

MQ Photonics Research Centre Webinars

When: Wednesday 22 July 2020 at 2 PM

Via Zoom: Zoom invitation Join from a PC, Mac, iPad, iPhone or Android device: Please click this URL to start or join:

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Dr Alessandro Tuniz

Title: HYBRID PLASMONIC MODULES, NONLINEARITIES, AND TOPOLOGIES

Abstract: In this webinar I will present recent experimental progress in integrated hybrid plasmonics. I will show how to enhance off-the-shelf silicon-on-insulator waveguides with compact and efficient plasmonic circuits. These are formed by back-to-back plasmonic rotator and concentrator modules, leading to on-chip second harmonic generation enhancement in nanoscale mode volumes. I will also present theoretical work which addresses the confusion surrounding the nonlinear coefficient γ for lossy systems, and which should prove useful for novel designs of wavelength-scale highly nonlinear waveguides. Time permitting, I will present recent experiments which showcase the tuneable properties of plasmonic Eigenmodes near their non-Hermitian exceptional points.

Bio: Dr. Alessandro Tuniz is an ARC DECRA Fellow at the University of Sydney since 2020, and a Sydney Nano EMCR Ambassador since 2019. His research interests include plasmonics, nonlinear nanophotonics, metamaterials, hybrid photonic devices, and terahertz technology.