

Special Issue

Application of Layer-by-Layer Self-Assembled Nanocoating for Drug Delivery

Message from the Guest Editors

This Special Issue will focus on the application of nanoshells based on layer-by-layer adsorption of oppositely charged macromolecules onto a substrate and their application in drug delivery and targeting. The basis of the method involves resaturation of polyanion adsorption, resulting in reversal of the terminal surface charge of the film after deposition of each layer. By manipulating both the ratio of wall to core and the wall composition, the shells can be precisely tuned. No covalent binding is involved in shell formation, which allows the drug or macromolecules to remain intact. Empty nanocapsules can also be prepared after thin-film coatings are formed on colloidal cores that can be dissolved. These empty capsules can be loaded with a drug via diffusion. Controlled release of the capsule interior may be achieved with pH or temperature change, or through external physical influences such as IR laser impulses or alternate magnetic fields. Different templates such as organic and inorganic colloid particles, protein aggregates, and drug nanocrystals, with sizes ranging from a few nanometers to tens of microns, can be coated with these nanoorganized multilayer films.

Guest Editors

Prof. Dr. Melgardt de Villiers

School of Pharmacy, University of Wisconsin Madison, Madison, WI 53706, USA

Dr. Daniel P. Otto

Laboratory for Analytical Services, Research Focus Area for Chemical Resource Beneficiation, North-West University, Potchefstroom, South Africa

Deadline for manuscript submissions

closed (30 April 2022)



Pharmaceutics

an Open Access Journal
by MDPI

Impact Factor 5.5
CiteScore 10.0
Indexed in PubMed



mdpi.com/si/81004

Pharmaceutics
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
pharmaceutics@mdpi.com

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





Pharmaceutics

an Open Access Journal
by MDPI

Impact Factor 5.5
CiteScore 10.0
Indexed in PubMed



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



About the Journal

Message from the Editor-in-Chief

Pharmaceutics (ISSN 1999-4923) is an online open access journal on the science and technology of pharmaceuticals and biopharmaceuticals. The scientific community, the wider community and the general public have unlimited and free access to the content as soon as a paper is published; this open access to your research ensures your findings are shared with the widest possible audience. Please consider publishing your impressive work in this high quality journal. We would be pleased to welcome you as one of our authors.

Editor-in-Chief

Prof. Dr. Patrick J. Sinko
Department of Pharmaceutics, Ernest Mario School of Pharmacy,
Rutgers University, Piscataway, NJ 08854, USA

Author Benefits

High Visibility:

indexed within Scopus, SCIE (Web of Science), PubMed, PMC, Embase, CAPlus / SciFinder, and other databases.

Journal Rank:

JCR - Q1 (Pharmacology and Pharmacy) / CiteScore - Q1
(Pharmaceutical Science)

Rapid Publication:

manuscripts are peer-reviewed and a first decision is provided to authors approximately 14.9 days after submission; acceptance to publication is undertaken in 3.3 days (median values for papers published in this journal in the first half of 2025).