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Comparative treatment of textile wastewater by adsorption, Fenton, UV-Fenton and US-Fenton using magnetic nanoparticles -functionalized carbon (MNPs@C)

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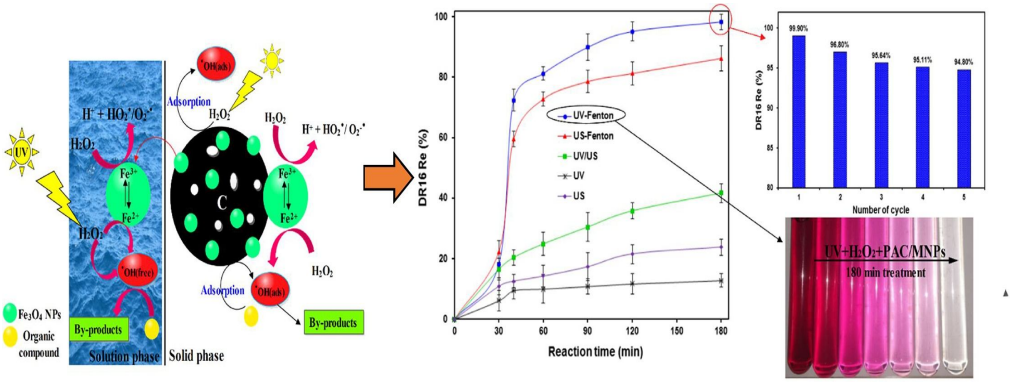
Graphical abstract



Highlights

- MNPs@C mesoporous composite was prepared, characterized and its adsorptive/catalytic performance was assessed.
- Dye removal efficiency of adsorption Fenton, UV-Fenton and sono-Fenton processes was compared.
- The removal efficiency was in accordance to the following order: UV-Fenton > US-Fenton > Fenton > adsorption.
- MNPs@C shows high adsorption capacity, high reusability and stability and low iron leaching.