

Abstract Submitted  
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**Depletion-based techniques for super-resolution imaging of NV-diamond** JEAN-CHRISTOPHE JASKULA, ALEXEI TRIFONOV, DAVID GLENN, RONALD WALSWORTH, Harvard-Smithsonian — We discuss the development and application of depletion-based techniques for super-resolution imaging of NV centers in diamond: stimulated emission depletion (STED), metastable ground state depletion (GSD), and dark state depletion (DSD). NV centers in diamond do not bleach under optical excitation, are not biotoxic, and have long-lived electronic spin coherence and spin-state-dependent fluorescence. Thus NV-diamond has great potential as a fluorescent biomarker and as a magnetic biosensor.

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