Special Issue

Design and Applications of Fractional-Order Circuits and Filters

Message from the Guest Editors

The emerging field of fractional-order circuits and systems, which leverages concepts of non-integer order differentiation and integration, is the topic of this Special Issue. The advantage of its application in real-world systems is in its more realistic and accurate modeling capabilities. It is being explored across many fields of science and engineering, including analog filters, oscillators, and control systems. It is also widely used to model the electrical characteristics of biological tissue, energy storage devices (e.g., supercapacitors and batteries), and electrochemical systems. The fractional order provides additional flexibility, offering an extra degree of freedom in the design. Since we will be concentrating on analog design, analog integrated circuits, and field-programmable analog arrays (FPAA), they find applications in the design of fractional-order circuits and systems. Additionally, the use of MATLAB Simulink and OpenModelica as design tools is highly recommended for modeling fractional-order systems.

Guest Editors

Prof. Dr. Dražen Jurišić

Faculty of Electrical Engineering and Computing, University of Zagreb, HR-10000 Zagreb, Croatia

Prof. Dr. Costas Psychalinos

Department of Physics, Electronics Laboratory, University of Patras, 26504 Patras, Greece

Deadline for manuscript submissions

31 December 2026

Fractal and Fractional

an Open Access Journal by MDPI

Impact Factor 3.3
CiteScore 6.0

mdpi.com/si/252619

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

mdpi.com/journal/fractalfract

Fractal and Fractional

an Open Access Journal by MDPI

Impact Factor 3.3
CiteScore 6.0

mdpi.com/journal/fractalfract

MDPI

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

Author Benefits

High Visibility:

indexed within Scopus, SCIE (Web of Science), Inspec, and other databases.

Journal Rank:

JCR - Q1 (Mathematics, Interdisciplinary Applications) / CiteScore - Q1 (Analysis)

Rapid Publication:

manuscripts are peer-reviewed and a first decision is provided to authors approximately 19.9 days after submission; acceptance to publication is undertaken in 2.7 days (median values for papers published in this journal in the first half of 2025).