

Electron Spin Resonance of Mn^{2+} in $\text{Eu}_2\text{M}''_3(\text{NO}_3)_{12} \cdot 24\text{H}_2\text{O}$ ($\text{M}'' = \text{Zn, Co}$) Single Crystals

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Electron spin resonance of Mn^{2+} doped in $\text{Eu}_2\text{M}''_3(\text{NO}_3)_{12} \cdot 24\text{H}_2\text{O}$ ($\text{M}'' = \text{Zn, Co}$) single crystals has been studied at 295 and 77 K using an X-band spectrometer. The observation of resolved Mn^{2+} spectra in $\text{Eu}_2\text{Co}_3(\text{NO}_3)_{12} \cdot 24\text{H}_2\text{O}$ at 295 K have been interpreted in terms of random modulation of interaction between Mn^{2+} and divalent cobalt ions by the rapid spin-lattice relaxation of cobalt ions. T_1 of divalent cobalt has been estimated to be $\sim 5 \times 10^{-12}$ s at 295 K. The superposition model is applied to the zero-field splitting parameter D . — PACS: 76.30 F

Key words: ESR; SPM; Mn^{2+} ; Co^{2+} ; Spin Lattice Relaxation.