



## Fracture Analysis of Materials Based on Fractal Nature

Guest Editors:

**Dr. Luis Eduardo Kostas**

Engineering Post Graduation  
Program, Federal University of  
Pampa (UNIPAMPA), Alegrete  
97546-550, Brazil

**Dr. Leandro Ferreira Friedrich**

Engineering Post Graduation  
Program, Federal University of  
Pampa (UNIPAMPA), Alegrete  
97546-550, Brazil

**Prof. Dr. Jie Xu**

School of Civil Engineering,  
Research Center of Large-Span  
Spatial Structures, Tianjin  
University, Tianjin 300350, China

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### Message from the Guest Editors

Dear Colleagues,

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.



