

^{13}C NMR study on α -(BEDT-TTF) $_2$ CsCd(SCN) $_4$

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The title compound is a charge transfer complex of BEDT-TTF donor and CsCd(SCN) $_4$ anion. While the crystal symmetry is categorized as α type, the crystal and band structures are considered to be similar to that of the θ type MM' (SCN) $_4$ salts, a typical charge ordering /disproportionation system [1]. We performed ^{13}C NMR measurements on a selectively ^{13}C labeled (center double bond sites; $^{13}\text{C}=\text{C}$) single crystal of this compound to perform a systematic comparison with the θ type MM' (SCN) $_4$ system.

Because of the strong nuclear interaction between two ^{13}C 's, NMR spectrum was found to exhibit a doublet structure (the so-called Pake doublet) in the whole temperature range as shown in Fig. 1. The observed spectrum does not exhibit any appreciable change, which means that neither electronic nor structural change takes place down to low temperatures. Temperature dependence of NMR shift (K) and relaxation rate ($1/T_1$; Fig. 2) was explained by a Korringa behaviour ($T_1TK^2=\text{const.}$), which is expected in a standard metallic state. It is interesting to know that this compounds does not show any anomaly at ambient pressure. A comparison of Korringa constant with the other ET materials will be given.

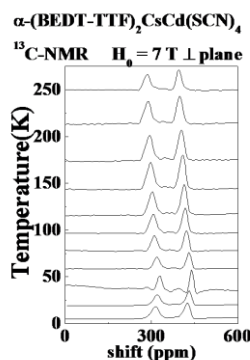


Fig. 1 NMR spectra at ambient pressure.

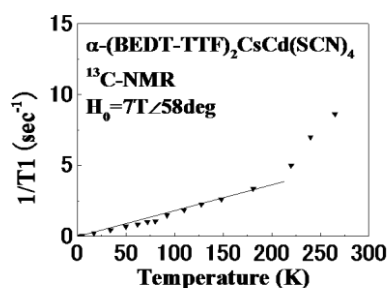


Fig. 2 Temperature dependence of relaxation rate.

[1] R. Kondo *et al.*, Solid State Commun. **137**, (2006) 637