

Winter Workshop on Materials for Energy

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PROGRAM

From January 27th to February 1st 2026
Hotel GrünerBaum
Brixen - Italy

Welcome!

It is with great pleasure that we announce the third edition of the Winter Workshop on Materials for Energy – wWME 2026, to be held in Brixen (BZ), Italy, from January 27th to February 1st.

The program will be composed by a combination of invited and contributed talks, given by established and early-career scientists.

The idea is to create a connection between simulations and experiments in the field of energy harvesting in a friendly atmosphere with lots of space for networking activities.

We look forward to seeing you in Brixen!

The Organizing Committee

Invited Speakers

Aldo Di Carlo (University of Roma "Tor Vergata", IT)
Alessandra Satta (CNR-IOM, IT)
Ana Belén Muñoz García (University of Napoli "Federico II", IT)
Annamaria Petrozza (IIT, IT)
Antonio Abate (University of Napoli "Federico II", IT)
Daniele Cortecchia (University of Bologna, IT)
Daniele Fazzi (University of Bologna, IT)
Daniele Meggiolaro (CNR-SCITEC, IT)
Dominika Lesnicki (University of Lorraine, FR)
Edoardo Mosconi (CNR-SCITEC, IT)
Enrico Ronca (University of Perugia, IT)
Federico Brivio (University of Padova, IT)
Ferdinando Costantino (University of Perugia, IT)
Francesca Brunetti (University of Roma "Tor Vergata", IT)
Francesca Nunzi (University of Perugia, IT)
Giovanna Bruno (University of Perugia, IT)
Ivan Rivalta (University of Bologna, IT)
Lorenzo Malavasi (University of Pavia, IT)
Luca Gregori (University of Perugia, IT)
Marco Affronte (University of Modena and Reggio Emilia, IT)
Mariachiara Pastore (CNRS, FR)
Maria Noelia Faginas Lago (University of Perugia, IT)
Mario Caironi (IIT, IT)
Matteo Calandra (University of Trento, IT)
Michele Pavone (University of Napoli "Federico II", IT)
Michele Saba (University of Cagliari, IT)
Simone Piccinin (CNR-IOM, IT)
Stefano Corni (University of Padova, IT)

Organizing Committee

Filippo De Angelis (University of Perugia, IT) (Chair)
Paola Delli Veneri (ENEA, IT)
Paolo Umari (University of Padova, IT)
Simona Fantacci (CNR-SCITEC, IT)
Federico Brivio (University of Padova, IT)

Beatrice Bizzarri (University of Perugia, secretary)
Olivia Bizzarri (CNR-SCITEC, secretary)
Giulia Marra (CNR-SCITEC, secretary)
Maria Letizia Merlini (University of Perugia, secretary)

Winter Workshop on Materials for Energy

January 27th - February 1st 2026

Day 1 - Tuesday, January 27th 2026

18:00 - 19:00	Welcome and Registration (Hotel GrünerBaum)
19:30 - 21:30	Welcome Dinner

Day 2 - Wednesday, January 28th 2026

Morning Session

08:50 - 09:00 **Opening by Filippo De Angelis and Simona Fantacci**

Invited Lectures

09:00 - 09:20 **Michele Saba**

"Ambipolar Transport and Doping in Halide Perovskites"

University of Cagliari, Italy

09:20 - 09:40 **Daniele Cortecchia**

"Structural and Molecular Engineering of Low Dimensional Perovskites"

University of Bologna, Italy

09:40 - 10:00 **Lorenzo Malavasi**

"Perovskites, Photocatalysis, Chirality: Cultivating Materials from Growth to Function"

University of Pavia, Italy

10:00 - 10:20 **Daniele Meggiolaro**

"Challenges and Strategies Towards Efficient Tin-Halide Perovskite Solar Cells: a Computational Perspective"

CNR-SCITEC, Italy

10:20 - 10:40

Edoardo Mosconi

“Computational Modeling of New Generation Materials for Photovoltaics and Photocatalysis”

CNR-SCITEC, Italy

Contributed Talks

10:40 - 10:50

Sofia Lerda

“Mechanistic Insights into Diels-Alder Stereoselectivity on Chiral Perovskites”

University of Perugia, Italy

10:50 - 11:00

Cesare Boriosi

“The Octahedral Tilting: Studying the Effect on Tin Halide Perovskites”

