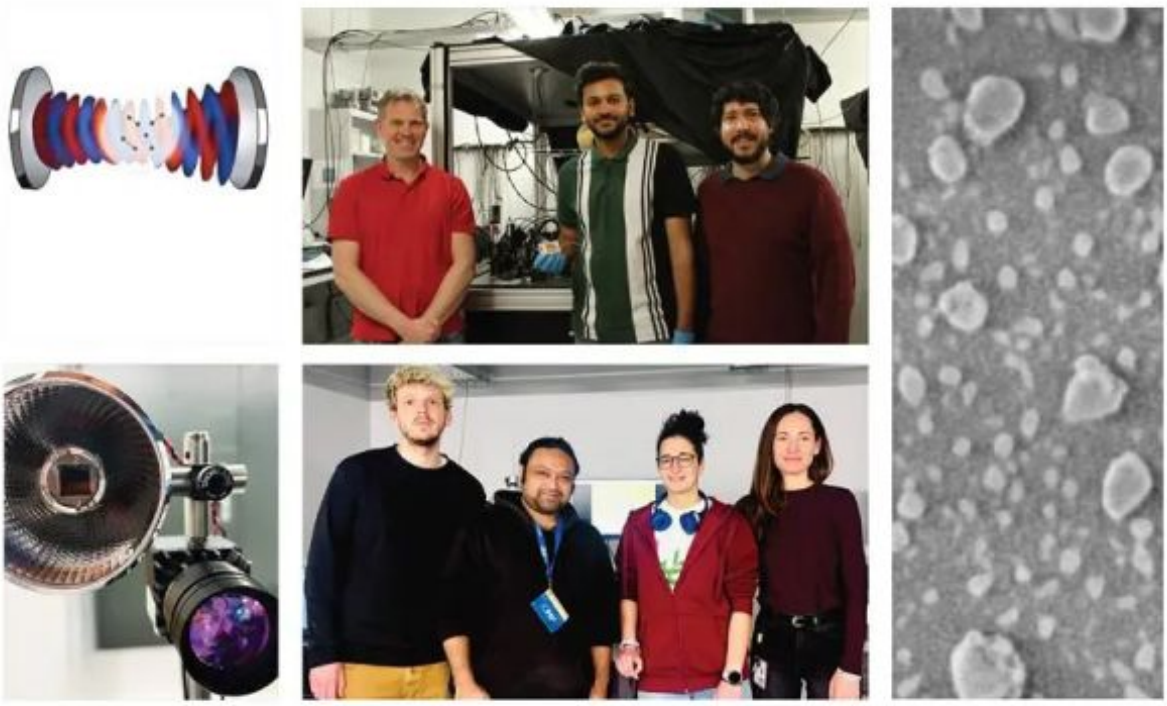

# March Science News Recap

## ICFO's summary of news highlights of the scientific discoveries and stories from the month of March 2026.

April 07, 2026

March was packed with different scientific discoveries, results and findings that have sparked different stories to share. We've gathered the most important updates to keep you in the know. Whether you missed a few of them or just want a quick recap, our summary of March's top scientific news has you covered. Dive in and catch up on everything that happened this month.

**News 1**

**Quantum dots offer an affordable alternative to infrared light sources**

Imaging through smoke and fog, at night, from a remote location, keeping the eyes safe... These desirable features for next-generation machine vision technologies could all be enabled by shortwave infrared (SWIR) light. However, conventional SWIR-emitting technologies face significant challenges and do not yet offer a viable alternative that simultaneously achieves high power, high efficiency, and low cost.

