



MASTER IN PHOTONICS – “PHOTONICS BCN” ERASMUS+ “EUROPHOTONICS”

MASTER THESIS PROPOSAL

Dates: April - September 2019

Laboratory:

Institution: IRIS Technology Solutions S.L.

City, Country: Castelldefels, Spain

Title of the master thesis: Development of high-end optical probes for commercial-grade standalone NIR spectrophotometers

Name of the master thesis supervisor: Alejandro A. Rosales Lavielle

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Keywords: Optical design, spectroscopy, infrared, NIR

Summary of the subject (maximum 1 page): To develop -with the support of a multidisciplinary team- relevant improvements in the optical probes of a proprietary standalone self-contained NIR spectrophotometer intended for at-line use in industrial environments. The goal is radically increasing the current signal/noise ratio by optimizing the interaction between the inspected bodies and the instrument lighting and collection optics.

Additional information :

*** Required skills:** Hard skills: Background in optics and optical design (ray tracing and optical design software such as Zeemax); hands-on skills (mechanics and optics). Soft skills: Highly self-motivated about inventive/innovative tasks as well as applying scientific knowledge to address practical challenges.

*** Miscellaneous:** **IRIS Technology Solutions S.L.** is an advanced engineering company which is digitally transforming industry to the 4.0 paradigm thanks to our specialisation in two Key Enabling Technologies: **Photonics** and **ICTs**. Our mission is to apply our passion and talent in order to push the limits of these technologies and extend the boundaries of our thinking in order



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