

Photonics Lecture

12 June 2025 | 16h | A1

Harnessing 2D Materials for Quantum Applications and Workforce Development in AI Semiconductors & Quantum Technologies

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Two-dimensional (2D) materials represent a rapidly expanding frontier in condensed matter physics, owing to their extraordinary physical properties and transformative potential across a range of technological applications. In this talk, I will highlight early-stage research initiatives currently underway in my laboratory, with a particular emphasis on investigating the quantum properties of 2D systems and their implications for emerging quantum technologies. In parallel, I will discuss broader efforts aimed at addressing the national shortage of skilled professionals in the critical areas of Artificial Intelligence (AI), semiconductors, and quantum technology. These efforts encompass integrated educational, training, and research programs designed to cultivate a diverse and highly skilled workforce prepared to meet the demands of industry and research in these strategic sectors.



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