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## Slow magnetic relaxations and metamagnetic transition in quasi 1 D magnet [Co(NCS)<sub>2</sub>(4-(4-chlorobenzyl)pyridine)<sub>2</sub>]<sub>n</sub>

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In the crystal structure of [Co(NCS)<sub>2</sub>(4-(4-chlorobenzyl)pyridine)<sub>2</sub>]<sub>n</sub> (abbr. CIBP) the Co(II) cations are octahedrally coordinated by two terminal CIBP ligands and four thiocyanato anions and are linked into ferromagnetic chains by pairs of  $\mu$ -1,3-bridging thiocyanato anions. Due to small antiferromagnetic interchain interactions the compound is antiferromagnet with the Néel temperature  $T_N = 3.8$  K. With increasing magnetic field a metamagnetic transition is observed in field of 260 Oe. Magnetic relaxations in the ground state are well described by the generalized Debye model with one mean relaxation time which is thermally activated according to the Arrhenius equation with the energy barrier  $\Delta E/k_B = 37.1$  K. The CIBP compound may be classified as so called Single Chain Magnet (SCM) which shows spin dynamics predicted by Glauber [1] for Ising chain systems. An interesting feature is that SCM properties are observed in the antiferromagnetic (ordered) state.

References

[1] R. J. Glauber. Time-Dependent Statistics of the Ising Model. *J. Math. Phys.*, 4(2):294, Feb. 1963.

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