

Special Issue

Application of Supercritical Fluids in Pharmaceutical Science

Message from the Guest Editor

Supercritical fluids (SCFs), particularly supercritical CO₂ (scCO₂), have emerged as powerful tools in pharmaceutical science, offering green and sustainable alternatives to conventional solvent-based processes. This Special Issue focuses on the innovative applications of SCFs in drug formulation, bioactive compound extraction, and drug delivery system design. Topics include the use of SCFs for improving the solubility and bioavailability of poorly soluble drugs, encapsulation techniques for controlled release, and purification methods to achieve high-quality, solvent-free pharmaceutical products. Contributions will explore the role of SCFs in the development of biocompatible delivery vehicles such as nanoparticles, aerogels, and liposomes, highlighting the advances in both research and industrial applications. By bringing together leading research in SCF technologies, this Issue aims to provide insights into how SCFs are transforming pharmaceutical processes, addressing key challenges in sustainability, safety, and efficiency while advancing the field of medicinal chemistry.

Guest Editor

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Editor-in-Chief

Prof. Dr. Amélia Pilar Rauter

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