Thin films of octacyanido-bridged molecular magnets

M. Fitta,¹ T. Korzeniak,² P. Czaja,³ M. Bałanda,¹ and B. Sieklucka²

¹Institute of Nuclear Physics Polish Academy of Sciences,
Radzikowskiego 152, 31-342 Kraków, Poland
²Faculty of Chemistry, Jagiellonian University,
Ingardena 3, 30-060 Kraków, Poland
³Institute of Metallurgy and Materials Science Polish Academy of Sciences,
Reymonta 25, 30-059 Kraków, Poland

In the last few years, there has been a significant interest in the study of molecular magnets in a form of thin films, which is motivated by the possibility of applying these materials in spintronic devices. Among the group of cyanido-bridged coordination networks, the most studied compounds are thin films of hexacyanidometallates, while the reports on the preparation of thin films based on octacyanidometallates are quite rare.

This work presents synthesis and study of magnetic and structural properties of thin films based on transition metals octacyanides, in particular \( \text{Mn}^{II} \text{-} \text{L} \text{-} [\text{Nb}^{IV} \text{(CN)}_8]^4^- \) coordination networks (\( \text{L} \) - bridging ligand). The samples are obtained by electrostatic self-assembly using the dip-coating technique. Results of dynamic and static magnetic susceptibility, IR spectroscopy measurements and SEM analysis will be discussed.