

International School on Light Conversion and Management for Agrivoltaics and Photovoltaics (SOLARIS)

- **Date:** 2-3 Sept 2026 (2 days)
- **Location:** [University of Ferrara](https://www.unife.it), Italy (Via Saragat 1, 44122 Ferrara)
- **Key contact:** photovoltaic.lab@unife.it (kindly Cc colours@unife.it)
- **Registration form:** <https://forms.gle/HCUChRcidxNhwxKk8>
- **Target Audience:** **Early-career researchers, PhD (the most highly recommended)** and Master students with backgrounds in:
 - Physics
 - Materials Science
 - Chemistry
 - Nanotechnology
 - Electrical Engineering
 - Energy Engineering
 - Mechanical Engineering
 - Environmental Engineering
 - Renewable Energy Technologies
 - Energy Management
 - Sustainable Energy Systems

- **Expert committee:**

- Researchers from European research infrastructures and collaborative projects
- Industrial partners active in solar energy technologies
- Industrial experts from the photovoltaic sector and national research laboratories

- **Key Objectives:** The school aims to involve leading international experts from academia, research infrastructures, and industry working in photovoltaics, photonics, materials science, and agrivoltaics.

- The International School on Light Conversion and Management for Agrivoltaics and Photovoltaics (SOLARIS) is an intensive two-day training program focused on the science and engineering of spectral conversion materials for next-generation photovoltaic and agrivoltaic technologies.
- The school will provide participants with both the fundamental principles and practical knowledge required to design, evaluate, and implement downshifting materials for solar energy applications. Particular emphasis will be placed on understanding how optical properties, material stability, reliability, and scalability determine the performance of photovoltaic modules and agrivoltaic systems.
- Through lectures, case studies, and discussions led by international experts, participants will learn how to bridge the gap between laboratory-scale research and real-world deployment, considering technological, environmental, and agronomic constraints.

- **Working Language:** English

- **Key competences that participants will gain:**

- Critically compare and select downshifting materials for photovoltaic and agrivoltaic applications.

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- Relate optical properties (absorption and emission spectra, quantum yield, Stokes shift, reabsorption losses) to device performance and crop requirements.
 - Understand degradation mechanisms including photo-oxidation, UV exposure, thermal stress, and moisture/oxygen ingress.
 - Evaluate strategies for improving long-term stability through encapsulation, barrier layers, and material formulation.
 - Interpret reliability testing and translate laboratory results into meaningful performance metrics.
 - Assess trade-offs between photovoltaic efficiency, transparency, spectral management, and agricultural productivity.
 - Evaluate manufacturability, coating and printing techniques, technology readiness levels (TRL), sustainability, cost, and environmental considerations.
 - Identify pathways for transferring innovative downshifting technologies from proof-of-concept to field-deployable agrivoltaic systems.
 - Understanding shadowing effects on crops

- **Core Topics & Expertise to Gain:**

- Luminescent materials and spectral conversion
- Quantum dots and nanomaterials
- Organic and inorganic photonic materials
- Photovoltaic device engineering
- Agrivoltaic systems and crop-light interactions
- Optical characterization and spectroscopy
- Reliability and accelerated ageing
- Thin-film processing and scalable manufacturing

- **Please note the following registration fee details:**

- **Members of the COLOURS Alliance: Registration is free of charge.**
- General Participants: A registration fee of 150 EUR is required.

- **Payment Details:**

- You can complete your payment directly via this link:

<https://convegni.cieffeerre.it/login.aspx?ReturnUrl=%2fDefault.aspx%3fcodConv%3dW-SPO-VIN-68-26&codConv=W-SPO-VIN-68-26>

- Detailed payment instructions can be found here:

<https://drive.google.com/file/d/1HhsQPqndLmnuv5iLJes5tbYy276fA3oQ/view?usp=sharing>