



The European Research Council awards ICFO three new Advanced Grants

ICFO is the top recipient in Spain of ERC grants in this round

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Today the European Research Council (ERC) announced the awarding of three Advanced Grants for senior researchers to ICREA Professors at ICFO Maria Garcia-Parajo, Javier Garcia de Abajo and Jens Biegert. ERC Advanced grants enable scientists to carry out frontier research with potentially ground-breaking impact on science and society beyond. The grants are awarded under the 'excellent science' pillar of Horizon 2020, the EU's research and innovation programme.

Prof. Maria Garcia-Parajo's project, entitled "*Membrane-based nano-mechanobiology: Role of mechanical forces in remodelling the spatiotemporal nanoarchitecture of the plasma membrane*", will provide understanding on the role of mechanical and biochemical stimuli in

the remodelling of adhesion mechanisms at the cell membrane. "Using cutting edge-biophysical tools exclusively developed in my lab that combine super-resolution optical nanoscopy and single molecule dynamic techniques, the project will open new research frontiers by stablishing membrane-based nano-mechanobiology as a novel mechanism that decisively contributes to signal transduction regulation and cellular response" comments Prof. Garcia-Parajo.

Prof. Javier Garcia de Abajo submitted the project entitled "*Free electrons as ultrafast nanoscale probes*" (eNANO). According to Prof. Garcia de Abajo: "With eNANO I will introduce a disruptive approach toward controlling and understanding the dynamical response of material nanostructures, expanding nanoscience and nanotechnology in unprecedented directions". The project intends to inaugurate the field of free-electron nanoelectronics, whereby electrons evolving in the vacuum regions defined by nanostructures will act as probes to excite, detect, image, and spectrally resolve polaritonic modes with atomic precision over sub-femtosecond timescales.

Prof. Jens Biegert's project is titled "*Structural transformations and phase transitions in real-time*" (TRANSFORMER). It will provide unprecedented insight into the real-time electronic and nuclear dynamics of molecular transformations and phase transitions with advanced new methodologies and a multi-faceted approach to the investigation. "TRANSFORMER will exploit our pioneering achievements in attosecond soft X-ray spectroscopy (XAFS) and laser-induced electron diffraction (LIED) to pinpoint in real-time which electronic states participate at which nuclear configuration. If successful, TRANSFORMER would undoubtedly provide an unprecedented view into electronic and nuclear dynamics, surpassing current limits in molecular and material sciences," explains Prof. Biegert.

Each project grant is worth 2.5M€ during a period of five years, which will allow researchers to pursue frontier science. The ERC Advanced Grants are aimed at active researchers who have a track-record of significant research achievements in the last 10 years. **ICFO is the research institution in Spain with the most awardees in this round of grants, accounting for three out of the total 18 grants awarded.**

The success rate of this round of grants, as announced by the ERC, was around 12%, with 269 grants awarded out of the 2167 proposals. ICFO's success rate was an amazing 50% for this call. **With these new awards, the institute now holds 30 grants in total from the European**

Research Council: 10 Starting Grants, 4 Consolidator Grants, 8 Advanced Grants and 8 Proof of Concept Grants.

As Carlos Moedas, European Commissioner for Research, Science and Innovation, has stated in the ERC press release: "The ERC's Advanced Grant scheme has supported outstanding and established research leaders since 2007. It provides a great example of how EU funding can help expand the frontiers of scientific knowledge, providing the resources necessary to continue ground-breaking, high-risk projects, and ensure Europe's global competitiveness."

The European Research Council, set up by the European Union in 2007, is the first European funding organisation for excellent frontier research. Every year, it selects and funds the very best, creative researchers of any nationality and age, to run projects based in Europe. The ERC has three core grant schemes: Starting Grants, Consolidator Grants and Advanced Grants. To date, the ERC has funded some 8,000 top researchers at various stages of their careers, and over 50,000 postdocs, PhD students and other staff working in their research teams.