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Novel Ceramic Materials for the Energy Transition

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closed (30 September 2021)

Message from the Guest Editor

Dear Colleagues,

The worldwide threat, high energy consumption, has to be tackled in different fields, but “energy transition” is essential. In that sense, new materials are demanded to increase the efficiency of power generation systems, to develop novel environmentally friendly approaches, and to reduce or even eliminate the carbon footprint during processing. Ceramics play a determinant role since they present high chemical stability under aggressive environmental conditions to increase the operating temperature, and consequently the overall efficiency. Furthermore, they have low density, which is critical for transportation and a unique combination of ionic and electronic conductivities.

This Special Issue embraces research on the processing, characterization, and properties of advanced ceramics for energy transition, including high-temperature materials (such as ceramic matrix composites, max phases, ultra-high temperature ceramics, and thermal barrier coatings), Li- and Na- batteries, solid oxide fuel cells, gas separation membranes, CO₂ capture, electrolysis, hydrogen production and storage, solar energy, photovoltaics, and nuclear fusion among others.



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