Title (only) – 150 chars

Microstructural aspects affecting the performance of thermoelectric oxides: selected examples

Abstract Body – 1500 chars

Oxide materials represent certain advantages as compared to traditional thermoelectric materials, including stability at high temperatures and versatility regarding the gas atmosphere composition. Microstructural aspects play a crucial role in the performance of oxides, often dominating even over chemical composition effects. Thus, engineering the microstructure in these materials represents a powerful tool towards improving their thermoelectric performance, both in terms of the maximum output and stable operation at elevated temperatures. This work reviews some representative cases observed for the main thermoelectric oxide families, such as ZnO, $SrTiO_3$, $Ca_3Co_4O_9$ and $CaMnO_3$-based systems. The selected examples highlight the impacts of the relevant microstructural features, including the presence of porosity, phase morphology and interfaces, on the thermoelectric properties and their evolution with time.

Keywords (3-6)

Thermoelectric oxide;
Microstructure;
Strontium titanate;
Zinc oxide;
Calcium cobaltite;
Calcium manganite

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