

Abstract Submitted
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Progress on NV-diamond ensemble magnetometry DAVID LE SAGE, Harvard-Smithsonian, LINH MY PHAM, Harvard, KEIGO ARAI, MIT, ANDREW HIGGINBOTHAM, Harvard, PAUL STANWIX, University of Western Australia, YE ZHAO, Harvard, RONALD WALSWORTH, Harvard-Smithsonian — We discuss progress on new techniques for precision magnetometry using ensembles of NV centers in diamond. One technique uses the large refractive index diamond substrate as a light guide to achieve much higher fluorescence detection efficiency than provided by high NA microscope objectives. An alternate approach measures the absorption of the NV excitation light by an optically thick diamond sample. In all approaches, diamond sample engineering plays a crucial role in finding an optimal balance between the NV center density and NV spin coherence time.

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