Special Issue

Fractal Approaches in Materials: Structure and Mechanics

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.

Guest Editors

Prof. Dr. Farooq Ahmad

Prof. Dr. Yeliz Karaca

Dr. Naveed Iqbal

Deadline for manuscript submissions

closed (1 December 2022)

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Fractal and Fractional
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
fractalfract@mdpi.com

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About the Journal

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.

Editor-in-Chief

Prof. Dr. Carlo Cattani
Engineering School (DEIM), University of Tuscia, Largo dell'Università, 01100 Viterbo, Italy

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