$^{87}$Rb Nuclear Magnetic Resonance Measurements of RbKSO$_4$

Single Crystal MOOHEE LEE, KIHYEOK KANG, B. J. MEAN, SUNG HOON KIM, Konkuk University, Seoul 143-701, Korea, AE RAN LIM, Jeonju University, Jeonju 560-759, Korea — $^{87}$Rb Nuclear Magnetic Resonance (NMR) measurements have been performed on a single crystal of ferroelectric RbKSO$_4$ at 4.8 and 8.0 T from room temperature down to 70 K. Two first-order phase transitions were reported to occur at 116 and 820 K. The crystal axes of RbKSO$_4$ single crystal are well defined by XRD and NMR measurements. NMR spectrum, shift, linewidth, spin-lattice relaxation rate $1/T_1$ and spin-spin relaxation rate $1/T_2$ are measured as a function of temperature and rotation angle of the crystal axis to the magnetic field. The central peak of $^{87}$Rb NMR spectrum at room temperature shows a different behavior for the three crystal axes. The satellite peaks are extremely broad compared with the central peak. The spin-lattice relaxation rate $1/T_1$ significantly decreases as temperature goes down. The spin-spin relaxation rate $1/T_2$ is almost same and independent of the temperature variation.