University of Perugia, Italy

11:00 - 11:40

Coffee Break

11:40 - 17:30

Networking

Afternoon Session

Invited Lectures

17:30 - 17:50

Ivan Rivalta

“Generating Molecules with Artificial Intelligence Without Databases”

University of Bologna, Italy

17:50 - 18:10

Antonio Abate

“Interface Engineering via Self-Assembled Monolayers (SAMs) for High-Efficiency Tin-Based Perovskite Solar Cells”

University of Napoli “Federico II”, Italy

18:10 - 18:30

Daniele Fazzi

“Static and Dynamic Disorder in Organic Mixed Ionic-Electronic Conductors”

University of Bologna, Italy

18:30 - 18:50

Francesca Brunetti

“Jump Into Space: How Perovskite Solar Cells Can Contribute To The New Space Economy”

University of Roma “Tor Vergata”

Contributed Talks

18:50 – 19:00

Chiara Corapi

“Modelling Ground and Excited-State Properties of Mechano-Luminochromic Copper Halide-Based Coordination Polymers”

University of Bologna, Italy

19:00 – 19:10

Marco Severi

“Hunting Elusive Polymorphs in Organic Semiconductors and Mixed Ionic Electronic Conductors »

University of Bologna, Italy

19:10 – 19:30	Poster Session
19:30– 21:30	Dinner

Day 3 - Thursday, January 29th 2026

Morning Session

08:50 - 09:00

Welcome Desk

Invited Lectures

09:00 – 09:20

Matteo Calandra

“Theoretical Modeling of Ultrafast Phase Transitions from the Femtosecond to the Picosecond Scale”

University of Trento, Italy

09:20 – 09:40

Simone Piccinin

“Sodium-Ion Storage in Hard Carbon”

CNR-IOM, Italy

09:40 – 10:00

Alessandra Satta

“Linking the Degradation of Colors in Paintings to Energy Applications: Charge Transfer and Spin Population in Prussian Blue”

CNR-IOM, Italy

10:00 – 10:20 **Ferdinando Costantino**
“Advanced Characterization and CO₂ Absorption Properties of Zr - and Al-MOFs Based on C₄ Linkers”
 University of Perugia, Italy

10:20 – 10:40 **Federico Brivio**
“Computational Methods for Semiconductor Technology”
 University of Padova, Italy

Contributed Talks

10:40 – 10:50 **Carlos Roberto Jacinto**
“Energy Decomposition-Driven Machine Learning Approaches for the Accurate Prediction of Reaction and Electronic Energies”
 University of Perugia, Italy

10:50 – 11:00 **Lorenzo Baldinelli**
“Leveraging Matrix Modularity to Tailor the Spin Structure of Molecular Qubits”
 University of Perugia, Italy

11:00 – 11:40	Coffee Break
11:40 – 17:30	Networking

Afternoon Session

Invited Lectures

17:30 – 17:50 **Mariachiara Pastore**
“HOMOs/LUMOs Engineering for Long-Lived Emissive Excited States in Fe(II) Complexes”
 CNRS, France

17:50 – 18:10 **Ana Belén Muñoz García**
“Advanced Modeling of Interfacial Charge Transfer and Reactivity in Energy Conversion Devices”
 University of Napoli “Federico II”, Italy

18:10 – 18:30 **Aldo Di Carlo**
“Sustainable Materials and Processes for Halide Perovskite Photovoltaics”
 University of Roma “Tor Vergata”, Italy

Contributed Talks

18:30 - 18:40

Francesca De Rossi

"Photocapacitors Based on Emerging Indoor Photovoltaics: Toward Battery-Free Smart Devices"

University of Roma "Tor Vergata", Italy

18:40 - 18:50

Francesca Canestra

"Impact of Structural Rigidity on Amplified Spontaneous Emission Properties of Alkylammonium Perovskites"

University of Bologna, Italy

18:50 - 19:00

Mario Ezequiel Perez

"Ab-Initio Calculations of Mass Spectra"

University of Perugia, Italy

19:00 - 19:30

Free Time

19:30 - 21:30

Social Dinner

Day 4 - Friday, January 30th 2026

Morning Session

08:50 - 09:00

Welcome Desk

GoPV Session

09:00 - 09:15

Paola Delli Veneri

"Innovative Materials for Tandem Solar Cells"

