



Seminar Announcement

**22 September 2026, 12:15-13:00,
Engineering Faculty, 140/2
Measurements for degradation monitoring of
photovoltaics
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The growing deployment of photovoltaic systems makes reliable performance assessment essential to both energy production and environmental sustainability. This tutorial presents a measurement-based approach for evaluating PV degradation, from accelerated laboratory testing to field diagnostics. Electrical characterization is combined with electroluminescence, photoluminescence, ultraviolet fluorescence, and infrared thermography to identify defects including potential-induced degradation, hot spots, cracks, interconnection failures, and hail damage. Particular attention is given to measurement conditions, calibration, repeatability, and uncertainty. Laboratory and field case studies show how complementary techniques can support fault diagnosis, maintenance planning, lifetime assessment, and the development of more reliable and resource-efficient photovoltaic systems.



Nicola Trivellin is an Associate Professor of Electronics at the Department of Industrial Engineering, University of Padova, Italy. His research focuses on photovoltaic reliability, optoelectronic devices, and electrical, optical, and thermal characterization, including laboratory and field diagnostics. He is an Associate Editor of the IEEE Journal of Photovoltaics and has authored or co-authored over 200 scientific publications and contributed to nine patent applications. He was PI and co-PI of several research projects, including PNRR NEST, PNRR SERICS, PRIN and Horizon-EU. He co-founded the LightCube University of Padova spin-off.

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