

EUROPEAN CONFERENCE ON ENVIRONMENTAL APPLICATIONS OF ADVANCED OXIDATION PROCESSES

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PROGRAM AND
BOOK OF ABSTRACTS



ΕΑΑΟΡ - 4
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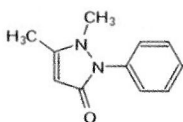
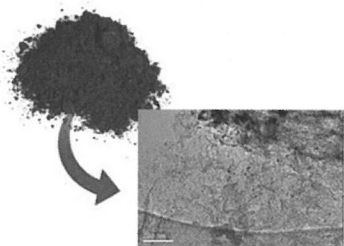
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HIGHLY STABLE IRON CATALYSTS OBTAINED BY CHEMICAL ACTIVATION OF SEWAGE SLUDGE WITH FeCl_3 FOR CWPO

PP2-19

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Iron-on-activated carbon catalysts for CWPO have been prepared through FeCl_3 -activation of sewage sludge. The purpose of the chemical activation with FeCl_3 is twofold; (i) produce carbon catalysts with a well-developed porous structure and (ii) introduce stable iron in the carbon matrix that acts as active phase in CWPO processes avoiding, or substantially decreasing, the iron leaching. The effect of the impregnation ratio was analysed. The carbons obtained show a fairly good catalytic activity but a high stability, with almost no iron leaching at the reaction conditions studied.

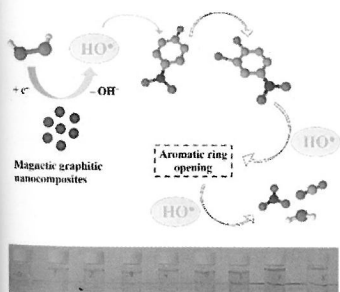
HYBRID MAGNETIC GRAPHITIC NANOCOMPOSITES FOR CATALYTIC WET PEROXIDE OXIDATION APPLICATIONS

PP2-20

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Hybrid magnetic graphitic nanocomposites (MGNC) prepared by inclusion of magnetite nanoparticles (obtained by co-precipitation) into an organic-organic self-assembly system, followed by calcination, revealed high activity for the catalytic wet peroxide oxidation (CWPO) of 4-nitrophenol solutions (5 g L^{-1}), with pollutant removals up to $1245 \text{ mg g}^{-1} \text{ h}^{-1}$ being obtained when considering the mass ratio [pollutant]/[catalyst] = 10. The stability of the MGNC catalyst against metal leaching was ascribed to the confinement effect of the carbon based material. These observations, together with the magnetically recoverable characteristics of MGNC, open new prospects for the wide use of this catalyst in highly efficient CWPO applications.