

Toward entangled spins in nanodiamonds for biosensing

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Diamond color centers like the nitrogen-vacancy (NV) have shown much promise for nanoscale sensing of magnetic and electric fields and temperature. To get the full benefits from the quantum nature of the NV, two or more entangled NVs are needed. While this has been done in bulk crystals, implementing it in nanodiamonds provides unique challenges, especially for the sub 10 nm sizes needed for the most interesting biosensing applications. In this talk I will review recent advances in nanodiamond growth and optimization, and the implantation of high-quality NVs.