^{1}H NMR Study of Molecular Motions in Thiourea Pyridinium Nitrate Inclusion Compound

M. Grottel[a], A. Kozak, A. Pajzderska, W. Szczepański, and J. Wąsicki

Faculty of Physics, A. Mickiewicz University, 61-614 Poznań, Poland
[a] Department of Physics, Agricultural University, 60-637 Poznań, Poland

Reprint requests to Prof. J. W., Faculty of Physics, A. Mickiewicz University, ul. Umultowska 85, 61-614 Poznań, Poland

Z. Naturforsch. **59a,** 505 – 509 (2004); received April 6, 2004

The proton NMR second moment and spin-lattice relaxation time have been studied for polycrystalline thiourea pyridinium nitrate inclusion compound and its perdeuderated analogues in a wide temperature range. The reorientation of two dynamically different pyridinium cations around their pseudohexagonal symmetry axis taking place over inequivalent barriers have been revealed in the low-temperature phase. Activation parameters for these motions have been derived. A symmetrization of the potential barriers has been observed at the transition from intermediate to the high temperature phase. The motion of thiourea molecules has been also evidenced, but could not be unambiguously described.

Key words: NMR; Molecular Motion; Inclusion Compounds.