

Speaker: Dr. Andrew Mounce, Sandia National Lab

Title: Nanoscale Magnetometry Using Nitrogen Vacancies in Diamond

Abstract: The properties that make nitrogen vacancies in diamond good qubits, for example long coherence times at room temperature, also make them excellent sensors for magnetic fields. In this presentation, I will discuss the properties of nitrogen vacancies and how to utilize them for magnetometry of other materials from DC up to GHz frequencies. I will show coherent spin control of nitrogen vacancies performed at Sandia and discuss our Quantum Sensed Nuclear Magnetic Resonance Discovery Platform which we are developing at the Center for Integrated Nanotechnologies (CINT). Finally, I will discuss our research directions and provide examples of the utility of using nitrogen vacancies for detecting magnetism in condensed matter physics.