ENEA, Italy

09:15 - 09:30

Federica Florio/Andrea Lo Mastro

"Synthesis of Indium-Oxide-Based Transparent Electrodes and SnOX Interlayers for Tandem Solar Cells"

University of Catania, Italy

09:30 - 09:45

Francesca Nunzi

"DFT Investigations on the Halogen bond-driven reversible thermochromism in a 2D hybrid perovskite"

University of Perugia, Italy

09:45 – 10:00 **Annamaria Petrozza**
“Substitutional n-type Electronic Doping of Lead-Halide Perovskites”

IIT, Italy

10:00 – 10:15 **Alice Scardina**
“Low-Dimensional Hybrid Perovskites for Wide-Bandgap Photovoltaic Applications”

University of Pavia, Italy

10:15 – 10:30 **Marina Ustinova**
“Optimization of 4-Terminal All-Perovskite Tandem Solar Cells: Experiments and Opto-Electrical Simulations”

University of Roma “Tor Vergata”

10:30 – 10:45 **Luca Gregori**
“Interface And Defect Engineering In Metal-Halide Perovskites: From Molecular Design To Ionic Effects”

University of Perugia, Italy

10:45 – 11:00 **Cosimo Anichini**
“Engineering Perovskite Solar Cells with Two-Dimensional Materials”

BeDimensional

11:00 – 11:40	Coffee Break
11:40 – 17:30	Networking GoPV

Afternoon Session

Invited Lectures

17:30 – 17:50 **Maria Noelia Faginas Lago**
“Molecular Dynamics–Driven Modeling of Carbon Nanomaterials for Energy Absorption”

University of Perugia, Italy

17:50 – 18:10 **Mario Caironi**
“Non-Invasive Transduction of Action Potentials with Printed Polymer Transistors”

IIT, Italy

18:10 – 18:30

Michele Pavone

“Deciphering Phase Stability and Solid-State Transition Pathways in P2-Layered Oxides for Na-Ion Batteries”

University of Napoli “Federico II”, Italy

18:30 – 18:50

Dominika Lesnicki

“Probing Liquid Interfaces: From Air/Water to Solid/Liquid Systems Via SFG and Molecular Dynamics”

University of Lorraine, France

Contributed Talks

18:50 – 19:00

Gianluca Regni

“Towards Developing a Swiss Army Knife for Non-Covalent Interaction”

University of Perugia, Italy

19:00 – 19:30

GoPV Poster Session

19:30 – 21:30

Dinner

Day 5 - Saturday, January 31st 2026

Morning Session

08:50 – 09:00

Welcome Desk

Invited Lectures – Chair: Enrico Ronca

09:00 – 09:20

Marco Affronte

“Magnetic Polaritons: Spins Embedded in Microwave Planar Resonators”

University of Modena and Reggio Emilia, Italy

09:20 – 09:40

Stefano Corni

“Controlling Light-Molecule Interactions Through Nanoplasmonics: Insights from Multiscale Models”

University of Padova, Italy

09:40 – 10:00

Giovanna Bruno

“Polaritonic Bloch Theory in Multimode Quantum Cavities”

University of Perugia, Italy

Contributed Talks

10:00 – 10:10

Guillaume Thiam

“Relativistic Polaritonic Chemistry: a Wave-Function Based Ab Initio Perspective”

University of Perugia, Italy

10:10 – 10:20

Riccardo Alessandro

“Collective Effects in Polaritonic Chemistry”

University of Perugia, Italy

10:20 – 10:30

Edoardo Ascani

“N-Electron Valence Perturbation Theory for Electron-Photon Systems”

University of Perugia, Italy

10:30 – 10:40

Timothée Audinet

“Development of a Relativistic One-Dimensional Model Including Quantum Electrodynamics Effects”

University of Perugia, Italy

10:40 – 10:50

Riccardo Rossi

“Explicit Simulation of Cavity-QED Devices in Polaritonic Chemistry: Unravelling the Deep Nature of the Quantum Field-Matter Interaction”

University of Perugia, Italy

10:50 – 11:00	Final Remarks
11:00 – 11:40	Coffee Break
11:40 – 18:30	Networking
18:30 – 19:30	Free time
19:30 – 21:30	Dinner

