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## Structural Design of Ceramic Materials and Ceramic-Based Composites

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### Message from the Guest Editor

It is known that the use of complex modern approaches to the formation of materials, which can be combined under the term "structural design" can achieve multiple increases in performance in materials of known composition.

- Multicomponent solid solutions based on metal borides and carbides have a significantly higher resistance to oxidation, hardness, and fracture toughness compared to binary carbides and borides.
- Providing weak bonds in ceramic composites with high-modulus matrix and low-modulus inclusions creates good conditions for crack bifurcation, leading to an increase in fracture toughness.
- The organization of a multilevel pore structure is capable of endowing otherwise bioinert oxide ceramics with osteoconductive properties, etc.

I am pleased to invite you to publish research works aimed at studying approaches to controlling the performance characteristics of ceramics and ceramic-based materials through structure and composition, devoted to the research of physical laws that determine the increase in characteristics or endowing the material with fundamentally new properties at various levels of the structural hierarchy from the nano- to macro-range.





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## Editor-in-Chief

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## Message from the Editor-in-Chief

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