

Workshop Nanophotonics (3 sessions)

Scientific Board: Nicolas Bonod (Inst. Fresnel, Marseille), Ariel Levenson (C2N, Marcoussis)

- NanoPhot 1 : Resonance & quantum nano-optics

Scientific Committee: Jean-Philippe Poizat (Inst. Néel, Grenoble), François Marquier (Inst. d'Optique, Palaiseau), Joel Bellessa (ILM, Lyon), Julien Laurat (LKB, Paris)

Keynote speaker : Jérôme Wenger (Institut Fresnel , Marseille).

This workshop will focus on new developments and applications in the field of resonant and quantum nanophotonics. Broad topics of interest include:

- quantum emitter control
- quantum plasmonics
- near field and optical nanoantennas
- quantum optomechanics
- strong light-matter coupling and collective effects in nanostructures
- waveguide-QED

- NanoPhot 2 : Emergent nanomaterials for nanophotonics

Scientific Committee: Xavier Marie (LPCNO, Toulouse), Christelle Monat (INL, Lyon), Fabrice Raineri (C2N, Marcoussis), Géraldine Dantelle (Institut Néel, Grenoble)

Graphene-like 2D materials have recently gained renewed interest due to their unique optoelectronic properties and potential applications. The combination of the assets of different materials through hybridization emerges as a powerful avenue for advanced photonics. This session will cover the photonics properties of broad topics of interest:

- graphene and beyond
- transition metal dichalcogenides
- group-IV and group-III metal chalcogenides.
- Nanohybrids for photonics : III-V/Si, ...
- Colloidal nanomaterials (synthesis, characterization and shaping) for photonic devices

Keynote speaker : Christian Schneider (University of Würzburg, Germany).

- NanoPhot 3 : Advanced microwaves, THz and optoelectronics devices.

Scientific Committee: Raffaele Colombelli (C2N, Orsay) , Olivier Gauthier-Lafaye (LAAS, Toulouse), Juliette Mangeney (LPA, Paris)

The session aims at benchmarking the state of the art and the challenges of advanced optoelectronics applications with a particular focus on the role of solutions at the nanoscale in:

- Metrology with RF combs
- Avalanche photodetectors for the near infrared -
- Photovoltaics
- THz: latest advances on sources, detectors and applications.
- Antimonides
- Challenge of spanning the whole electromagnetic spectrum: techniques, materials, devices