In a recent publication in ACS Photonics, ICFO researchers have demonstrated that lead sulfide quantum dots do give rise to high-power, efficient, and stable downconverters (devices that absorb higher-frequency photons and convert them to lower-frequency ones, in this case, within the SWIR range). As a proof of concept, the team has already demonstrated its potential for industrial inspection, food safety monitoring, surveillance, and biomedical diagnostics.
Date: March 13, 2026
Topic: Quantum dots.
ICFO Researchers: Aditya Jagadeesh Malla, Dr. Katerina Nikolaidou, Miguel Dosil, Dr. Mariona Dalmases, Dr. Stephy Vincent, and Marta Martos Valverde, led by ICREA Prof. Gerasimos Konstantatos.
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**News 2:**
**Playing with light and molecules: a versatile platform for exploring exotic quantum matter**
Quantum effects can be elusive, intricate, and deeply complex. That's why, sometimes, researchers need to specifically design platforms that imitate these quantum phenomena in a i¿½cleani¿½ and highly controllable manner, minimizing the disturbances often foun in nat re. In a Physical Review Letters publication, ICFO researchers have theoretically proposed a new method that uses molecules and light to study exotic states of matter in which several quantum effects, such as non-local interactions and geometric frustration, can emerge. The platform is more versatile and robust than existing alternatives.
Date: March 17, 2026
Topic: Quantum physics.
ICFO Researchers: Pavel P. Popov and Dr. Joana Fraxanet, led by ICREA Prof. Maciej Lewenstein.
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**News 3:**
**New alloys and embedded nanostructures for durable, color-neutral antimicrobial touchscreens**
Touchscreens are everywhere in our daily life, from smartphones and tablets to ATMs, but they also act as reservoirs for harmful microorganisms and hotspots for infectious diseases transmission. There is an increasing demand for antimicrobial transparent surfaces and coatings that inhibit the microbial growth on touchable screens.
Now, in two recently published studies in Scientific Reports and APL Materials, a team of researchers from ICFO has reported two new strategies in antimicrobial glass technology for touchscreens. The researchers utilize a novel copper-zinc alloy for color neutrality and a

"shielded" nanohole architecture to enhance the antimicrobial performance and mechanical durability of antimicrobial surfaces.
Date: March 19, 2026
Topic: Advanced Materials
ICFO researchers: Iliyan Karadzhov, Alessia Mezzadrelli, Rubaiya Hussain and ICREA Professor at ICFO Valerio Pruneri.
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**News 4:**
**Graphene receivers bring energy-efficient 6G hardware closer to reality**
The 6th generation (6G) communication technology aims to transmit data through an enhanced wireless connectivity infrastructure at higher speeds and with greater capacity than current 5G.
One major challenge is the detection of data signals, which requires receivers that operate in the sub-terahertz regime in a simple, compact, and energy-efficient manner so that they can be implemented in everyday devices. Recently, ICFO researchers and collaborators have demonstrated in Nature Communications that graphene receivers meet all these requirements, marking an important step toward energy-efficient 6G hardware.
Date: March 25, 2026
Topic: Graphene
ICFO researchers: Dr. Karuppasamy Pandian Soundarapandian, Dr. Sebastian Castilla, and Dr. Simone Marconi, led by ICREA Prof. Frank Koppens.
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**News 5:**
**ICFO researchers simplify the study of van der Waals materials**
Low-dimensional van der Waals (vdW) materials are layered structures held together by weak van der Waals forces. At infrared frequencies, these interactions can give rise to unusual phenomena, such as anomalous refraction.
ICFO researchers have presented in npj Nanophotonics an empirical method to optically characterize exfoliated flakes of low-dimensional van der Waals materials. While previous techniques were expensive and highly sensitive to the external environament, this alternative approach is widely accessible and simple to implement in practice. This could accelerate material discovery and facilitate the design of many photonic and optoelectronic technologies that involve low-dimensional materials for molecular sensing, infrared spectroscopy, energy technologies, and thermal management.
Date: March 31, 2026
Topic: Low-dimensional materials
ICFO researchers: Dr. Mitradeep Sarkar, Dr. Michael T. Enders, Dr. Mehrdad Shokooh-Saremi,

Evgenia Klironomou, Dr. Hanan H. Sheinfux, ICREA Prof. Frank Koppens, led by Prof. Georgia Papadakis.
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