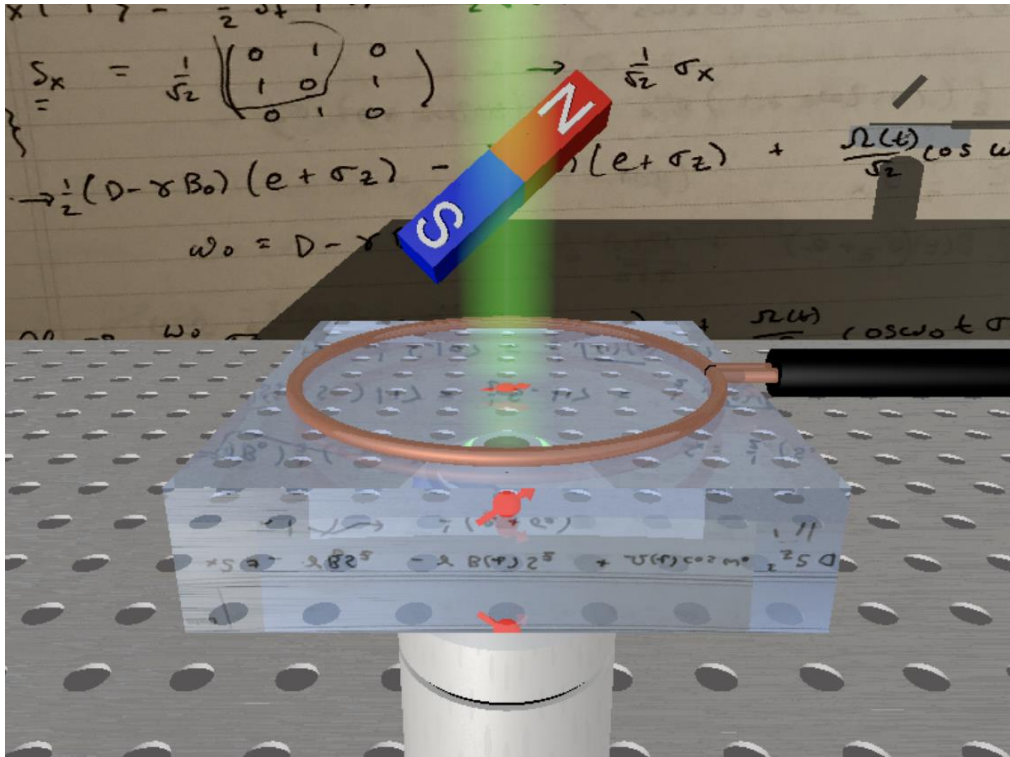
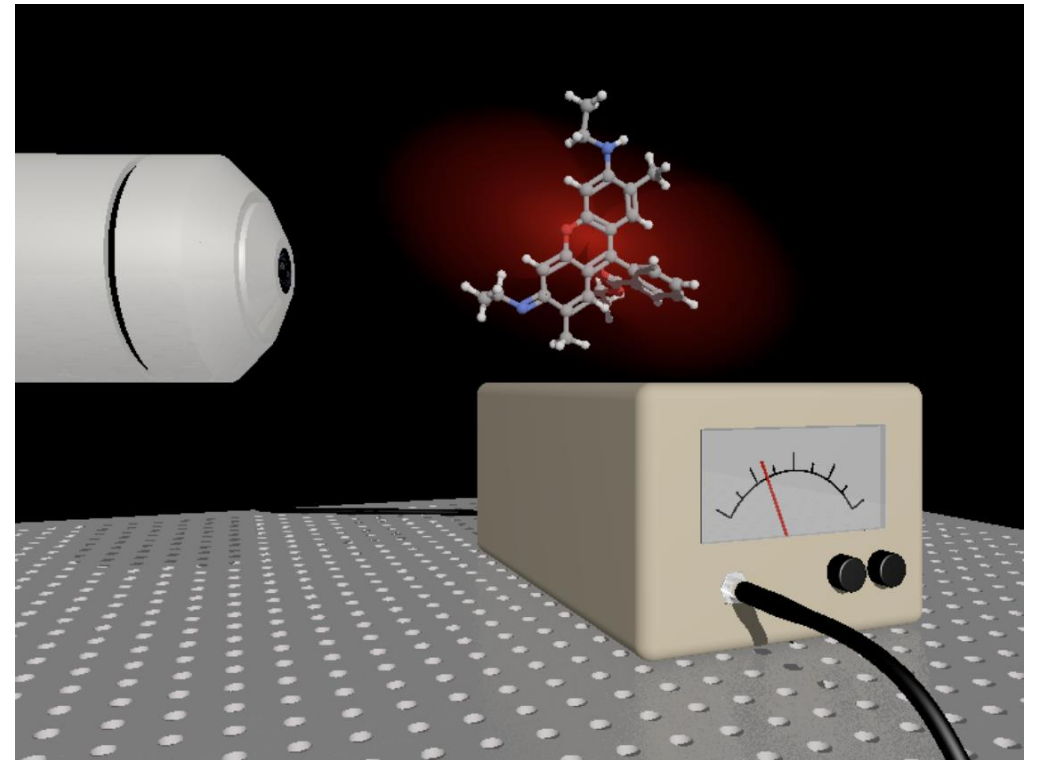


