Project: GraVisIR (ICFO, Ficosa, CIAC2, SECPho, Cluster MAV)

GraVisIR

GraVisIR- Integrated wafer-scale image sensor for visible and infrared light

Optical sensors and cameras that operate in the near infrared have a multitude of applications with great social impact such as night vision and in adverse circumstances (such as fog), very useful for the automotive sector, inspection of production and quality processes, safety and surveillance, as well as fire prevention, crop inspection and pest control among others.

The products currently available on the market are based on non-monolithic III-V (InGaAs) technologies, on CMOS (Read-out Integrated Circuits or ROIC) reading integrated circuits. This technology has disadvantages such as the high price associated with high quality InGaAs materials and the low resolution caused by the manufacturing process. Only recently have megapixel levels been achieved at prohibitive cost for most industrial applications. Consequently, the approximate cost of a device is around 20,000 euros.

The aim of the GraVisIR project is to integrate a unique technology based on graphene and quantum dots developed at ICFO - the Institute of Photonic Sciences by professors Konstantatos and with optical sensor arrays. This technology has considerable and unique advantages that allow it to be one of the most promising technologies for a new type of image sensor.

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