

## Special Issue

# Fracture Analysis of Materials Based on Fractal Nature

### Message from the Guest Editors

It has been observed that the fracture surface of metals, rock, concrete, and many other disordered or heterogeneous materials can be described by fractals characterized by random self-similarity. Furthermore, it can be explained that the behavior of a material depends on its microstructural disorder and its relation to its size at the macro scale. The microstructural disorder is a scale-independent material property less important when increasing the structural size. From a fractal point of view, this represents the change from a non-integer dimension to an integer dimension, that is, Euclidean space.

This Special Issue focuses on topics related to the fractal approach to the fracture analysis of materials using experimental testing, numerical simulation, and structural health monitoring. Topics that are invited (but are not limited to) the following:

- Size effect based on the fractal theory;
- Fractal analysis and its applications in fracture mechanics;
- Applications of fractal approaches to fracture failure and damage of materials under different loading conditions;
- Fractal/multi-fractal analysis for structural health monitoring.

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### Guest Editors

Dr. Luis Eduardo Koteski

Dr. Leandro Ferreira Friedrich

Prof. Dr. Jie Xu

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### Deadline for manuscript submissions

closed (25 March 2025)



## Fractal and Fractional

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

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### Editor-in-Chief

Prof. Dr. Carlo Cattani

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

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