

**MAGNETIC AND THERMODYNAMIC PROPERTIES OF
Cu(NH₃)₂Ag₂(CN)₄ AN $S = 1/2$ QUASI - TWO DIMENSIONAL
MAGNET.**

**A. Vlček^a, M. Orendáč^a, A. Orendáčová^a, M. Kajňaková^a, T.
Papageorgiou^b, J. Chomič^c, J. Černák^c, A. Feher^a**

^aFaculty of Science, Institute of Physics, Centre of Low Temperature Physics, P.J.
Šafárik University, Park Angelinum 9, 041 54 Košice, Slovakia

^b Department of Experimental Physics V, University of Bayreuth, Universitätstrasse
30, D-95447 Bayreuth, Germany

^c Faculty of Science, Institute of Chemistry, P.J. Šafárik University, Moyzesova 11, 041
54 Košice, Slovakia

The crystal structure, thermodynamic properties and ESR spectra of Cu(NH₃)₂Ag₂(CN)₄ have been studied. The material consists of 2d sheets in which octahedrally coordinated Cu(II) ions are linked by diamagnetic [Ag(CN)₂]²⁻ units forming a square lattice. Although the susceptibility and specific heat data reveal the existence of short - range order at about 2 K, quantitative analysis of the experimental data confirmed that the magnetic behaviour differs from that expected for 2d Heisenberg magnet on the square lattice. Structural features responsible for the observed difference are discussed. In addition, it is suggested that additional degrees of freedom represented by rotational states of NH₃ units contribute to thermodynamic equilibrium properties in the milikelvin temperature range.

13.4 cm

Subject category :

3. Transition Metals, Alloys and Compounds

Presentation mode :

poster

Corresponding author :

Martin Orendáč

Address for correspondence :

Institute of Physics
P.J. Šafárik University
Park Angelinum 9
041 54 Košice, Slovakia

Email address :

orendac@kosice.upjs.sk

9.7 cm