

Special Issue

Advanced Polymeric and Hybrid Vectors for Non-Viral Gene Delivery

Message from the Guest Editor

This Special Issue focuses on the latest advancements in Advanced Polymeric and Hybrid Vectors for Non-Viral Gene Delivery. We aim to explore the chemical versatility of macromolecular systems, ranging from tailored, smart, and functionally modified natural or synthetic polymers to cutting-edge lipid–polymer hybrid architectures. A primary emphasis is placed on unraveling structure–activity relationships to understand how vector design, charge density, and surface functionalization impact transfection efficiency, biocompatibility, and intracellular trafficking mechanisms like endosomal escape. Additionally, this Special Issue highlights innovative, scalable processing methodologies, such as microfluidic-assisted assembly, that bridge the gap between benchtop polymer synthesis and precise nanomedicine formulation. We welcome original research articles, short communications, and comprehensive reviews covering design, advanced characterization, and in vitro or in vivo biological evaluations for therapeutics encompassing pDNA, mRNA, siRNA, and CRISPR complexes.

Guest Editor

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Message from the Editor-in-Chief

Since its foundation in 2009, *Polymers* has developed into an internationally renowned, extremely successful open access journal. The editorial team and the editorial board dedicatedly combine open-access publishing and high-quality rigorous peer reviewing. The performance of the journal has proven this strategy to be well-suited and highly successful. This is reflected in the increasing impact factor of *Polymers*, the most recent one being 5.8.

I would like to invite you to contribute to the success of the journal by sending us your high quality research papers. We would be pleased to welcome you as one of our authors.

Editor-in-Chief

Prof. Dr. Alexander Böker

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