



## New Insights into Ceramic Matrix Composites and Functional Ceramics

Guest Editor:

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### Message from the Guest Editor

Dear Colleagues,

Multiscale characterization from the atomic to nanoscale dimensions is of high interest as it is becoming more important in understanding the synthesis and performance of advanced ceramic and composites. Scientific research has been performed to limit the effect of their intrinsic brittleness and to understand the deformation and failure modes. Recent advances to control and design ceramics and composites at the nanoscale have been achieved, but long-term mechanical reliability remains a critical issue for successful applications. The materials of interest comprise a wide range of ceramics, including conventional oxide ceramics such as alumina and zirconia, also more specialized compositions such as boride, carbide, and nitride materials.

This special issue aims to give a brief overview of the features of advanced ceramic and composite microstructures and the corresponding techniques for characterizing them. The most widespread tools for characterization of ceramic microstructures are microscopic techniques involving different types of electron microscopy, various diffraction, spectroscopic, and nuclear methods.

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*Guest Editor*





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## Message from the Editor-in-Chief

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