



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

MASTER THESIS PROPOSAL

Dates: April - September 2019

Laboratory: Group MIND
Institution: University of Barcelona
City, Country: Barcelona, Spain

Title of the master thesis: Simulation of a Plasmonic Structure for Visible Light Detection.

Name of the master thesis supervisor:

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Keywords: Plasmonics, Schottky diode, GaN, TiO₂.

Summary of the subject (maximum 1 page):

The main objective of this project is simulating a plasmonic structure consisting in a periodic array of gold strips with different duty cycle, width and thickness on top of TiO₂ thin layer grown on a GaN substrate. The array must be designed to provide a plasmonic resonance within the range of 450 – 750 nm.

The results will be compared with the fabricated devices. The simulation software will be Lumerical and in particular the DEVICE solution with Discontinuous Galerkin Time Domain Solver.



Additional information :

- * Required skills: FDTD
- * Miscellaneous: materials, electronics.

simulations.