

## Special Issue

# Fractional Order Modeling and Fault Detection in Complex Systems

### Message from the Guest Editor

Complex industrial systems inherently exhibit fractional dynamics characterized by long-range dependencies, multifractal behaviors, and non-Markovian memory effects. Traditional integer-order models and algorithms often struggle to adequately capture these properties, thereby compromising the accuracy of fault detection. This Special Issue aims to address the pressing need for data-driven fractional-order methodologies that integrate machine learning and computational mathematics, bridging the gap between theoretical fractional calculus and practical industrial diagnostics.

We invite cutting-edge contributions exploring hybrid approaches that combine fractional operators with deep learning, signal processing, and edge computing.

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### Guest Editor

Prof. Dr. Li Wang

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### Deadline for manuscript submissions

31 October 2026



## Fractal and Fractional

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Impact Factor 3.3  
CiteScore 6.8



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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

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