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Changing the magnetic properties of ZrO₂: Mn nanocrystals by adjusting hydrothermal synthesis and conditions

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The aim of the present work was to study the magnetic properties of ZrO₂(Mn) nanocrystals prepared by the microwave-assisted hydrothermal synthesis using KMnO₄ precursor. The structural characterization was performed by means of X-ray diffraction. The morphology of the samples was studied by use of STEM microscopy. The magnetic properties were studied by means of AC susceptibility. All

the samples demonstrated the Curie-Weiss behaviour at higher temperatures with negative values of Curie-Weiss temperature.It was shown that the conditions of the synthesis, e.g. pH, can be adjusted to decrease the value of Curie-Weiss temperature and reduce antiferromagnetic interactions

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