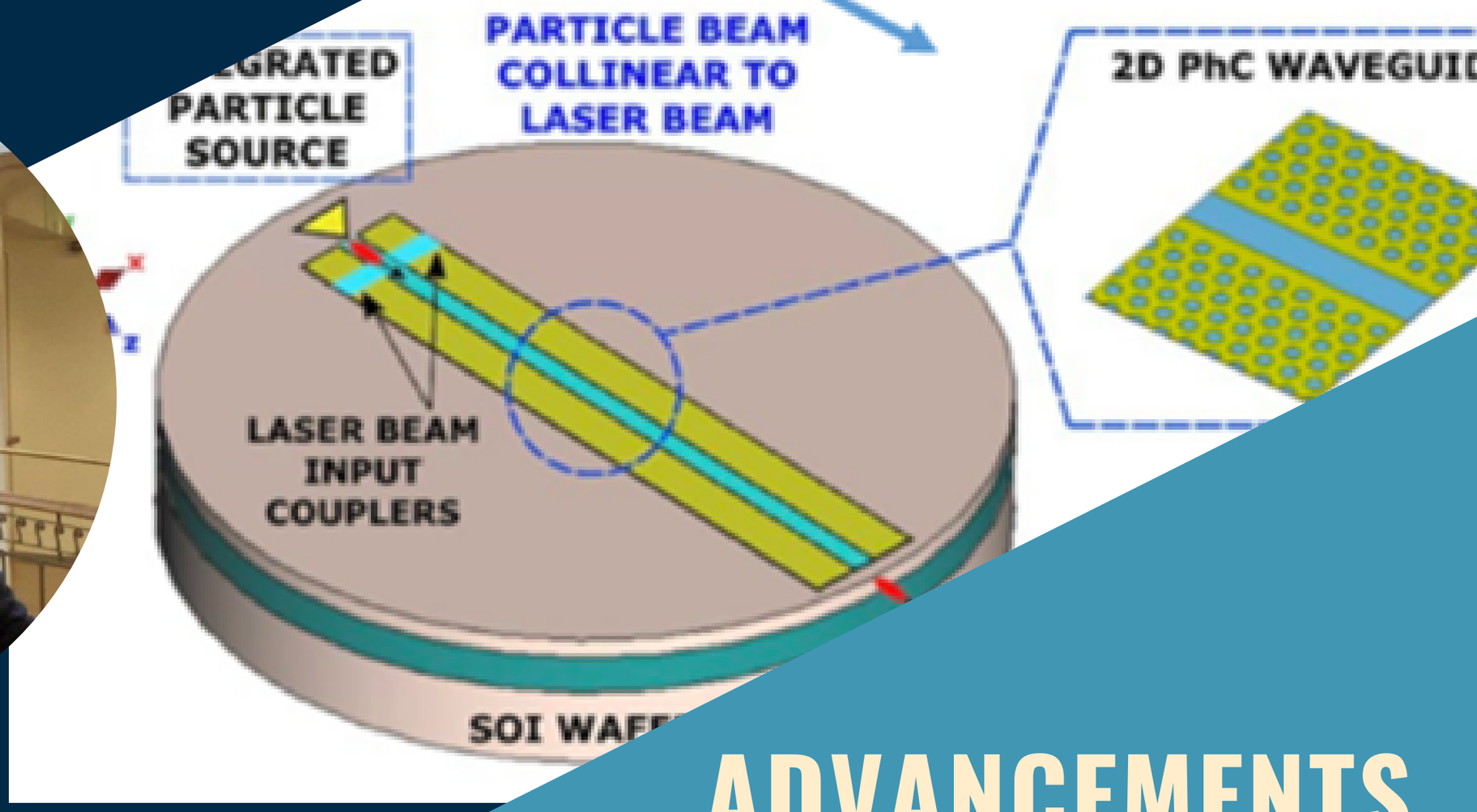
GINO
SORBELLO



ADVANCEMENTS IN ON-CHIP LASER-DRIVEN PARTICLE ACCELERATORS: RESEARCH, DEVELOPMENTS AND FUTURE PERSPECTIVES

Conventional and electric-bandgap (EBG) dielectric hollow-core waveguides, powered by laser sources, represent a promising new frontier in particle accelerator research since the miniaturization achieved by scaling wavelengths up to optical frequencies enables very large gradients per unit length. Moreover, dielectrics' higher damage threshold compared to metals, along with EBG microstructures offer a "virtually" higher-order-mode-free operation, further enhancing the potential of the dielectric micro-structures.

The seminar explores the physics and technology of Laser-Driven Structure-Based Accelerators that can leverage on the availability of powerful, stable laser sources and fabrication technologies developed for telecommunications.

The work conducted within the framework of the INFN National-Scientific-Commission-5 MICRON (MIniaturised aCceleRatOrs Network) experiment will be presented, covering both general system design choices and other aspects such as fabricability, scalability, thermal budget, and more.

ESPRESSO SEMINARS
5 GIUGNO 2024 | ORE 15:00
AULA AZZURRA - LNS

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