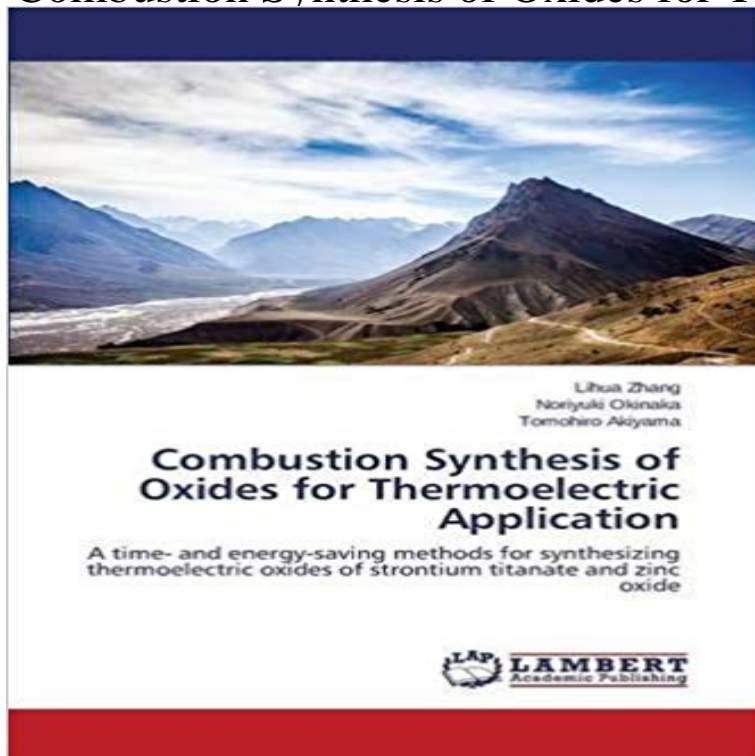


Combustion Synthesis of Oxides for Thermoelectric Application



Thermoelectric effect is the direct conversion of temperature differences to electric voltage and vice versa. Over the past twenty years, thermoelectric materials have attracted great attention from both an academic research perspective and with a view to industrial applications. Some oxides were considered as candidate thermoelectric materials in high-temperature application by reasons of their high heat- and oxidation-resistance and low toxicity. However, the conventional synthesis methods of oxides such as solid state reaction method are high time- and energy-consumption. Therefore, two combustion synthesis methods of solid-phase self-propagating high-temperature synthesis and solution combustion synthesis combined with spark plasma sintering method were introduced in the synthesis of oxides for thermoelectric application from the viewpoint of energy saving in this book.

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