Quantum and quantum-inspired microscopy of molecules and materials

Nanoscale opto-magnetic resonance microscopy using quantum sensors

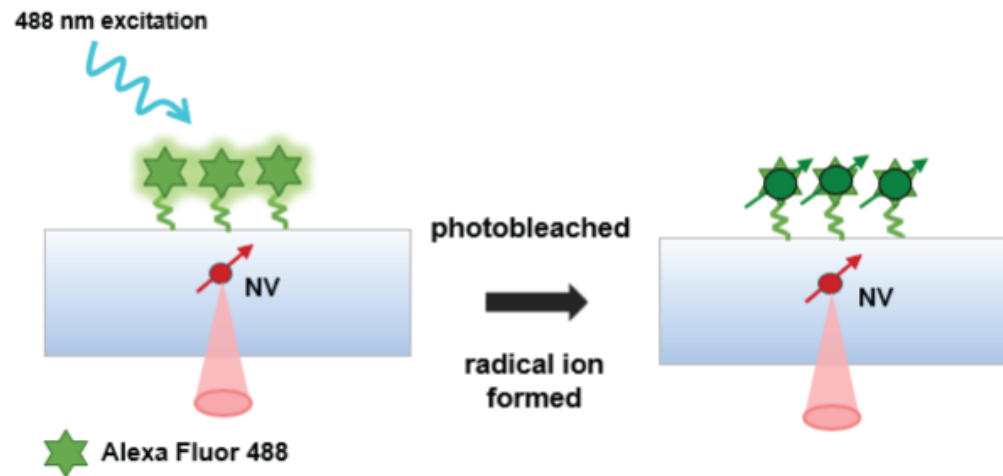
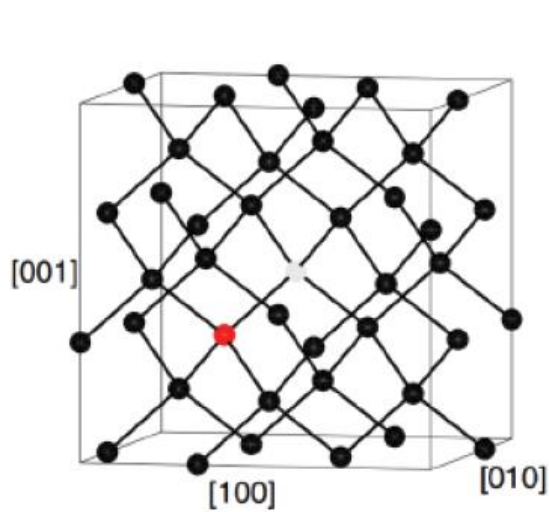


