INTRODUCTION TO NANOPHOTONIC INTEGRATED CIRCUITS

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Introduction to Nanophotonics 31 January – 9am (CET)
Overview of exact and numerical solution of waveguide 1 February – 9am (CET)
Basics on the fabrication of nanophotonic devices 2 February – 9am (CET)
Nanocharacterization with near field optics 3 February – 9am (CET)

Abstract:
Nanophotonics aims at the understanding of photonic phenomena on the nanometer scale, beyond the diffraction limit of light. In addition to basic knowledge, it requires adequate equipment for fabrication and characterization at the nanometer scale.
This course aims at teaching the Pixnet Master students the principles of nanophotonics, in nanophotonic integrated circuits. It also aims at providing the principles for the design, and simulation of nanophotonic integrated circuit, as well as an overview for the nanofabrication in a clean room facility and nanocharacterization, specifically with near field scanning optical microscopy (NSOM).

Short bio:
HDR. Dr. Rafael Salas-Montiel received the B.S. degree in telecommunications engineering from the National Autonomous University of Mexico, in 2002. He received the M.Sc. degree in Optics and radiofrequencies from the Grenoble Institute of Technology in 2004 and the Ph.D. degree in Optics and RF from Grenoble INP, in 2008. He also received the French Habilitation to conduct (HDR) research, in Physics from Sorbonne University in 2018. From 2008 to 2009, he was a Postdoctoral Research Associate with the Department of Electrical Engineering at Texas A&M University and from 2009 to 2010, he was Postdoctoral Research Associate with the Laboratory for Nanotechnology, and Instrumental Optics, UTT. Since 2011, he has been a researcher and engineer with the L2n CNRS EMR 7004, UTT. His research interests combine integrated optics and plasmonics. He is a specialist in the optical characterization of integrated plasmonic devices with the use of near field scanning optical microscopy. His current research projects focus on the field of integrated active plasmonics with graphene on silicon and integrated quantum nanophotonics. HDR. Dr. Rafael Salas-Montiel is the principal investigator in several projects within the field of integrated quantum photonics and supervise M.Sc. and PhD students.

Please, send a request of participation to pixnet@santannapisa.it in order to receive the link to the seminar sessions.