



Phytochemical Based Synthetic Approach of Iron Nanoparticles and Their Adsorption Potential for Dye Removal

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Abstract:

Iron nanoparticles (Fe-NPs) are mostly synthesized using sodium borohydride with using aggregation method, which is a high expensive and environmentally toxic process. Due to these drawbacks Fe-NPs were synthesized using green methods based on *Haloxylon recurvum* plant extract. These synthesized nanoparticles contains a high concentration of polyphenols etc. which act as reducing agent. These nanoparticles were then used for the degradation of congo red dye which is acidic in nature. The synthesized nanoparticles before and after sorption of dyes were characterized by a UV-visible, FTIR, SEM-EDX, XRD and specific surface area (BET). Kinetics for the degradation of congo red dye using these Fe-NPs fitted well to the pseudo second order reaction. The studies indicated that *Haloxylon recurvum* plant iron nanoparticles can be used as potential adsorbent for the removal of the hazardous dye from their aqueous solution.

Biography:

Dr. Warda Hassan born on 30-11-1982, in Bahawalpur city of Punjab, Pakistan. My parents are school teacher. I have schooling from Federal Government Public school, Bahawalpur, Pakistan. Then I got admission in Govt. Sadiq College Bahawalpur, Pakistan. After this, I joined The Islamia University, Bahawalpur, Pakistan for higher education. The medium of whole education was English. I cannot claim to be the first educated person of my family, but definitely I am the first female Ph.D doctor of my entire family. During my whole educational career in school, college and university, I participated in extracurricular activities especially sports. I have won multiple national level prizes in sports as well. I got enrolled in Ph.D with Dr. Sajida Noureen, Assistant professor in Analytical chemistry in The Islamia University, Bahawalpur, Pakistan. After completing Ph.D I got appointed as Lecturer in Analytical Chemistry



in The Women University, Multan. During my Ph.D, I have publications in international journals. I participated and presented papers in national and international conferences.

Publication of speakers:

- Dr.Warda Hassan...et al..Efficient adsorbent derived from *Haloxylon recurvum* Plant for the adsorption of Acid Brown dye: Kinetics, isotherm and thermodynamic optimization
- Dr.Warda Hassan...et al..*Euphorbia Hirta*: A rich source of Phytochemicals and Antioxidants
- Dr.Warda Hassan...et al..Potential biosorbent, *Haloxylon recurvum* plant stems, for the removal of methylene blue dye
- Dr.Warda Hassan...et al..A Green Nutraceutical Study of Antioxidants Extraction in *Cleome Brachycarpa* -An Ethnomedicinal Plant
- Leaves powder of *Syzygium Cumini* as an Adsorbent for Removal of Congo Red dye from Aqueous solution

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