Eco-friendly magnetic fluids as effective nanocatalysts for wastewater remediation

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Magnetic nanostructured materials have been found to be very effective in wastewaters decontamination [1]. Among the various synthesis methods, co-precipitation is a cost-effective technique for the manufacturing of magnetic nanoparticles, while the 'green' approach for their stabilization in water, using natural non-toxic capping agents, makes them good candidates as nanocatalytic formulations for water remediation. Several types of eco-friendly magnetic fluids were synthesized and further characterized, revealing excellent stability in suspension, a relatively uniform size distribution and suitable magnetic properties. Preliminary tests showed the good catalytic response and reusability of these magnetic fluids in the degradation of emerging pollutants from waters.

References:

[1] S.R. Pouran, A.A.A. Raman, W.M.A.W. Daud, Review on the application of modified iron oxides as heterogeneous catalysts in Fenton reactions, Journal of Cleaner Production, 64 (2014) 24-35.

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