

عنوان مقاله:

Effect of the La₂O₃ Addition on Thermal, Microstructure and Mechanical Properties of Mullite–Zirconia Composites

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خلاصه مقاله:

Mullite–zirconia composites were prepared using lanthanum oxide (La₂O₃) additive which three different mole ratio by the reaction sintering (RS) route of alumina, kaolinite and zircon. Starting materials were planetary milled, shaped into pellets and bars and sintered in the temperature range of ۱۴۵۰–۱۵۵۰ °C with ۵ h soaking at peak temperature. In this work, the mullite-zirconia composites were characterized by thermal expansion coefficient, physical, microstructures and mechanical properties. The XRD method were employed for determining the crystalline phase composition of these composites. Microstructure of the composites was examined by SEM. ZrO₂ takes part in both the intergranular as well as intragranular positions. However, intragranular zirconias are much smaller compared to intergranular zirconias.

کلمات کلیدی:

Mullite-zirconia composites, thermal expansion coefficient, reaction sintering, mechanical properties

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