



CALL FOR POSTDOC POSITIONS NANOCHARACTERIZATION GROUP AT ENSEMBLE³

Centre of Excellence for nanophotonics, advanced materials and novel crystal growth-based technologies

ENSEMBLE³ is a new Centre of Excellence for nanophotonics, advanced materials, and novel crystal growth-based technologies located in Warsaw, Poland, created jointly by the Łukasiewicz Institute of Microelectronics and Photonics, the University of Warsaw (Poland), the Karlsruhe Institute of Technology (Germany), the Sapienza University of Rome (Italy), and the Nanoscience Research Center nanoGUNE (Spain). The ENSEMBLE³ Centre will work on the development of novel material technologies and advanced materials with unique electromagnetic properties, with potential applications in fields such as photonics, optoelectronics, telecommunication, solar energy conversion, medicine, and aerospace.

Two postdoc researcher positions are open in the "Optical Nanocharacterization" group, led by Dr. Johann Toudert. The group will unveil outstanding and useful optical properties at the nanoscale in innovative materials such as those developed at the Centre. It will contribute at demonstrating novel design concepts opening the path to materials and devices with unprecedented performance. A special attention will be paid to: (i) plasmonic, polaritonic, epsilon-near-zero, high refractive index, cavity, and hybrid optical phenomena; (ii) managing the harvesting and emission of light; (iii) controlling and harnessing the propagation, confinement, polarization, and spectrum of light. These properties will be explored across the ultraviolet, visible, and infrared ranges in advanced materials such as eutectic metamaterials or glasses doped with nanostructures. The exploration will be undertaken by state-of-the-art optical spectroscopy approaches (such as s-SNOM, nano- and micro- FTIR, TERS, TEF, time-resolved confocal fluorescence microscopy, micro-spectrometry). Advanced numerical analysis methods (such as transfer matrix, FEM, FDTD, effective medium, fitting, inverse problem, optimization) will be harnessed to understand the nanoscale physical origin of the measured optical properties and propose new ideas.

Job type:	Postdoc researcher in the "Optical Nanocharacterization" group (full-time employment)
N° of job offers:	2
Monthly remuneration:	Up to 12,000 PLN gross (depending on experience and expertise)
Position start:	From October 2021 (depending on applicant's availability)
Initial contract agreement:	Until December 2023 (with possibility of extension from other financial sources)

Key responsibilities:

- Measure the optical properties of innovative materials, analyze them, understand their physical origin in relation with the material structure, composition, and other properties (e.g., electronic) at the nanoscale
- Propose new ideas
- Disseminate results to the scientific community and to the public

Profile of candidates/requirements:

- PhD degree in physics, optics, material science, or similar, received no later than five years prior to the date of application
- Outstanding research achievements reflected by the publication track record
- Experience of optical spectroscopy on advanced materials. Ability to use advanced optical characterization apparatuses, advanced numerical analysis methods, and to understand the nanoscale physical origin of optical properties
- Experience in fields such as: photonics, plasmonics, nanostructures, nanomaterials, or metamaterials
- Strong motivation for science and scientific research
- Creativity, critical thinking, organizational skills, proactive approach to perform tasks and reach objectives
- Strong ability to work independently as well as in a team, social competence, personal responsibility
- Strong communication skills in English

We offer:

- Innovative scientific environment
- Outstanding facilities
- International cooperation with experienced researchers
- Administrative support for visa and related documentation

Required application documents:

CV with a full list of publications and projects; Proof of PhD; Cover letter specifying what motivates you for joining the group, how you meet the search criteria, and how you can contribute to the group activities; Names and contact details of two or more senior researchers who may act as referees.

To apply: Please visit: <http://ensemble3.eu/careers>

Or
[APPLY HERE](http://ensemble3.eu/careers)

Application deadline: Until positions are filled.

Competitive candidates will be interviewed before the appointments are made.

For further information, visit: www.ensemble3.eu

For questions, please contact: recruitment@ensemble3.eu, johann.toudert@ensemble3.eu



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