

# Dynamic Properties and Phase Transitions in $A_2ZnBr_4$ ( $A = (CH_3)_4N$ and $(CH_3)_4P$ ) as Studied by $^{79}Br$ NQR and Multinuclear NMR\*

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In order to understand the mechanism of ferroelastic phase transitions in  $A_2ZnBr_4$  ( $A = (CH_3)_4N$  and  $(CH_3)_4P$ ), the temperature dependences of  $^{79}Br$  NQR frequencies and the spin-lattice relaxation times were measured. The temperature dependences of the  $^1H$  and  $^{31}P$  spin-lattice relaxation times were measured as well for a possible correlation between the cation dynamics and the phase transition. Although the phase transition temperatures of these two compounds differ much ( $\sim 100$  K), the correlation times for the cation reorientation at the individual transition temperatures amount to some  $10^{-11}$  s for both compounds.

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