

Abstract Submitted
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Dynamics of ^3He Impurities in Solid ^4He near the Apparent Super-solid Transition¹ CHAO HUAN, SUNG SU KIM, LIANG YIN, JIAN-SHENG XIA, NEIL SULLIVAN, University of Florida, DONALD CANDELA, University of Massachusetts, Amherst — We report measurements of the nuclear spin-spin and nuclear spin-lattice relaxation times for ^3He impurities in solid hcp ^4He for a molar volume of 21 cm^3 . The ^3He concentrations range from 20 to 2000 ppm and the relaxation times were measured for temperatures $1.4\text{ K} > T > 0.010\text{ K}$. The results are discussed in terms of the dynamics of the ^3He impurities and their scattering by other impurities and by other defects. In addition we report new results for the phase separation of the ^3He from the ^4He and the formation of ^3He nanodroplets in the solid ^4He matrix.

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