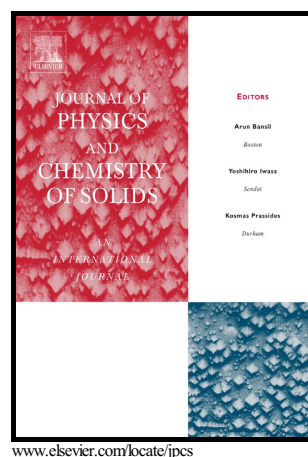


## Author's Accepted Manuscript

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PII: S0022-3697(16)30228-1  
DOI: <http://dx.doi.org/10.1016/j.jpcs.2016.11.025>  
Reference: PCS7912

To appear in: *Journal of Physical and Chemistry of Solids*

Received date: 27 June 2016  
Revised date: 10 November 2016  
Accepted date: 19 November 2016

Cite this article as: F. Schmit, L. Bois, R. Chiriac, F. Toche, F. Chassagneux, C. Descorme, M. Besson and L. Khrouz, Porous microspheres of manganese cerium mixed oxides by a polyvinylpyrrolidone assisted solvothermal method *Journal of Physical and Chemistry of Solids* <http://dx.doi.org/10.1016/j.jpcs.2016.11.025>

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**Porous microspheres of manganese-cerium mixed oxides by a polyvinylpyrrolidone assisted solvothermal method.**

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**Abstract**

Mixed cerium manganese oxides were synthesized using a polyvinylpyrrolidone (PVP) assisted solvothermal method. Materials obtained after calcination at 400°C were characterized by X-ray diffraction, scanning and transmission electron microscopies, electron paramagnetic resonance (EPR), Raman spectroscopy, thermal analysis and nitrogen adsorption/desorption isotherms. The influence of the synthesis parameters on the oxide structure, such as the Mn:Ce ratio or the amount of PVP, was discussed. Micrometric spheres of mixed Mn-Ce oxides, resulting from the aggregation of 100 nm porous snowflakes, were successfully synthesized. These snowflakes were formed from the aggregation of smaller oriented crystallites (size 4 nm). The hydrothermal stability of these materials was also investigated.

**Key words:** Crystallites, Segregation, Hydrothermal crystal growth, Nanomaterials, Oxides.

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