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Electron spin resonance detection and identification of nitrogen centers in nanodiamonds

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Abstract

Individual nitrogen centers N^0 and nitrogen pairs N_2^+ have been detected and identified in natural diamond nanocrystals by means of the high-frequency electron spin resonance method. The N^0 nitrogen centers have been observed in synthetic diamond nanocrystallites with a size of less than 10 nm produced by high-temperature high-pressure sintering of detonation nanodiamonds. Thus, the possibility of the stable state of impurity nitrogen atoms in diamond nanoparticles has been demonstrated. © 2009 Pleiades Publishing, Ltd.

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