

Physics Colloquium

Prof. Kai-Me Fu

“Synthesis and characterization of quantum defects: from deep centers in diamond to shallow impurities in ZnO”

Point defects in crystals are the solid state analog to trapped ions. Thus these “quantum defects” have gained popularity as qubit candidates for scalable quantum networks. In this talk, I will introduce some of the basic quantum defect properties desirable for quantum network applications and give some illustrative examples of recent successes toward scalable quantum networks, highlighting my own work on single NV centers in diamond and shallow donors in ZnO. I will also discuss outstanding challenges (or opportunities) toward scaling quantum systems based on defects, which include photon loss and maintaining spin and optical coherence in integrated devices.

Kai-Mei is an Associate Professor of Physics and Electrical and Computer Engineering at the University of Washington. Her research focuses on understanding and engineering the quantum properties of point defects in crystals, and utilizing these properties in photonic devices for quantum information and sensing applications. Kai-Mei Fu received her A.B. in Physics from Princeton University in 2000 and Ph.D. in Applied Physics from Stanford University in 2007.

Thursday October 15th at 4:25 via Zoom

If you are outside the Lehigh Physics Department, please email Marina Long (mal516@lehigh.edu) for a link.