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Magnetic nano- and microparticles for metal removal and environmental applications: a review

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Abstract

Besides the numerous applications of magnetic particles in the fields of medicine, diagnostics, molecular biology and bioinorganic chemistry, a high potential exists for these particles in environmental sciences. Several methods have been proposed these last years for the separation of metals from wastewater using either micro- or nano-magnetic particles. We describe here the synthesis of such particles, compare their magnetic properties, and discuss the possibility of selectivity for metals ions, namely radionuclides. **To cite this article: A.-F. Ngomsik et al., C.R. Chimie 8 (2005).**

Résumé

Aux côtés des nombreuses applications des particules magnétiques dans les

aux en raison des nombreuses applications des particules magnétiques dans les domaines de la médecine, du diagnostic, de la biologie moléculaire et de la chimie bio-inorganique, un potentiel élevé existe dans le domaine de l'environnement. Plusieurs méthodes ont été proposées ces dernières années pour la séparation des métaux dans les déchets aqueux, utilisant, soit des micro-, soit des nanoparticules magnétiques. La synthèse et les propriétés magnétiques de ces particules sont décrites, ainsi que les possibilités d'optimisation de ces particules, notamment en vue de leur sélectivité vis-à-vis radionucléides. **Pour citer cet article : A.-F. Ngomsik et al., C.R. Chimie 8 (2005).**



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Keywords

Nanoparticles; Microspheres; HGMS; Magnetic particles; Remediation; Metal removal

Mots clés

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