
OSSC Online Meeting

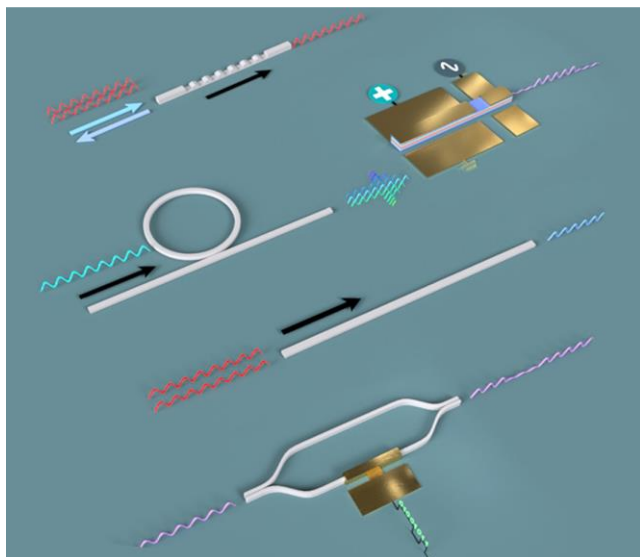
“Compound Semiconductor-on-Insulator: Integrated Photonics Beyond Silicon”

Dr. Galan Moody, Assistant Professor, ECE, UCSB

Registration Required [Register Here](#)

Online Logon Opens 7:30pm, Presentation Starts 8:00pm

Abstract: Silicon-on-insulator has been an indispensable tool for passive photonics, but it is lacking in many aspects that are needed for the next generation of advanced photonic integrated circuits. Beyond silicon, there is a spectrum of alternative crystalline materials—compound semiconductors—that have the potential to enable radically new device concepts and technologies for high-speed and energy-efficient computing, communications, and networking.



In this presentation, I will highlight our recent progress in developing AlGaAs-on-insulator (AlGaAsOI) integrated photonic devices for both classical and quantum applications. AlGaAsOI boasts several advantages especially for quantum photonics, including ultrabright chip-scale entangled-photon pair generation, negligible two-photon absorption at 1550 nm, low-loss reconfigurable interferometers with high extinction, high-efficiency and low-noise waveguide-integrated single-photon detectors, and prospects for low $V_{\pi}L$ modulators. Combined, these components offer exciting prospects for a scalable and integrated quantum computing and communications platform.

Bio: Dr. Galan Moody joined the Electrical and Computer Engineering Department at the University of California Santa Barbara as an Assistant Professor in July 2019.



Prior to moving to Santa Barbara, he was a Research Scientist (2015-2019) at the National Institute of Standards and Technology (NIST) in Boulder, Colorado, a National Research Council postdoctoral fellow at NIST (2013-2015), and a postdoctoral associate at the University of Texas Austin, USA (2013). He received his PhD in Physics (2013) and his BSc in Engineering Physics (2008) from the University of Colorado Boulder.

He is a recipient of an AFOSR Young Investigator Program award (2020) and an NSF CAREER award (2021) for research on integrated quantum photonic technologies. He serves as a thrust co-lead for UCSB's Quantum Foundry, on

the technical program committees for CLEO, IEEE EDTM, IEEE RAPID conferences, on the board for the Bristol Quantum Information Technologies workshop, as a guest editor for the *Journal of Lightwave Technology* and on the editorial board for *IOP's Journal of Physics: Photonics*.