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Master in Photonics – “PHOTONICS BCN” ERASMUS+ “EUROPHOTONICS”

MASTER THESIS PROPOSAL

Dates: April - September 2020

Laboratory : Applied Optics (Engineering Department)

Institution: IRIS TECHNOLOGY SOLUTIONS

City, Country : Castelldefels, Barcelona (SPAIN)

Title of the master thesis: "*Development of a light-based system for fruit & vegetable decontamination*"

Name of the master thesis supervisor:

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Mail address : lrodriguez@iris.cat

Keywords : LIBS, monitoring, spectroscopy, pilot plant,

Summary of the subject (maximum 1 page) :

IRIS is an advanced engineering company that specializes in process monitoring and control solutions & novel technologies for process optimization. We are a multidisciplinary team of scientists and engineers involved in different R&D projects related with optical monitoring technologies, circular economy and industry 4.0. We operate in a demanding high performance environment where you will be continually stimulated and you will grow a lot. Up for it?

The work will be part of a European funded project called SHEALTHY that aims to assess and develop an optimal combination of non-thermal sanitization, preservation and stabilization methods to improve the safety while preserving the nutritional and organoleptic quality and prolonging the shelf-life of fresh and minimally processed F&V products. (<http://www.shealthy.eu/project/>).

The student will be involved in the design and building of a lab scale optical set up for testing each of the selected light technologies (such as, HILP (high-intensity pulsed light), blue light, or UV). In addition, the student will take part in the characterization of the systems and its validation of fruits and vegetables.



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Additional information :

* Required skills : Basic knowledge in optomechanics, prototyping and illumination design.

* Miscellaneous : Team work, problem solving abilities, curiosity, analytical thinking and a great deal of enthusiasm.