Talk 2

CEDT SUMMER SEMINAR SERIES:

Engineering Material Properties for Next-Generation Silicon Photonics

Thursday, June 11th, 2026

11:00 A.M. - 12:00 P.M.

In-Person: JHE 326H

Silicon photonics continues to be a key technology for optical communications and integrated photonic systems, driving demand for new materials and engineering strategies that overcome limitations of the conventional silicon-on-insulator platform. This work explores a range of material engineering techniques – including ion implantation, compositional engineering, and germanium condensation – to tailor thermal, optical, and electronic properties for advanced applications in silicon photonics. Together, these approaches can expand the capabilities of silicon, silicon nitride, and germanium while remaining compatible with established semiconductor manufacturing processes, demonstrating how tailored material properties can be leveraged to improve the performance and efficiency of integrated silicon photonics.

Engineering Physics

Greg Thomas

Ph.D Student in the Knigths Research Group

Greg's research focuses on developing power-efficient devices & material engineering techniques for next-generation silicon photonics.

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