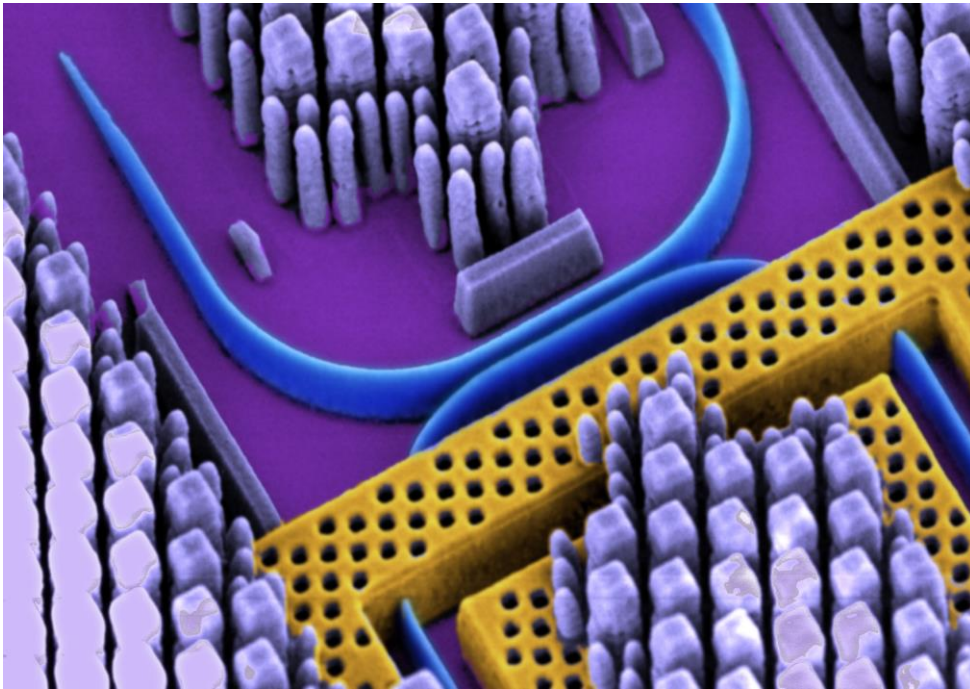


Offered again after 3 years of absence. Revised and renewed!

ECE 452: EM Waves and Photonics



EM waves, polarizations, and applications to photonic and electro-optical devices, optical waveguides. Extended to cover practical applications of EM concepts to **photonic integrated circuits**.

- **EM waves:** propagation, reflection, transmission, multilayered media, matrix optics
- **Waveguide optics:** waveguides, fibers, dispersion, attenuation
- **Passive devices:** directional couplers, optical ring resonators and add-drop filters
- **Active devices:** amplitude modulators, phase modulators, photodetectors
- **Integrated photonic circuits** for optical communications

Instructor: Yurii Vlasov, John Bardeen Chair Professor, inventor of silicon photonics

<https://courses.grainger.illinois.edu/ece452/fa2023/>

Pre-requisite: ECE350