

Lighthouse Lightning Talk - Integrated Spin Systems for Quantum Sensors (7'+3')

Thursday 29 June 2023 10:40 (10 minutes)



Figure 1: Speaker –Vladimir Dyakonov

Abstract

Quantum sensing combines a wide range of technologies to measure physical quantities such as magnetic and electric fields, distances, velocities, forces, and accelerations with a precision that exceeds that of classical detection methods. The most mature system used for quantum sensing is NV spin centers in diamond, with the advantage that they offer outstanding spin coherence properties at room temperature in a chemically and biologically inert host material. We will present novel material systems with spin defects for quantum sensors that can also operate at room temperature but are positionable closer to the object of study. The goal is to develop high-performance sensors (based on ensembles or single spins) for various applications, fast imaging and spectroscopy technologies with super-resolution capabilities for real-time investigation of

chemical reactions, and the investigation of solid-state phenomena.

Presenter: Prof. DYAKONOV, Vladimir (Universität Würzburg)

Session Classification: Quantum Hardware