

## Special Issue

# Polymeric Biomaterials for RNA Therapeutics and Genetic Drug Delivery Applications

### Message from the Guest Editors

Polymers play a prominent role in the advancement of RNA therapeutics and genetic drug delivery due to their tailorable chemical structures, capacity for functionalization, and ability to overcome biological barriers. Polycationic materials such as polyethyleneimine (PEI), poly ( $\alpha$ -amino esters) (PBAEs), chitosan, and poly (lactic-co-glycolic acid) (PLGA) have demonstrated ability in complexing with nucleic acids, protecting them from enzymatic degradation, and enhancing cellular uptake through nanoparticle formation and endosomal escape mechanisms. This Special Issue welcomes original research and review articles that explore the design, synthesis, and application of polymeric systems for RNA and gene therapy. By integrating advances across materials science, biotechnology, and pharmaceutical sciences, this collection seeks to elucidate the pivotal role of polymer-based delivery platforms in driving the development and clinical translation of next-generation genetic therapeutics.

### Guest Editors

Dr. Jasmin Monpara

Dr. Pardeep K. Gupta

Dr. Gagan Kaushal

Dr. Rijo John

### Deadline for manuscript submissions

31 December 2025



## Polymers

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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 4.7.

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.

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### Editor-in-Chief

Prof. Dr. Alexander Böker

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