



Education and Culture DG

ERASMUS MUNDUS



EUROPHOTONICS-POESII MASTER COURSE

PROPOSAL FOR A MASTER THESIS

Dates: April 1st, 2016 – September 30th, 2016

Laboratory : Nanomaterials Processing

City, Country : Barcelona, Spain

Title of the master thesis : Novel optoelectronic materials based on Perovskites.

Name of the tutor of the master thesis : Frank Güell

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Summary of the subject (maximum 1 page) :

Metal halides perovskites, such as hybrid organic-inorganic, are newcomer optoelectronic materials that have attracted enormous attention as solution-deposited absorbing layers in solar cells with power conversion efficiencies reaching 20%. In this work we'll demonstrate a new avenue for halide perovskites by designing highly luminescent perovskite-based colloidal quantum dot materials. Future studies with these novel QD-materials will concentrate on optoelectronic applications such as lasing, light-emitting diodes, photovoltaics, and photon detection.

Keywords : Nanomaterials, photoluminescence, perovskites, halides, quantum dots, nanocrystals, optoelectronics.

Additional information :

* Required skills :

* Miscellaneous :