Dr. Adrià Grabulosa

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JOB EXPERIENCE

PhD in Optics and Photonics – Femto-ST Institute
2020-2023, Besançon, France
Design, fabrication and testing of 3D printed photonic circuits towards scalable and CMOS compatible integration of photonic neural networks.
Technology skills: direct-laser writing (DLW) based on two-photon polymerization (TPP), scanning electron microscopy (SEM), critical point drying and reactive ion etching (RIO).

Internship (DAAD scholarship) – Technische Universität of Berlin (TUB)
2022-2023, Berlin, Germany
The aim of the internship was to merge 3D printed photonic waveguides and semiconductor (GaAs) quantum dot micropillars in one single integrated device.
Technology skills: micro-photoluminescence (µPL) spectroscopy at cryogenic temperatures and metal-organic chemical vapor deposition (MOCVD).

MSc final project – The Institute of Photonic Sciences (ICFO)
2018-2019, Castelldefels, Spain
Design and testing of novel platforms for THz and mid-IR photodetection based on graphene.
Technology skills: design and construction of free-space optical set up.

BSc final project - Microelectronics Institute of Barcelona (IMB-CNM-CSIC)
2017-2018, Bellaterra, Spain
Design and fabrication of superconducting coplanar waveguide resonators.
Technology skills: electron-beam lithography (EBL), direct-laser writing (DLW) and general lithography processes, i.e. spin coating, mask alignment, thermal evaporation and lift-off.

Project member – Quantic BSC (Barcelona Supercomputing Center)
2017-2018, Barcelona, Spain
Research assistant for the development of a superconducting qubit platform, the first of its kind fully fabricated in Spain. Later developed into the startup *Qilimanjaro Quantum Tech*.
Technology skills: atomic force microscopy (AFM), transmission electron microscopy (TEM) and simulations via Sonnet Software.

EDUCATION

2020-2023 PhD in Optics and Photonics – Université Bourgogne Franche-Compté (UBFC).

2019-2020 MSc in Photonics – Universitat Politècnica de Barcelona (UPC), The Institute of Photonic Sciences (ICFO), Universitat Autònoma de Barcelona (UAB) and Universitat de Barcelona (UB).

2014-2019 BSc in Nanoscience & Nanotechnology – Universitat Autònoma de Barcelona (UAB).

GRANTS/AWARDS

2021-2022 SPIE Optics + Photonics Student Conference Support, San Diego (USA).

2022-2023 German Academic Exchange Service (DAAD) – Short-term grant at TU Berlin.

PUBLICATIONS

Grabulosa, A., Porte, X., Moughames, J., Brunner, D., "Combining one and two photon polymerization for accelerated high performance (3+1)D photonic integration", *Nanophotonics* 11, 1591 (2022).

Grabulosa, A., Porte, X., Jung, E., Moughames, J., Kadic, M., Brunner, D., "(3+1)D printed adiabatic 1-to-M broadband couplers and fractal splitter networks", *Optics Express* 31, 20256-20264 (2023).

Grabulosa, A., Moughames, J., Porte, X., Kadic, M., Brunner, D., "Additive 3D photonic integrations that is CMOS compatible", *Nanotechnology* 34, 322002 (2023).

Grabulosa, A., Porte, X., Moughames, J., Brunner, D., "3D printing towards scalability for photonic neural network integration", *2nd workshop on neuromorphic computing*, University of West Attica, Athens (2023). Invited talk.