

## The Institute of Photonic Sciences (ICFO)

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The Institute of Photonic Sciences (ICFO) was created in 2002 by the regional Government of Catalonia, Spain —through the Department of Universities and Research— and the Technical University of Catalonia. ICFO is a research centre of excellence devoted to the study of the optical sciences, with the mission to become one of Europe's foremost photonics research centers. The Institute is engaged in both research and education of MSc and PhD students and post-doctoral researchers. ICFO collaborates actively with many leading research centers, universities, hospitals, health care centers, and a variety of private corporations worldwide.

Research at ICFO is organized in four wide-scope areas: Nonlinear Optics, Quantum Optics, NanoPhotonics and BioPhotonics. At present, ICFO hosts 17 research groups that work in 45 laboratories and one nanophotonics fabrication facility, all hosted in a 9000 sq.m dedicated building based at the Mediterranean Technology Park, in the Metropolitan Barcelona area.

Research at ICFO is conducted in the framework of long-term programs and mid-term projects in a variety of topics, including quantum information technologies, nanophotonic devices, remote sensing, optoelectronics, integrated optics, ultrafast optics, biophotonics and biomedical optics, among others. ICFO is currently expanding, thus by 2012 the institute will host some 300 researchers. The two areas whose the larg-

est expansion is foreseen are BioPhotonics and NanoPhotonics, with the launch of a unit dedicated to Biomedical Optics, partially endowed by a generous donation by the Cellex Foundation, and the expansion of the NanoPhotonics Fabrication Laboratory.

ICFO researchers aim at both frontier basic research and applied research. ICFO researchers have published more than 500 papers in high-impact journals, like *Optics Letters*, *Physical Review Letters* and *Nature* group, and filed and licensed a significant number of patents. ICFO's current patent portfolio includes innovations in microscopy, optical manipulation, plasmonic nano-photonics devices, and compact sensors for hostile environments, to name a few. Spin-off creation by ICFO researchers is also promoted and encouraged. For example, *Radiant Light* is a start-up that spun-out of ICFO in 2005, which commercializes optical parametric oscillators and frequency-conversion devices, capable of addressing spectral regions from the UV to the mid-IR and covering all temporal domains from the continuous-wave to ultrafast femtosecond time-scales.

ICFO participates in a variety of projects funded by the European Union, such as SCALA, QAP, QUROPE, PLAMOCOM, ASPRINT, BIO-LIGHT-TOUCH etc., and in European networks such as QGates, EMALI, COCOS, PHOREMOST, PLAMO-NANO-DEVICES, among others. National collaborations among

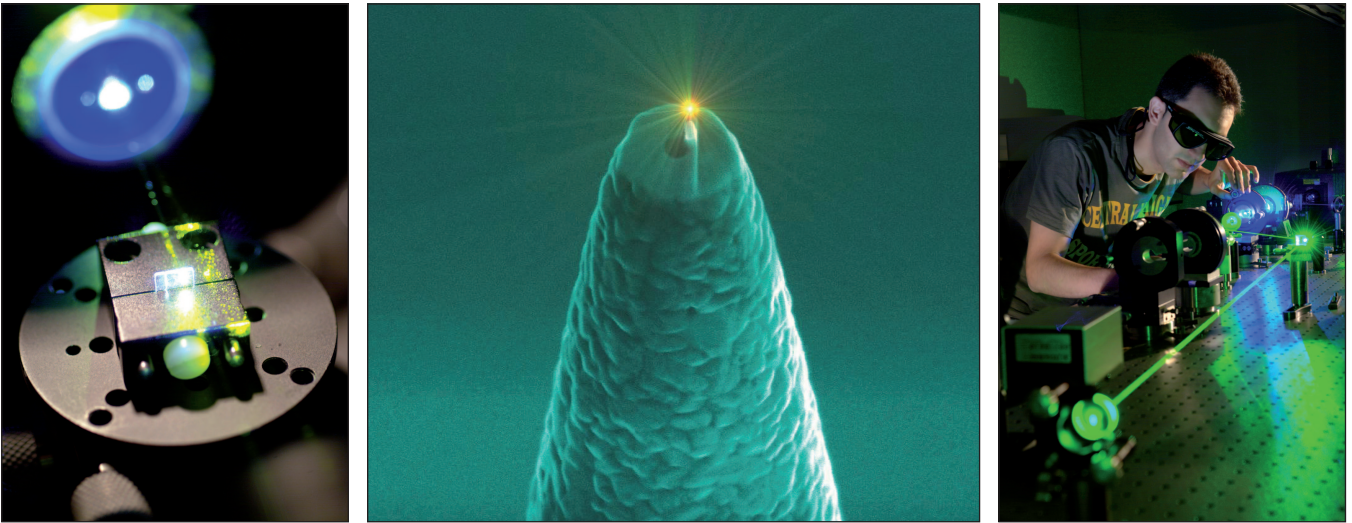


Spanish institutes and universities are also very active. In particular, ICFO has a leading role in three of the national efforts funded by the so-called Consolider-Ingenio 2010 program, a very competitive program by the Ministry of Education and Science of Spain which involves the best national research groups in all areas of Science. Specifically, ICFO participates in the consortia “Quantum Optical Information Technology”, “Nano-Light” and “Ultrafast, Ultraintense Lasers”, and leads the former two.

On the industrial side, ICFO participates actively in the European Technological Platform (Photonics XXI), in the European Photonics Industry Consortium (EPIC), and in the International Photonics Commercialization Alliance (IPCA). ICFO hosts an

active Corporate Liaison Program that aims at creating collaborations and links between industry and ICFO researchers.

One of the largest ICFO Divisions is NanoPhotonics, which is constituted by a set of 5 research groups. ICFO also hosts a Nanophotonics Fabrication Laboratory (NPL@ICFO). ICFO’s interest in Nanophotonics include, but are not limited to different types of Nano-Photonic Devices; Organic LEDs; Light Harvesting; Solar Cells; Plasmonics; Molecular NanoPhotonics; Nano-Optical Tweezers; Nano-Optical Manipulation on a Chip; Nano-Antennas; Nano-Cavities; Quantum Dots, etc. ICFO coordinates the consortium “NanoLight.es” funded by the Consolider Ingenio 2010 program, and promotes the NanoPhotonics Europe Association (NEA).



For more information: <http://www.icfo.es>