

Abstract Submitted  
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**Two photon excited fluorescence from diamond nanoparticles** ANKIT SINGH, MATHIAS AJAEROH, SAMAR MOHANTY, SURESH SHARMA, University of Texas at Arlington — The possibility of two photon excited fluorescence by diamond nanoparticles is an interesting nonlinear phenomenon. We have grown 20-100 nm diamond nanoparticles by using chemical vapor deposition (CVD) and characterized their properties by using complementary techniques of AFM, SEM, and Raman spectroscopy.<sup>1,2</sup> In this work, we have utilized femtosecond laser based two-photon excitation to study the emission of visible light ( $\sim 530$  nm) as functions of the excitation wavelength (750-850 nm), excitation power, and size of the NPs. These results and their potential applications will be discussed.

<sup>1</sup>R. Chakraborty, S. C. Sharma, and J. K. LaRoque, *J. Nano Research*, **12**, 1123 (2010)

<sup>2</sup>R. Chakraborty and S. C. Sharma, *Physica B*, **406**, 4170 (2011)

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