life Sciences	ISSMC	5
	MARIA MONTICELLI	Phosphomannomutases in the mirror: from structural and biochemical divergence to small-molecule therapies in PMM2-CDG	Life Sciences	ICB	5
09:30	ALFREDO CASSANO	Integrated membrane operations for quality improvement and circular economy in agro-food applications	Green Chemistry	ITM	15
09:45	GUSEPPE CASSONE	Quantum effects, charge transfer, and electric fields: what matters in water	Modelling	IPCF	15
10:00	ANDREA LORENZONI	BIO-SUSHY: Multiscale Modelling Workflows for the Safe and Sustainable Substitution of PFAS	Green Chemistry	ISMN	15
10:15	SABRINA MORELLI	Membrane-based platforms for tissue engineering applications	Life Sciences	ITM	15
10:30	ROBERTO ZOBOLI	Professore Ordinario di Politiche Economiche, Università Cattolica del Sacro Cuore, Milano   "European Strategies and Policies for Critical Raw Materials"	- INVITED -		45
11:15	Poster Awards				10
11:30	Coffee break				30
CHAIR 17/18:					
12:00	MARIA LAURA DI LORENZO	EIC Pathfinder Challenge: A nature inspired thermal resistant food packaging is BORN	Green Chemistry	IPCB	15
12:15	ROCCO CALIANDRO	In situ/Operando Advanced Structural Characterization of smart materials for alternative energies	Advanced Materials	IC	15
12:30	RAFFAELLA SOAVE, RICCARDO DONNINI	Co.Science: connecting science to society by promoting the importance of research and innovation	Terza missione	SCITEC	15
12:45	ANNALISA MASI	Functional Nanomaterials and Nucleic Acids: A Synergistic Interaction for Diagnostics and Biomedical Applications	Life Sciences	IC	15

The Future of Chemistry  
and Materials is Sustainable

21-23  
ottobre  
CNR di Bologna



# 2025 GIORNATE SCIENTIFICHE SESSIONE ORALE

CNR | DSCTM

During the conference, there will be an exhibition of scientific and educational software, videogames and boardgames created by DSCTM researchers.

## Day 3 – giovedì 23 ottobre 2025 – AULA CONVEGNI

Time	Name	Title	Topic	Inst.	Min.
13:00	DANILO DI GENOVA	Is magma just a badly behaved glass? A materials science approach to volcanic eruptions	Advanced Materials	ISSMC	15
13:15	MARIA GRAZIA RAUCCI	Advancing Cancer Treatment and Tissue Regeneration through The regenerative Nanoplatfroms	Life Sciences	IPCB	15
13:30	ALESSIO DESSI	Organic light-responsive molecules for solar energy conversion	Energy	ICCOM	15
13:45	MARCELLO ZIACO	Mass Spectrometry-based technologies for functional imaging of small molecules	Life Sciences	ICB	15
14:00	Conference Closure   Forewell Light Lunch				

The Future of Chemistry  
and Materials is Sustainable

21-23  
ottobre  
CNR di Bologna





# 2025 GIORNATE SCIENTIFICHE SESSIONE ORALE

CNR | DSCTM

During the conference, there will be an exhibition of scientific and educational software, videogames and boardgames created by DSCTM researchers.

## INVITED SPEAKERS

### MARCO FALZETTI

Director of APRE – Agency for the Promotion of European Research



Master of Science in Aeronautical Engineering at Università degli Studi di Roma La Sapienza. He starts his professional research activity in 1990 at CSM where he acts as researcher, focusing on the application of Artificial Intelligence techniques in process modelling and control problems. Coordinator and responsible of numerous European Projects in the area of Iron and steelmaking, acts as Italian representative in various European Committees. In the period 1999-2003, works as National Detached Expert at the Research Directorate General of the European Commission in Brussels. In the material unit of the Directorate G, acts as scientific officer for the ECSC Steel Research programme and 5th Framework programme. In the period 2003-2015 works in CSM as Manager of EU Research Affairs, where he acts as manager of European programmes and international developments for Advanced Material in Centro Sviluppo Materiali and is responsible for EU R&D&I relationships and policies. From 1st January 2016 he is Director of APRE – Agency for the Promotion of European Research. He has launched the Alliance for Materials initiative (A4M), supported by the EU Commission, and he is acting as chairman of the Management Board of A4M. Chairman of EuMaT (The European Technology Platform on Advanced Engineering Materials and Technologies), member of many advisory boards and steering committees of different EU projects and initiatives. He is also member of the European Commission Advisory Group for the NMP-B part of H2020 programme.

### ENRICO FASTELLI

HSE & Facility Director Racing Bulls S.p.A.



Enrico Fastelli, who holds a degree in Architectural Engineering, began his professional career at Planning S.r.l., where he worked from 2006 to 2016 as a collaborator in executive design and project management. During this time, he contributed to numerous complex projects for major clients such as Ferrari, Bracco S.p.A., and Galotti S.p.A. In January 2017, he joined Ferrari S.p.A., reaching through the years the role of Head of Infrastructure and General Facilities. In this role, he managed infrastructure and facility projects with a strong focus on sustainability and Carbon Neutrality program. He implemented innovative energy systems, including fuel cells and biogas solutions, and coordinated with government authorities to obtain permits and ensure successful project execution. In 2022, Enrico Fastelli joined Scuderia AlphaTauri (now Racing Bulls S.p.A.) as HSE & Facility Director.

### ROBERTO ZOBOLI

Full Professor of Economic Policy, Catholic University, Milan



Roberto Zoboli is Full Professor of Economic Policy and teaches Economics of Natural Resources at the Catholic University, Milan. He is Corresponding Fellow of Accademia Nazionale Dei Lincei. Previously, he was a researcher at Nomisma S.p.A., Fondazione Cariplo per la Ricerca Scientifica, and the Research Office of Montedison S.p.A. For twelve years, he was a Research Director at the CNR (National Research Council), where he is currently a Research Associate at IRCrES - Institute for Research on Sustainable Economic Growth. He is a member of the Board of Directors of SEEDS - Sustainability, Environmental Economics and Dynamics Studies, an interuniversity research center that brings together environmental and innovation economists from twelve Italian universities. Since 2001, he has been a Task Leader in several Topic Centers of the EEA - European Environment Agency, currently at the ETC CE - European Topic Centre on Circular Economy and Resource Use (2022-2026).