Day 6 - Sunday, February 1st 2026

08:50 – 11:40

SOCIAL OUTING – visit to the “Novacella” Abbey (reservation required)

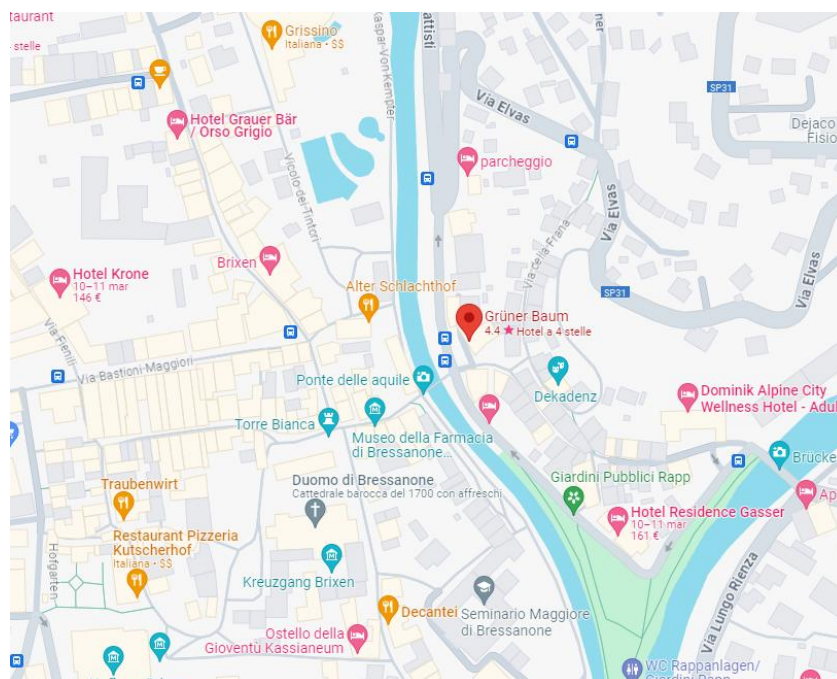
11:40 – 12:00

Thanks and greetings

Venue

The conference will be held at the GrünerBaum Hotel. This prestigious venue offers an ideal setting for conferences, meetings and events, combining modern facilities with the charm of the Alpine environment. The GrünerBaum Hotel regularly hosts educational and professional initiatives, making it a perfect location for this workshop.

[Hotel GrünerBaum – Via Stufles 11, 39042 Brixen/Bressanone (BZ)]



Social Program

Welcome and Registration

Tuesday, January 27th, 2026

Hotel GrünerBaum

Via Stufles 11, 39042 Bressanone (BZ)

Social Dinner

Thursday, January 29th, 2026

Hotel GrünerBaum

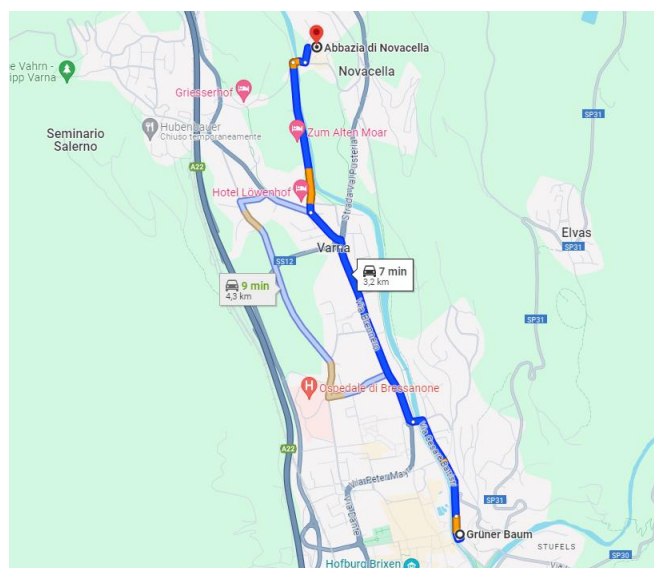
Via Stufles 11, 39042 Bressanone (BZ)

Social Outing

Sunday, February 1st, 2026

**Novacella Abbey
(reservation required)**

Via Abbazia 1, 39040 Novacella (BZ)





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