Special Issue

Supercritical Fluids Technologies as a Basis for Development of Innovative Materials

Message from the Guest Editor

Supercritical fluid technologies are increasingly used for the synthesis and directed modification (functionalization) of microporous materials and polymer composites. To create efficient functionalization technologies, a number of processes are used in supercritical fluids, in which the decisive role is played by such unique properties of the SCF as the controlled density of the medium, high rates of heat and mass transfer and, at the same time, high dissolving power and zero surface tension. With all the variety of microporous materials, there are several common physical and chemical processes that determine the course of all the main stages of the process of pore formation and the functionalization of the material, and, hence, the properties of the target product; these are, first of all, the formation of xerogels, supercritical drying and the sorption of the active pharmaceutical ingredient. The goal of this Special Issue is to discuss the possibility to create a unified concept for describing such processes and methods for obtaining composites in SCF fluids. Keywords:
supercritical fluids;
xerogel;
extraction;
micronization;
polymer impregnation;
critical phenomena;
solubility

Guest Editor

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Deadline for manuscript submissions

closed (20 August 2023)

Materials

an Open Access Journal by MDPI

Impact Factor 3.2
CiteScore 6.4
Indexed in PubMed

mdpi.com/si/109722

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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.

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