



# RIS3CAT

**Project:** GRABSPEC (ICFO, PicVisa1, SECPhO2, Cluster MAV2)

## GRABSPEC

### **GRABSPEC – Portable broadband spectrometer based on graphene**

GRABSPEC seeks to revolutionize spectrometers by introducing a graphene and quantum dots based photodetector recently developed at ICFO. Said detector will be able to double the spectral operating range and miniaturization with respect to current spectrometers. By combining the tunable, broad-spectrum optical absorption of GQDs and the electronic properties of graphene, we will create a low-cost, highly ambient-sensitive, broad-spectrum graphene photodetector.

The large spectral operating range and miniaturization of the spectrometer allow for more applications. The speed of response of detectors with a large spectral operating range is currently not adequate for a spectrometer. One of the main objectives of this project is precisely to increase the response speed.

Another objective of the project is to identify practical cases with the greatest disruptive potential with the help of the SecPho cluster. Additionally, it is proposed to implement an optimized device prototype for plastic classification that can recognize the type of plastic and its color.



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