ICFO

ICFO welcomes four new Marie Sk?odowska-Curie Postdoctoral Fellows

Four researchers have been awarded the MSCA Postdoctoral Fellowships, giving the institute a 17% success rate, which is well above the global average of 9.6%.

March 16, 2026

The MSCA Postdoctoral Fellowships, part of Horizon Europe, support outstanding researc and innovation collaborations across all areas of knowledge. The 2025 call has seen a**64.7% increase in applications,** marking the third consecutive year that the record has been broken. This increase in applications, from 2024's record number of 10,360 submissions to this year's 17,066 candidacies, is aligned with the trend seen in the past European calls, which have received an unparalleled number of applications. ?

New approaches to optoelectronic devices and quantum simulation

One of the awarded fellows is **Manuela de Franco**, a postdoctoral researcher at the Functional Optoelectronic Nanomaterials group at ICFO, led by Prof. Gerasimos

Konstantatos. i¿½I was interested in joining a group with strong expertise in quantum-d t materials and photodetectorsi¿½she says. De Franco has a strong background in the development and optimization of light-emitting diodes. She will now work on developin infrared-to-visible conversion devices that are real-time, efficient, and sustainable, suitabl for wearable night-vision tools or monitoring systems. i¿½I hope to develop new quantum-dot device concepts and explore approaches that combine light emission and detectioni¿½, s e conclude

Quentin Redon, postdoctoral researcher at ICFO's Ultracold Quantum Gases group, led by Prof. Leticia Tarruell. He joined the group over a year ago because of Tarruell's leadership in the cold atom community, but also because he heard it was an inclusive, collaborative and friendly environment, which was a must-have for him. He expects to develop a state-of-the-art reconfigurable Rydberg tweezer apparatus that can be useful for quantum simulation and computation of complex spin models. i¿½I plan to study a spin model that addresses long-standing problems in lattice gauge field theory, which connects both condensed matter and high-energy physicsi¿½, he explains. i¿½Our approach, develop d here at ICFO, will allow us to simulate, for the first time, the magnetic and electr c components of a two-dimensional gauge field theory, which is related to the physics f quantum spin ice in condensed matteri¿½.

Addressing challenges in quantum information and CO2 mitigation

i¿½I chose ICFO because it has an outstanding international reputation, and I was especially drawn to Toni's group because it is a young team of talented researchersi¿½, says **Carles Roch,** currently a postdoctoral fellow at Lund University who will soon join the Quantum Information Theory group led by ICREA Prof. Toni Acin. i¿½The group is highly collaborati e and welcoming, and its research interests align very closely with my own, making it an ide l place to develop this projecti¿½. His project will address one of the remaining challenges n quantum information science, which is developing quantum cryptographic systems that a e secure and also practical under real-world conditions. i¿½My focus is twofoldi¿½, he explains, i¿½aiming at developing tools to certify ultimately secure quantum randomness and also, hoping to increase the practicality of quantum key distribution by introducing physically motivated assumptionsi¿½.

Junmei Chen's research will tackle another major challenge in the field of sustainable energy: the efficient conversion of CO2 into useful products, aiming to develop a new type of electrolyzer that is both carbon and energy-efficient. She currently works as a postdoctoral researcher at the CO2 Mitigation Accelerated by Photons group, led by Prof. Pelayo Garcia de Arquer. Chen says she chose the group because of its leadership in the field of electrocatalytic CO2 reduction, and especially because of the highly impactful work that the group has published in Science. i¿½I expect to deepen my expertise and broaden my skills by delivering a robust platform with improved carbon utilization, energy efficiency, and

long-term stabilityi¿½, she explains. Beyond scientific excellence, she also highlights t
e opportunity to learn other valuable skillsi¿½I aim to produce high-quality publications, b
t also to build strong collaborations and strengthen key professional abilities such as proje
t planning, mentoring, and proposal writingi¿½, she remark
. Selected in this highly competitive programme, the four projects will contribute to advanci
g photonics research across multiple areas of science and technolog