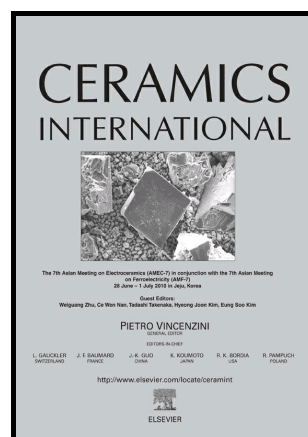


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Template-free synthesis of MgO mesoporous nanofibers with superior adsorption for fluoride and Congo red

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Abstract

MgO mesoporous nanofibers were obtained by a template-free electrospinning method. The unique bumpy-structure was obtained on the surface of nanofibers that could enhance the surface area and provide more active sites for adsorption. The formation mechanism of the bumpy-structure has been investigated. The as-prepared MgO nanofibers with a high surface area of $194.17 \text{ m}^2 \text{ g}^{-1}$ exhibited excellent adsorption capacities for fluoride of 237.49 mg g^{-1} . Furthermore, the MgO nanofibers showed selective adsorption for different organic dyes and have superior adsorption capacity for Congo red ($4802.27 \text{ mg g}^{-1}$). The adsorption processes for both fluoride

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