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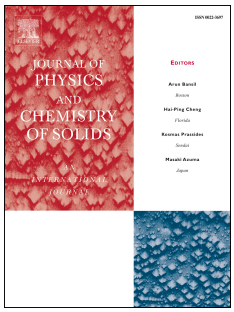

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Effect of the sintering method on microstructure and thermal and mechanical properties of zirconium oxophosphate ceramics $Zr_2O(PO_4)_2$

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Abstract

Due to an ultra-low thermal expansion, $Zr_2O(PO_4)_2$ could find many applications as a thermal shock resistant material. To this end, ceramic processing is a key step in order to reach best properties. In this work, $Zr_2O(PO_4)_2$ was sintered by conventional sintering and by the spark plasma sintering technique (SPS) with and without additive. Samples made by conventional sintering with ZnO as sintering aid have a maximum relative density of around 92 %. Microstructure is composed of large grains and microcracks can be observed. When doped