UNIVERSITÀ DI TRENTO
Dipartimento di Fisica

PhD Program in
Space Science and Technology - SST

Miniaturization of photonic sensing systems on chip

Specific Seminar – Curriculum 5

February 5, 2024, 3 p.m.

Speaker:

Prof. Claudio J. Oton, S. Anna School of Advanced Studies - Institute of Mechanical Intelligence

Abstract:

Integrated photonics is becoming a reality in many applications, from telecom to sensing. In particular, the opportunity to use existing semiconductor fabrication technology to mass-produce photonic integrated circuits can dramatically reduce size and weight of these systems, together with a great reduction in cost. In this presentation I will overview the current state of the art of silicon photonics for sensing applications, including spectrometers, inertial sensors, biochemical sensors, and optical fiber sensor interrogators.

Reading material:

L. Chrostowski,"Silicon Photonics Design", Cambridge University Press

C. Pollock, M. Lipson, "Integrated Photonics," Springer

Short Bio

Claudio J. Oton (born in Cartagena, Spain, 1978) received his degree in Physics in 2000 and PhD in 2005 in University of La Laguna (Spain). Then he spent 4 years in the Optoelectronics Research Centre, University of Southampton, UK as a post-doctoral researcher and Marie Curie fellow. In 2009 he joined the Nanophotonics Research Centre, in Universidad Politecnica de Valencia, (Spain) as a Senior Research Fellow. Finally, in 2012 he joined Scuola Superiore Sant'Anna in Pisa (Italy) as an Assistant Professor, and from 2022, Associate Professor. He works in the Institute of Mechanical Intelligence in the research group Photonic Sensing Integrated Systems. His main fields of expertise are photonic sensors and silicon photonics. He is author of more than 150 scientific papers and conferences, which have generated more than 3000 citations, and has participated in several international research projects and contracts. In particular, he has been coordinator of projects funded by the Italian Space Agency, the Italian Ministry of Economic Development, the EU FP7 program, and has also coordinated several research contracts with industrial partners. He is also Associate Editor of the journal Optics and Laser Technology and member of the Optica Society.

Online attendance:

Zoom link: https://infn-it.zoom.us/j/98002606907?pwd=Q2srcldkcUVod3lzR2lnOW9ZZHBQQT09
Meeting ID: 980 0260 6907; Passcode: 149479

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