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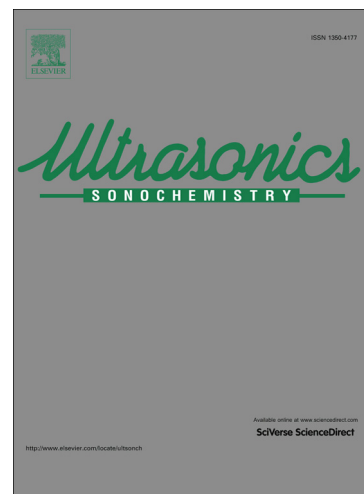
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# Sonochemical Synthesis and Characterization of New Nanostructures Cobalt(II) Metal-Organic Complexes Derived From the azo-cupling reaction of 4-Amino Benzoic Acid with Anthranilic acid, Salicylaldehyde and 2-Naphtol

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## Abstract

Nanostructures of three new cobalt(II) complexes, (CoL<sub>1</sub>). 0.5DMF. 1.5MeOH (**1**), [H<sub>2</sub>L<sub>1</sub>=5-(4-Carboxy phenyl azo) anthranilic acid], (Co(L<sub>2</sub>)<sub>2</sub>).1.5MeOH (**2**), [HL<sub>2</sub>=5-(4-Carboxy phenyl azo) salicylaldehyde] and (Co(L<sub>3</sub>)<sub>2</sub>).0.5DMF.0.5MeOH (**3**), [HL<sub>3</sub>=1-(4-Carboxy phenyl azo) 2-naphtol], have been synthesized by the reaction of H<sub>2</sub>L<sub>1</sub>, HL<sub>2</sub> and HL<sub>3</sub> with Co(OAc)<sub>2</sub>.4H<sub>2</sub>O through sonochemical process. Calcination of the nano-sized compounds **1-3** yield Co<sub>3</sub>O<sub>4</sub> nanoparticles at 450°C under air atmosphere. These nanostructures were characterized by X-ray powder diffraction (XRD) and Scanning Electron Microscopy (SEM). Thermal stability of compounds **1-3** was studied by thermogravimetric (TG) and differential thermal analyses (DTA).

**Keywords:** Nano-structure; Thermal decomposition; Sonochemical; Calcination; Azo Coordination Polymers.

## 1. Introduction

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