

Structural diversity of neutral bis-(β -iminoaldehyde) complexes of nickel(II).

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Streszczenie

Series of Ni(II) complexes with dianionic [N₂O₂] ligands were synthesized and characterised applying spectroscopic and X-ray diffraction techniques. The ligands were obtained by 1:2 condensation of ethylene- and propylenediamine with malonic aldehyde derivatives (R₂=H, R₁=H or OCH₃). Although the molecular formulae of the complexes are quite similar, the X-ray investigations have proved a significant structural diversity in the solid state. Among others, we found some simple nearly planar molecules stacked in the crystal lattice with electron density of six-membered rings delocalised over the chelate rings as well as some very complex polymeric nickel acetate bridged trinuclear complexes. The coordination of the nickel ion by surrounding oxygen and nitrogen atoms is square-planar in the simplest case and octahedral in the most complex one. Small topological differences in similar molecules generate completely different crystal structures. From magnetic studies, a small, negative value of J obtained confirms the occurrence of weak antiferromagnetic interactions between the Ni(II) ions in polymeric chain of the propylenediamine dialdehyde substituted derivative.

Słowa kluczowe

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