Special Issue

Sintering and Grain Growth Behavior of Ceramics

Message from the Guest Editor

Sintering can be defined as the application of thermal energy to a shaped powder body to increase its strength by the formation of interparticle bonds and the elimination or control of porosity. Sintering is an essential step in the production of ceramics ranging from traditional applications such as porcelain and whitewares to high-performance applications such as bearings, microwave devices, fuel cells, capacitors, dental implants, and transducers. Although it is one of our oldest manufacturing technologies, sintering has only been studied scientifically since the 1940s. The two basic processes which take place during sintering are densification and grain growth. High density is desirable to improve the mechanical, electrical, and optical properties of ceramics. Grain size has a strong effect on the mechanical, electronic, magnetic, and optical properties of ceramics. Therefore, the control of both processes is vital in order to produce ceramics with the desired properties. This Special Issue will focus on sintering and grain growth behavior in ceramics, as well as on the relationship between microstructure and properties.

Guest Editor

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Materials (ISSN 1996-1944) was launched in 2008. The journal covers twenty-five comprehensive topics: biomaterials, energy materials, advanced composites, advanced materials characterization, porous materials, manufacturing processes and systems, advanced nanomaterials and nanotechnology, smart materials, thin films and interfaces, catalytic materials, carbon materials, materials chemistry, materials physics, optics and photonics, corrosion, construction and building materials, materials simulation and design, electronic materials, advanced and functional ceramics and glasses, metals and alloys, soft matter, polymeric materials, quantum materials, mechanics of materials, green materials, general. *Materials* provides a unique opportunity to contribute high quality articles and to take advantage of its large readership.

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