

PRESENTER INFORMATION



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BIOGRAPHICAL SKETCH

Dr. Gerard Macias Sotuela is a Director at Macias Sensors Ltd., a Scotland-based SME focused on the sales, manufacturing, and development of optical and electrochemical (bio)sensors. Prior to founding Macias Sensors Ltd., he worked at RD Graphene Ltd. (now Integrated Graphene Ltd.), where he led the development of their biosensor platform Gii-Sens and their supercapacitor technology.

Besides his industrial experience, he also has a strong academic track record endorsed by 11 peer-reviewed publications that sum a total of 332 citations and an h-index of 9. Perhaps his most notable work is “Whisky Tasting using a Bimetallic Nanoplasmonic Tongue”, which was showcased in the media around the world and attracted much industrial attention.

TITLE: LoPCBs for rapid development of complex biosensing devices.

ABSTRACT

Translating biosensor research into commercial products is a challenge. On average, it takes between 20M and 100M US dollars and around 10 years to commercialize a biosensor. This is due to the complexity of biosensor systems: sample processing, fluidics, temperature control, biofunctionalization, sterilization... all while keeping in mind scalable manufacture and low costs. Due to the amount of money, time, and complexity of commercial biosensor development, it is common that startups/spinoffs fail before having a functional prototype.

At Macias Sensors Ltd. we are aware of these challenges and, to solve them, we turned to PCB technology. We reverse engineer this inherently scalable and cost-effective technology to enable fast prototyping of biosensing chips that (1) are compatible with other off the shelf electronics; and (2) can integrate other devices, such as microfluidics or nanoporous sensors, which have shown promise in the development of highly sensitive devices.