

Abstract Submitted
for the TSS12 Meeting of
The American Physical Society

Design of an experiment to study optically-active centers in diamond nanoparticles¹ ANKIT SINGH, KUNAL TIWARI, SURESH SHARMA, UT Arlington — The silicon-vacancy (SiV) and nitrogen-vacancy (NV) complexes in diamond nanoparticles (NPs) are optically active centers, which produce single photon events. These centers may be formed when a silicon atom from the silicon substrate often used in CVD growth or nitrogen from impurities in the feed gas ends up next to a vacancy in the diamond lattice. Because of their stability and high quantum efficiency, SiV and NV centers in diamond NPs are attractive for applications in quantum computing, optics, biotechnology, and medicine. We briefly review our recently published results on diamond NPs, describe the design of an experimental system for carrying out *in-situ* optical spectroscopy and time-correlation measurements, and show preliminary photoluminescence data.

¹R Chakraborty, S. C. Sharma, J. K. RaRoque, J. Nano Res 12, 123 (2010)

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Date submitted: 21 Feb 2012

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