

# Monday Morning, November 7, 2022

**Nanoscale Science and Technology Division**

**Room 304 - Session NS3+EM+TF-MoM**

**Nanophotonics, Metasurfaces and Plasmonic Systems  
Including Inverse Design Methods**

**Moderators:** David Czaplewski, Argonne National Laboratory, Nikolai Klimov, National Institute of Standards and Technology

11:20am **NS3+EM+TF-MoM-10 Quantum and Nonlinear Photonics in Silicon Carbide with Inverse Design**, *Daniil Lukin, J. Vuckovic*, Stanford University **INVITED**

Integrated photonics technology has achieved the degree of scalability and complexity needed for building up photonic quantum computers based on optically-addressable spin qubits such as color centers. However, at present none of the industry-standard photonics materials host high quality color centers. Silicon Carbide has the potential to become a technologically-mature platform that can close this longstanding gap between classical and quantum photonics devices. I will discuss the recent progress of Silicon Carbide integrated photonics for quantum and nonlinear applications, as well as the applications of inverse-design for novel photonics functionalities.

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