

Synthesis and characterization of Alumina-supported M(II) complexes (M=Ni, Cu and Zn) as new heterogeneous Photo-catalysts for degradation of organic dyes

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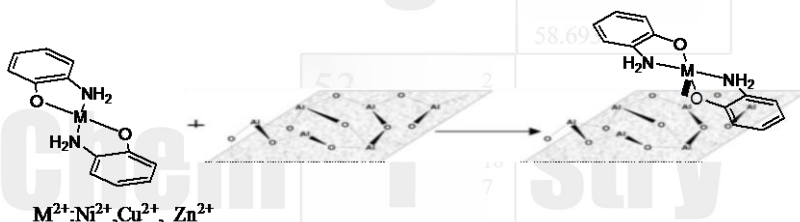
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In this study, the Ni(II), Cu(II) and Zn(II) complexes with bis(2-aminophenol), were synthesized and characterized by FT-IR, absorption spectroscopies, thermo gravimetric analysis (TG/DTA) and magnetic susceptibility [1-3]. Results of magnetic susceptibility revealed Ni(amph)₂ and Cu(amph)₂ are paramagnetism and Zn(amph)₂ is diamagnetism. For the preparation of the catalysts Alumina was activated by treatment at 500°C for 8 h.

Then, the alumina-supported catalysts were prepared (with 10% weigh) (Scheme 1) and were characterized by FT-IR, absorption spectroscopies and thermo gravimetric analysis (TG/DTA).

In chemistry, photocatalysis is the acceleration of a photoreaction in the presence of a catalyst. In catalyzed photolysis, light is absorbed by an adsorbed substrate. In photogenerated catalysis, the photocatalytic activity (PCA) depends on the ability of the catalyst to create electron-hole pairs, which generate free radicals (e.g. hydroxyl radicals: •OH) able to undergo secondary reactions.

The photocatalytic properties of M(II) complexes and their alumina-supported survey for methyl orange dye in 10⁻⁵ M aqueous solution under sunlight and lamp [4-5].



Scheme 1: The alumina-supported catalysts

References

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