Coherence Times of Large-Spin Ensemble in Transient Regime

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Abstract

© 2016, Springer Science+Business Media New York.Rabi oscillations in the ensemble of weakly interacting electron or nuclear spins in solids are theoretically studied. A statistical theory which allows for calculation of the coherence times in the transient regime is presented in the general case of arbitrary spin value ≥ 1/2. Analytical expressions of the coherence times depending on the spin, temperature, spin concentration, and the Rabi frequency are obtained.

Keywords

Magnetic resonance, Quantum computation, Rabi oscillations