

seminars

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seminar

Tuesday 17th January

c/Faraday, 9

Conference Hall

Imdea Nanociencia

Ciudad Universitaria de Cantoblanco

12:00h Nanofabrication and characterization of superconducting kinetic inductance detectors for space exploration

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Pushing the detection limits in of current available technologies and developing new detection strategies is critical for future space missions in the infrared. Kinetic Inductance Detectors (KID) have recently drawn the attention of the low-temperature detectors community because of their potential high sensitivity and the capability of producing large arrays due the intrinsic frequency multiplexed readout. Developing these detectors will open new possibilities for future astronomical observations which need large format arrays of ultrasensitive detectors. We will present the advances on fabrication and low temperature characterization of KIDs for ground based and space applications.

We will show the progress made to meet the baseline specifications for the next generation of space FIR instruments. In this context, we are developing hybrid narrow lines (200 nm) Al/NbTiN KIDs to push the current state of the art of KIDs technology towards higher frequencies (3 THz) and superconducting Al/Ti bilayers for low frequency detection (<100 GHz). Additionally, we will present our advances on the fabrication of very large arrays (1000 pixels) of KID detectors for large format cameras.

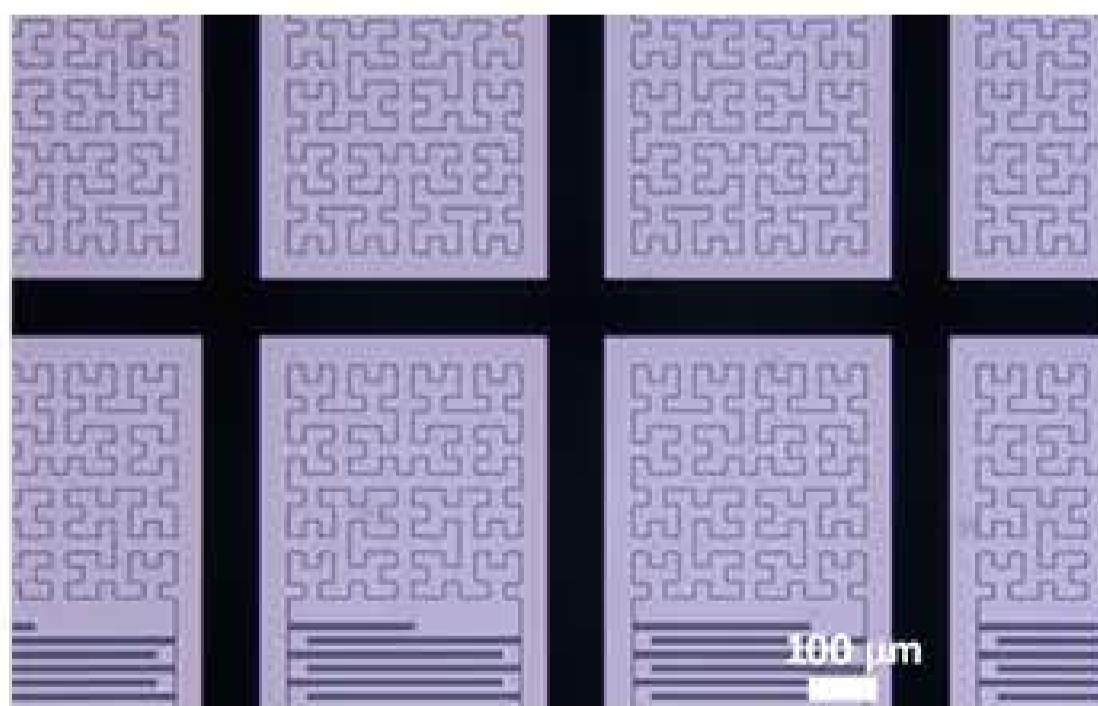


Fig 1. Back illuminated optical image of several pixels of the 850 GHz array defined on the Sapphire substrate.

Nanociencia y Nanotecnología: lo pequeño es diferente
Nanoscience and Nanotechnology: small is different