

Special Issue

Lipid Nanoparticles: Preparation and Biomedical Applications

Message from the Guest Editors

This Special Issue aims to provide an interdisciplinary platform highlighting advances in design, formulation, characterization, functionalization, and translational application of lipid-based nanocarriers. LNPs improve efficacy, stability, bioavailability, targeting, and safety of small molecules, nucleic acids, peptides, proteins, vaccines, and imaging agents. Emphasis is on cancer therapy, gene delivery, RNA therapeutics, vaccines, infectious/neurological diseases, inflammatory conditions, regenerative medicine, and theranostics. Hybrid systems, biomimetic designs, AI-assisted formulation, and translational perspectives are also welcome. This Special Issue integrates pharmaceutical sciences, nanotechnology, materials science, and molecular medicine, offering a forward-looking collection on LNP technology. Scope includes, but is not limited to:

- Formulation strategies and preparation techniques;
- Physicochemical characterization;
- Surface engineering and ligand functionalization;
- Scalable manufacturing;
- QbD and regulatory aspects;
- Stability and storage;
- Pharmacokinetics and biodistribution;
- Targeted and stimuli-responsive delivery;
- Safety, toxicity, and immunogenicity.

Guest Editors

Dr. Ryan Varghese
Dr. Pardeep K. Gupta
Dr. Rijo John

Deadline for manuscript submissions

31 March 2027



Journal of Functional Biomaterials

an Open Access Journal
by MDPI

Impact Factor 5.9
CiteScore 9.7
Indexed in PubMed



mdpi.com/si/283628

*Journal of Functional
Biomaterials*
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
jfb@mdpi.com

[mdpi.com/journal/
jfb](https://mdpi.com/journal/jfb)





Journal of Functional Biomaterials

an Open Access Journal
by MDPI

Impact Factor 5.9
CiteScore 9.7
Indexed in PubMed



[mdpi.com/journal/](https://mdpi.com/journal/jfb)

[jfb](https://mdpi.com/journal/jfb)



About the Journal

Message from the Editor-in-Chief

The biomaterials field is one of the largest and fastest growing research areas both in the scientific community and in the industrial one. Biomaterials are the result of collaborations between different disciplines: chemistry, medicine, pharmacology, engineering and biology. The objective of this collaboration is to lead to the implementation of new devices to restore form and human body functions. The mission of the *Journal of Functional Biomaterials (JFB)* is to focus attention on physico-chemical characteristics and their importance in the interactions between biomaterials and living tissues. *JFB* seeks to publish studies on the preparation, performance and use of biomaterials in biomedical devices, as well as regarding their behavior in physiological environments. We are pleased to welcome you as our authors.

Editor-in-Chief

Prof. Dr. Pankaj Vadgama

School of Engineering and Materials Science, Queen Mary University of London, London, UK

Author Benefits

Open Access:

free for readers, with article processing charges (APC) paid by authors or their institutions.

High Visibility:

indexed within Scopus, SCIE (Web of Science), PubMed, PMC, Embase, Ei Compendex, Inspec, CAPIus / SciFinder, and other databases.

Journal Rank:

JCR - Q1 (Engineering, Biomedical) / CiteScore - Q1 (Biomedical Engineering)