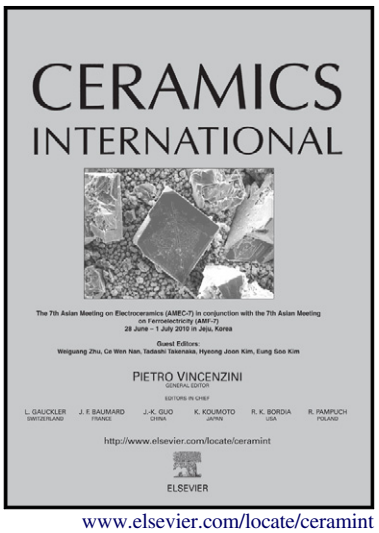

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MICROWAVE ASSISTED SINTERING OF IN-SITU CORDIERITE FOAM

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Abstract

In situ cordierite foams were fabricated using polymeric sponge replication method from ceramic slurry containing kaolin, magnesia and quartz mixtures. Ceramic preforms were processed using conventional and microwave assisted heating. The effect of two different sintering techniques on the in situ formation of the cordierite phase as well as the properties of the sintered foams were evaluated by SEM and XRD observations, density measurements, bending and compression tests. It was found that the microwave processing was completed in a shorter burning out and sintering cycle and produced structures having higher cordierite transformation ratio.

Keywords: Microwave assisted sintering; Cordierite; Ceramic foam; Rheology; In situ

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