



Fractal Approaches in Materials: Structure and Mechanics

Guest Editors:

Prof. Dr. Farooq Ahmad

School of Mechanical and
Aerospace Engineering, Nanyang
Technological University,
Singapore 639798, Singapore

Prof. Dr. Yeliz Karaca

University of Massachusetts
Medical School, Worcester, MA
01655, USA

Dr. Naveed Iqbal

Department of Mathematics,
Faculty of Science, University of
Ha'il, Ha'il 2440, Saudi Arabia

Deadline for manuscript
submissions:

closed (1 December 2022)

Message from the Guest Editors

The fractal approach to material mechanics with a multiscale microstructure gives a concise explanation of the size effects on cohesive crack model parameters. Because of the requirement for accurate prediction of mechanical characteristics in large-scale structures, the study of scale effects is becoming increasingly important. Thus, the mechanics of scale-invariant materials is crucial for basic and technical reasons. Fractal geometry can be used to define scale-invariant structures in heterogeneous materials by using scaling ideas. Scale-invariant spatial and size distributions of solid phases and/or defects (e.g., pores or fractures); long-range correlations in the mass (or pore) density distribution; and the fractal geometry of fracture, pore, and crumpling networks are only a few examples.

The aim of this Special Issue is to focus on different transformations and operators of mathematical modeling of complex systems in real-world problems, as well as on numerical and analytical methods. From the fractional ordered systems perspective, manuscripts in dynamical systems, nonlinearity, chaos, fractional differential equation, and fractional dynamics are also encouraged.





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Editor-in-Chief

Prof. Dr. Carlo Cattani

Engineering School (DEIM),
University of Tuscia, Largo
dell'Università, 01100 Viterbo,
Italy

Message from the Editor-in-Chief

Fractal and Fractional (*Fractal Fract.*) is a scholarly online journal which provides a forum for discussion on new original models and methods in fractals and fractional calculus both from theory and applications. It is a peer-reviewed, open access journal that publishes high quality original research articles, review papers and short communications.

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Fractal and Fractional Editorial Office
MDPI, Grosspeteranlage 5
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