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Title: Fast Kinetics and High Adsorption Capacity of Green Extract Capped Superparamagnetic Iron Oxide Nanoparticles for the adsorption of Ni(II) Ions

Authors: K. Nithya, Asha Sathish, P. Senthil Kumar, T. Ramachandran



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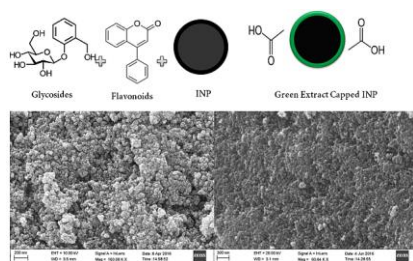
K.Nithya^{1*}, Asha Sathish^{2,4}, P. Senthil Kumar³, T.Ramachandran^{2,4}

¹Department of Chemical Engineering, Amrita University, Coimbatore, India,
E-mail: k_nithya@cb.amrita.edu

^{2,4}Department of Sciences, Amrita University, Coimbatore, India, E-mail: s_asha@cb.amrita.edu,
t_ramachandran@cb.amrita.edu

³Department of Chemical Engineering, SSN College of Engineering, Chennai, 603 110, India,
E-mail: senthilkumarp@ssn.edu.in

Graphical abstract



Highlights

- Fast kinetics and a high adsorption capacity of 227.20 mg/g is obtained
- Less expensive synthesizing route with use of limited chemicals
- Superparamagnetic iron oxide nanoparticles facilitated easy magnetic separation
- Smaller particle size and a high BET surface area helped in enhanced adsorption

Abstract: Superparamagnetic iron oxide nanoparticles were synthesized using co-precipitation technique by dissolving required stoichiometric proportions (1:2) of Fe^{2+} and Fe^{3+} salts in water. *Lantana camara* extract and ammonia solution were used as the stabilizing and precipitating

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