

## MS35-P09 | NEW HETEROBIMETALLIC COMPLEXES OF Cu(II) AND Mn(II) WITH CYCLAM DERIVATIVES

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Nowadays, magneto-thermal effects become relevant not only by solving fundamental problems in solid physics, but also for the technological applications. One such phenomenon is the magnetocaloric effect that can be used in the thermal study of compound's magnetic properties, or for practical use, for example in magnetic refrigerators. There are several ferrimagnets in which the magnetocaloric effect was observed and also it was found that one-dimensional ferrimagnets under external magnetic field can pass to spin-liquid state (Luttinger spin liquid) and such transition can be technologically attractive [1, 2]. It is well known that systems based on one-dimensional bimetallic chains with Cu(II) and Mn(II) atoms ordered in alternating manner should show ferrimagnetic behavior [3].

Important step in the preparation of mentioned complexes is the selection of ligands, as they significantly influence the formation of chains and their arrangement in the crystal structure. We have undertaken study of a copper(II) compounds with central atom coordinated by the N-derivatives of cyclam (1,4,8,11-tetraazacyclotetradecane) and with Mn(II) atom that is tetracoordinated by chloride ligands. Such arrangement allows the formation of bimetallic chains with paramagnetic atoms bridged by chlorido ligand. Further details on the syntheses, characterizations and X-ray structure analysis of prepared compounds will be given.

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[1] P. Konieczny et al., *Inorg. Chem.*, 56 (2017) 2777.

[2] J. Strečka, T. Verkholyak, *J. Low Temp. Phys.* 187 (2017) 712.

[3] Y. Pei et al., *Inorg. Chem.*, 26 (1987) 138.