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SEMINAR

Photonic Integrated Circuits with InP technology

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November 19th 2026, h. 14:00 – Blu Seminar Room
Zoom link: https://unipv-it.zoom.us/j/61121147994

Abstract: Photonic Integrated Circuits (PICs) are revolutionizing the way light is generated, manipulated, and detected by integrating multiple functionalities onto a single chip. Significant progress has been witnessed in the number of photonic components that can be integrated into the same PIC, analogous in many ways to the trajectory observed in Moore's law for microelectronics. While silicon photonics has become the dominant platform for large-scale passive integration, III–V semiconductor technologies offer unique capabilities through their direct bandgap, enabling efficient light generation, amplification, modulation, and detection. The Photonics Integration (PhI) group at Eindhoven University of Technology (TU/e) performs leading-edge research on indium phosphide (InP)-based photonic integration and its applications. Among III–V semiconductor platforms, InP uniquely enables the monolithic integration of both active and passive photonic devices, making it a key technology for advanced PICs. The seminar will first provide an overview of the main photonic integration platforms and fundamental building blocks, discussing their capabilities, limitations, and the technological challenges associated with increasing integration density and functionality. The seminar will present the research activities of the PhI group, with particular emphasis on (bio)sensing applications, including the feasibility study of integrated sensing platforms with low-cost
optical readout.

Bio: Elisabetta Bodo was born in Novara, Italy, in 1996. She received the B.Sc. degree in Bioengineering and the M.Sc.in Electronic Engineering (track Photonics) from the University of Pavia in 2018 and 2020, respectively. She obtained the Ph.D. degree from the University of Pavia in 2024, working on the characterization of micro-opto-electro-mechanical systems (MOEMS) and the development of micro-opto-fluidic low-cost devices for biochemical applications. In 2022-2023, she was a Visiting Ph.D. student at the Laboratory for Microactuators of the University of Freiburg (Freiburg, Germany). In 2023-2024, she worked as Postdoctoral Research Fellow with the Laboratory of ElectroOptics of the University of Pavia. Since 2024, she has been a Postdoctoral Researcher with the Photonic Integration group of Eindhoven University of Technology (TU/e), working on InP-based PICs for (bio)sensing applications.

Organizers

Valentina Bello

Ph.D. Coordinators

Prof. Ilaria Cristiani
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Seminar in English

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