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Pyrrolic-N-doped graphene oxide / Fe₂O₃ mesocrystal nanocomposite: Efficient charge transfer and enhanced photo-Fenton catalytic activity

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Highlights Pyrrolic N doped graphene oxide / Fe₂O₃ mesocrystal nanocomposite (NG-Fe₂O₃) was prepared by adjusting the oxygen-containing groups on graphene oxide.

- The morphology of NG-Fe₂O₃ contributes to a relatively large BET surface area and an intimate contact between NG and Fe₂O₃.
- The excellent electro-conductivity of pyrrolic-N doped GO result in the efficient separation of electron-hole pairs and fast conversion of Fe(II) and Fe(III) in photo-Fenton synergistic reaction.

Abstract:

Though α -Fe₂O₃ has attracted much attention in photocatalytic or Fenton-catalytic degradation of organic contaminants, its performance is still unsatisfactory due to fast recombination of electrons and holes in photocatalytic process and the difficult conversion of

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