

European Research council funded **postdoctoral position** available at CRHEA,
Université Côte d’Azur, CNRS, Sophia-antipolis, France

Topic: Functional semiconductor metasurfaces

EDUCATION DESIRED: PhD in optical engineering, physics, electrical engineering, or related discipline.

PROFILE and JOB DESCRIPTION:

We engage in new experimental and theoretical exploration of topics related to optics and photonics at the nanoscale, accounting for phenomena as diverse as generalized reflection and refraction, and tunable nanophotonics. The successful candidate will work on research projects involving novel flat optical components and integrated electronic systems for the development of tunable optical phased array and beam steering devices at visible wavelength, targeting new LIDAR applications.

EXPERIENCE DESIRED:

- Theoretical analysis, modeling and design of nanophotonic devices: experience with multi-physics simulation (such as Lumerical, Comsol or CST)
- Hands-on nanofabrication and processing of nanophotonic devices in clean room. Prior experiences with semiconductor material processing for photonic devices would be highly considered.
- Optical experiments and electrical characterization methods.

Excellent communication and writing skills are expected to report on experimental and theoretical data internally and to international conferences.

The successful candidate must be able to work in a collaborative and dynamic research environment. The position is renewable for two years, funded by the European Research Council starting grant on the project called “*Functional optical metasurfaces for visible wavelengths*”.

For more information, visit: <https://2dphotonics.weebly.com/>

Selected and recent literature from our group:

- [1] *Mitigating Chromatic Dispersion with Hybrid Optical Metasurfaces*, R. Sawant, P. Bhumkar, A. Y. Zhu, P. Ni, F. Capasso, and P. Genevet, **Advanced Materials**, in press (2018)
- [2] *Outfitting next generation displays with optical metasurfaces*, I Kim, G Yoon, J Jang, P Genevet, KT Nam, J Rho **ACS Photonics** in press (2018)
- [3] *Modelling of free-form conformal metasurfaces*, K Wu, P Coquet, QJ Wang, P Genevet, **Nature communications** 9 (1), 3494 (2018)
- [4] *Ultra-thin optical coatings and devices and methods of using ultra-thin optical coatings*, MA Kats, R Blanchard, P Genevet, F Capasso **US Patent** 9,952,096 (2018)
- [5] *Recent advances in planar optics: from plasmonic to dielectric metasurfaces*, P Genevet, F Capasso, F Aieta, M Khorasaninejad, R Devlin **Optica** 4 (1), 139-152 (2017)
- [6] *Multiwavelength achromatic metasurfaces by dispersive phase compensation*, F Aieta, MA Kats, P Genevet, F Capasso, **Science** 347 (6228), 1342-1345 (2015)
- [7] *Light propagation with phase discontinuities: generalized laws of reflection and refraction*, N Yu, P Genevet, MA Kats, F Aieta, JP Tetienne, F Capasso, Z Gaburro, **science**, 1210713 (2011)

Please send your detailed CV to Patrice Genevet (pg@crhea.cnrs.fr)