

Poster Presentations

Synthesis of NiO nanoparticles *via* thermolysis of (phenanthroline)NiCl₂ complex

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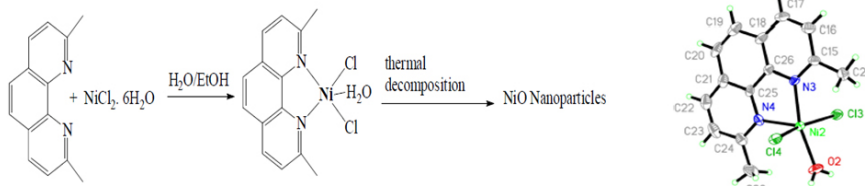
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Abstract

The synthesized (2,9-dimethyl-1,10-phenanthroline)NiCl₂ complex (see the Scheme) was characterized by elemental analysis, IR spectroscopy, UV-vis spectroscopy and differential thermal/thermogravimetric analysis (TG/DTA). The 3D structure of the desired complex was solved by single crystal X-ray diffraction (XRD) as triclinic system, as seen in Figure below.



The desired complex, subjected to thermal decomposition at low temperature of 400 °C in an open atmosphere, revealed a novel and facile synthesis of pure NiO nanoparticles with uniform spherical particle; the structure of the NiO nanoparticles product was elucidated on the basis of Fourier transform infrared (FT-IR), UV-vis spectroscopy, TG/DTA, XRD, scanning electron microscopy (SEM), energy-dispersive X-ray spectrometry (EDXS) and transmission electron microscopy (TEM), as seen in Figure below.

