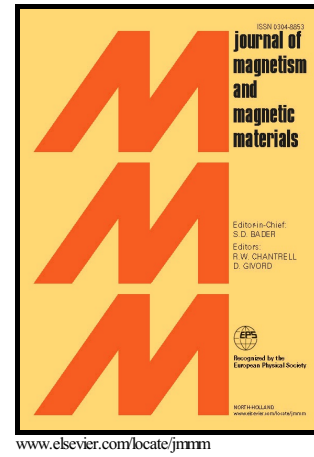


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**Magnetic behavior of iron-modified MCM-41 correlated with clustering processes
from the wet impregnation method.**

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Abstract

Magnetic MCM-41 type mesoporous silica materials were synthesized and modified with different iron loadings by the wet impregnation method. The evolution of iron speciation, depending on the metal loading and associated with a particular magnetic behavior was investigated by M vs. H curves, FC-ZFC curves, EPR spectroscopy and other complementary techniques such as SEM, TEM, and chemisorption of pyridine followed by FT-IR studies. A superparamagnetic contribution was larger for the lower loadings suggesting the high dispersion of very small sized iron nanospecies. However, this contribution decreased with increasing metal loading due to the growth of magnetically

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