Special Issue

Mechanical Modeling of Viscoelastic Composite Materials

Message from the Guest Editors

Nowadays, there are different types of materials characterized by a viscoelastic response, where the phases generally involve both instant elastic and time-dependent viscous behavior, as well as those with hierarchical structures found in biological contexts driven by natural evolution. The present Special Issue intends to collect some theoretical and experimental approaches with the aim of achieving better performance by intentionally manipulating the complexity and inner design, and by ensuring multilength scale property control. In addition, the study of creep and relaxation behavior in viscoelasticity has gone some way towards enhancing the understanding of these kinds of composites. Viscoelastic materials are often used to improve the capability of systems to dissipate more energy. Their mechanical properties depend mainly on the frequency of excitations and temperature. The family of rheological models that consider the dependence of the mechanical properties of these materials on the excitation frequencies is very attractive. Moreover, the so-called fractional models, where fractional derivatives are used, can be considered relevant for the purpose of this work.

Guest Editors

Prof. Dr. Frédéric Lebon

CNRS, Centrale Marseille, Aix Marseille Universite, LMA UMR 7031, Marseille, France

Dr. Reinaldo Rodríguez-Ramos

1. Facultad de Matemática y Computación, Universidad de La Habana, San Lázaro y L, Vedado, La Habana 10400, Cuba
2. PPG-MCCT, Universidade Federal Fluminense, Av. dos Trabalhadores 420, Vila Sta. Cecília, Volta Redonda 27255-125, Brazil

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

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Materials (ISSN 1996-1944) was launched in 2008. The journal covers twenty-five comprehensive topics: biomaterials, energy materials, advanced composites, advanced materials characterization, porous materials, manufacturing processes and systems, advanced nanomaterials and nanotechnology, smart materials, thin films and interfaces, catalytic materials, carbon materials, materials chemistry, materials physics, optics and photonics, corrosion, construction and building materials, materials simulation and design, electronic materials, advanced and functional ceramics and glasses, metals and alloys, soft matter, polymeric materials, quantum materials, mechanics of materials, green materials, general. *Materials* provides a unique opportunity to contribute high quality articles and to take advantage of its large readership.

Editor-in-Chief

Prof. Dr. Maryam Tabrizian
1. Department of Biomedical Engineering, Faculty of Medicine and Health Sciences, McGill University, Montreal, QC H3A 2B6, Canada
2. Faculty of Dentistry and Oral Health Sciences, McGill University, 3640 Rue University, Montreal, QC H3A 0C7, Canada

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