MAGNETIC PROPERTIES OF Ni - COMPLEXES IN A HYDRAZONE STRUCTURE

E. Mosiniewicz-Szablewska[a], **A. Ślawska-Waniewska**[a], **K. Światek**[a], **M. Golebiewski**[b]

[a]Institute of Physics, Polish Academy of Sciences, Al. Lotników 32, 02-668 Warsaw, Poland

[b]Institute of Industrial Organic Chemistry, Annopol 6, 03-236 Warsaw, Poland

9.7 cm

The complex of 5-methylsalicylaldehyde 5'-chlorosalicyloyl hydrazone doped with Ni^{2+} ions has been studied with electron paramagnetic resonance (EPR) spectrometer and vibrating sample magnetometer (VSM) over the temperature range 2 - 300 K. The magnetization measurements, performed in the magnetic field of 1T, show that at low temperatures the Ni^{2+} ions are coupled by the antiferromagnetic exchange interactions. Above the Néel temperature $T_N \cong 11.5K$, the temperature dependendence of susceptibility of Ni - complexes follows the Curie - Weiss law.
The EPR spectrum observed at room temperature exhibits a broad anisotropic signal originating from Ni^{2+} ions. It is also found that at low temperatures the EPR signal experiences a sharp broadening and shifts to the lower field region. The intensity of this signal decreased with lowering the temperature and below 11 K this line disappears. Instead of that, additional lines with different resonance fields can be observed. It may be attributed to the formation of an antiferromagnetically ordered phase at low temperatures.

13.4 cm

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Corresponding author :
Dr Ewa Mosiniewicz-Szablewska

Address for correspondence :
Institute of Physics, Polish Academy of Sciences,
Al. Lotników 32/46
02-668 Warsaw, Poland

Email address :
mosin@ifpan.edu.pl