


# ICFO?s Quantum technologies for Space showcased at Space Tech Expo in Bremen

## ICFO participates in the NewSpace Catalonia pavilion at Space Tech Expo in Bremen, Germany, a space organized by the Generalitat de Catalunya with support from the Institut d'Estudis Espacials de Catalunya (IEEC).

November 18, 2025

Space Tech Expo Europe, the continent's largest B2B event for the space industry, has opened its doors in Bremen, bringing together thousands of professionals, companies, and research institutions from across the globe. The event, running from November 18 to 20, serves as a key platform for unveiling cutting-edge technologies and fostering collaborations in the rapidly evolving space sector.

This year, Catalonia is making a strong statement on the international stage through its NewSpace Catalonia pavilion, organized by the Generalitat de Catalunya with support from the Institut d'Estudis Espacials de Catalunya (IEEC). The pavilion highlights the region's

growing capabilities in satellite technologies, Earth observation, data analytics, and emerging quantum solutions for space applications.

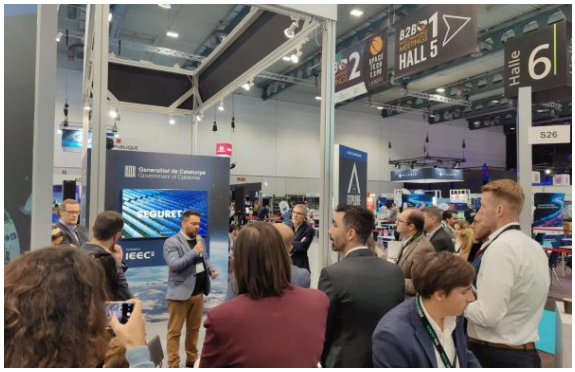
ICFO experts Adria Sansa, from the Optoelectronics research group at ICFO led by ICREA Prof. Valerio Pruneri, and Victor Herrero and Jordi Pinyol, from the Knowledge and Technology Transfer (KTT) team, are representing the institute as one of the standout participants, presenting the latest advancements in quantum technologies for space, including ultra-secure quantum communication systems for free-space networks as well as space-based missions.

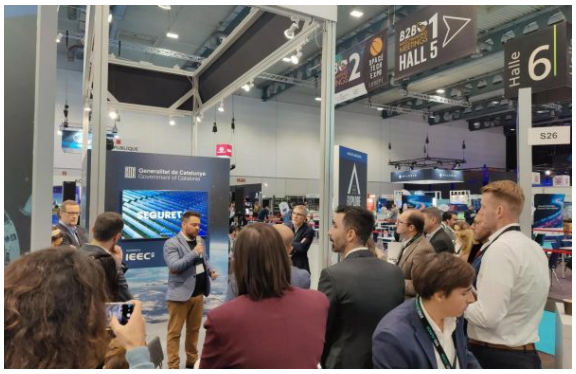
ICFO's quantum technologies include cutting-edge devices designed for space and secure communications: polarization quantum transmitters at two key wavelengths: 785 nm, optimized for free-space links and satellite communications, and 1550 nm, ideal for long-distance fiber and hybrid networks; entanglement sources (SPaDES I & II) for quantum networking, and sensing, delivering photon pairs with visibility above 90% and brightness suitable for global quantum networks.

Beyond communication devices, ICFO has advanced in quantum free-space links, establishing a 20 km testbed between Collserola and ICFO to enable future quantum internet infrastructure. These technologies position ICFO as a leader in quantum innovation for space, supporting secure global connectivity and next-generation quantum applications.

The presence of ICFO at Space Tech Expo underscores the institute's commitment to space innovation in the quantum arena. These innovations all are part of different European projects and initiatives, among them EuroQCI Spain, QUDICE, Qnetworks, Qdesign, that aim to address critical challenges in security for the development of quantum communications through future space infrastructures.




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