Quantum limits of single-molecule microscopy

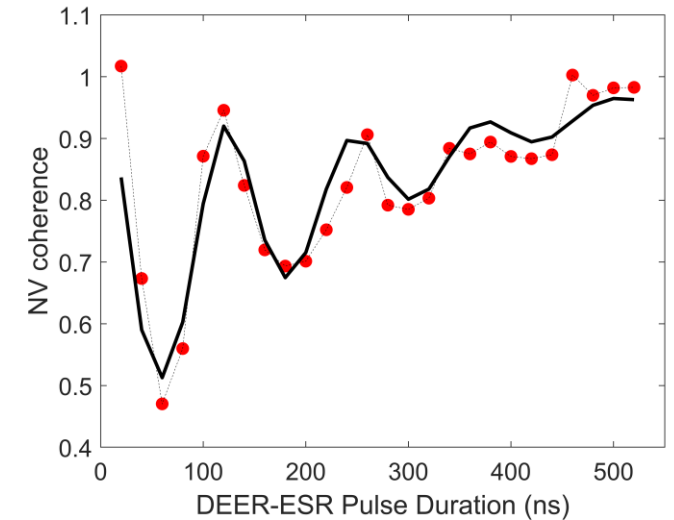


Interfacing single quantum defects with photo-switchable spin beacons

Nitrogen-vacancy (NV) centers hold potential for nanoscale magnetic resonance spectroscopy and imaging



Results: time- and light-dependent spin activation

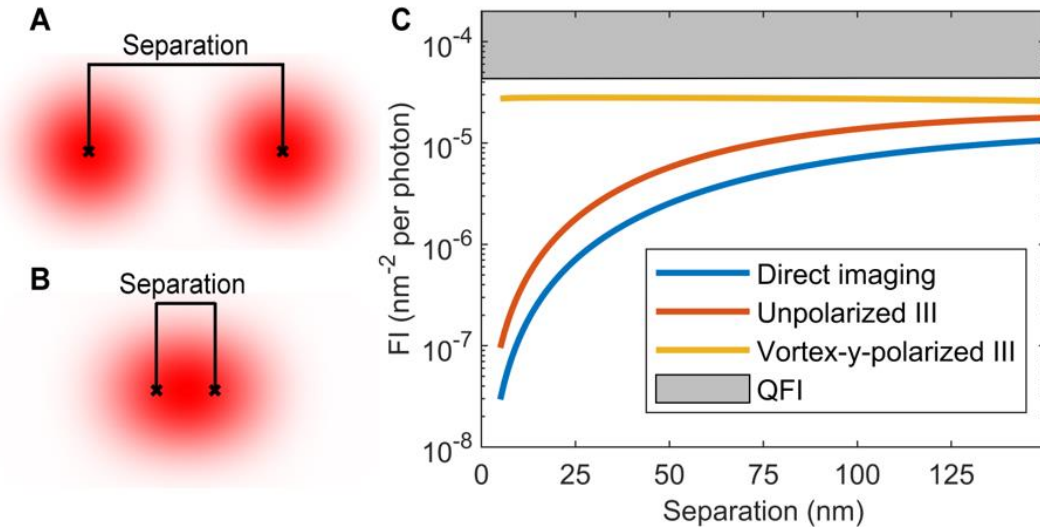


Challenge: inverse relation between NV depth and spin coherence

Our solution: develop photoswitchable, independently localizable reporter spins based on commonly used super-resolution dyes

Quantum-inspired super-resolution of fluorescent point-like sources

Quantum parameter estimation theory has recently led to a reconsideration of Rayleigh's resolution criterion



We are the first to experimentally demonstrate a new kind of quantum-inspired super-resolution imaging

