MASTER IN PHOTONICS – PHOTONICS BCN
EUROPHOTONICS-POESII MASTER COURSE

PROPOSAL FOR A MASTER THESIS

Dates: April - > 6 - 8 months

Laboratory: Lumileds R&D, Device Architecture Group
Institution: Lumileds R&D
City, Country : D-52068 Aachen, Germany

Title of the master thesis: **Optimizing Photo-Conversion in high-brightness LED emitters**

Name of the master thesis supervisor: Director @ Lumileds R&D + Jose A Lazaro (UPC)
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Summary of the subject (maximum 1 page) :

Subject: Lumileds R&D is searching for graduate and undergraduate students willing to contribute to the solid state lighting industry. The student/s will work in a high tech industry facility together with a professional research team of electrical engineers and physicists.
The proposed area of investigation deals with numerical methods and computational techniques to model the processes of light extraction in power LED (Light-Emitting Diodes) devices. An optics model of thin film micro-structures ought to be developed, tested, and experimentally validated. The student will have the opportunity to closely work with a team working on advanced multiphysics LED models to guide us in the understanding of a number of exciting fundamental physical mechanisms.

Context:
Solid state lighting technologies are among the most prominent innovations influencing the way in which we improve our future by reducing energy consumption. So much so that the current 20% of the world's electricity consumed by lighting can potentially be reduced to 4% with the full-scale adoption of LEDs.

Inici: To be specified

Durada: **6 months to 1 year depending on interest**

Requisits

- Good programming skills.
- Photonics background.
- LED device physics knowledge.
- High motivation and good English (written and spoken).

Compensació A compensation will be given by the company.

Keywords : Electrical Engineering / Optics & Photonics / Physics, Matlab®, Optimizing Photo-Conversion in high-brightness LED emitters.