EUROPHOTONICS-POESII MASTER COURSE

PROPOSAL FOR A MASTER THESIS

Dates: Feb 2018 – July 2010

Laboratory: D4-S107, Optical Communications Laboratory
City, Country: Barcelona, Spain

Title of the master thesis: Graphene-based Multimode Interference Device Design for Optical Switching Applications.

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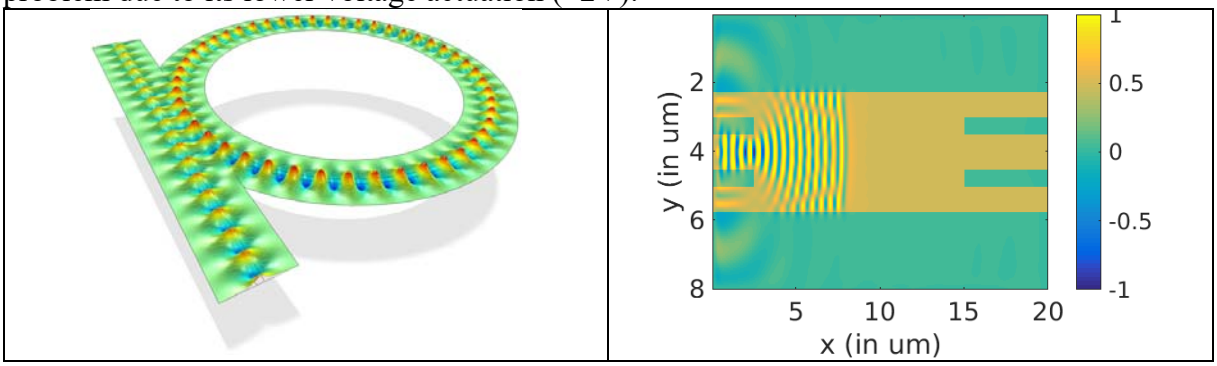
Summary of the subject (maximum 1 page):
With the advances in IP networks and optical communications, all-optical IP networks have become a core topic in the communications industry. Thus, optical switches are an essential ingredient in the optical networks to perform switching functionalities. Features such as high switching speed, resilience and energy efficiency are required in new switches' designs. To reach almost of those features different electro-optical switching type solutions have been proposed. One of them is semiconductor space switch based on MMI (Multimode Interference) couplers whose main issue is their high power consumption (they require voltage actuation >10V). Using a graphene layer as switching control element over a MMI could resolve that problem due to its lower voltage actuation (<2V).



Keywords: Optical Switch, MMI, Graphene

Additional information:
* Required skills: Interest on learning at interdisciplinary fields between physics, photonics and communications. Basic Matlab (Recommended, short Matlab Tutorial is offered otherwise.)