



## Symbiotic Materials for Pharmaceutics

Guest Editors:

**Prof. Dr. Asako Yamayoshi**

Graduate School of Biomedical  
Sciences, Nagasaki University, 1-  
14 Bunkyo-machi, Nagasaki-shi,  
Nagasaki 852-8521, Japan

**Prof. Dr. Mitsuhiro Ebara**

Research Center for Functional  
Materials (RCFM), National  
Institute for Materials Science  
(NIMS), 1-1 Namiki, Tsukuba 305-  
0044, Japan

Deadline for manuscript  
submissions:

**closed (20 April 2023)**

### Message from the Guest Editors

Dear Colleagues,

The human body encompasses amazing symbiotic relationships with several organisms, the relationship between a mother and her unborn baby being one such remarkable interaction. The mother does not reject her fetus, even though the fetus is a completely separate organism. In contrast, although research on many different types of functional molecules has been realized, the mechanisms of the symbiosis between humans and non-self molecules/materials is less understood; even highly optimized advanced drugs exhibit immunogenicity in some cases, which has become a major challenge for clinical applications.

In this Special Issue, we refer to the symbiosis between human living cells and materials as “material symbiosis”. We aim to elucidate relationships between biomolecules and materials in terms of biophysical chemistry and review the development of biomaterials that exhibit desired relationships with biomolecules or living cells. We hope this Special Issue will act as an effective design guideline for materials and drugs to avoid conventional side effects.

Prof. Dr. Asako Yamayoshi

Prof. Dr. Mitsuhiro Ebara

*Guest Editors*





an Open Access Journal by MDPI

## Editor-in-Chief

### **Prof. Dr. Patrick J. Sinko**

Department of Pharmaceutics,  
Ernest Mario School of  
Pharmacy, Rutgers University,  
Piscataway, NJ 08854, USA

## Message from the Editor-in-Chief

*Pharmaceutics* (ISSN 1999-4923) is an online open access journal on the science and technology of pharmaceutics and biopharmaceutics. 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.

## 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, CAPlus / SciFinder, and other databases.

**Journal Rank:** JCR - Q1 (Pharmacology and Pharmacy) / CiteScore - Q1 (Pharmaceutical Science)

## Contact Us

*Pharmaceutics* Editorial Office  
MDPI, Grosspeteranlage 5  
4052 Basel, Switzerland

Tel: +41 61 683 77 34  
[www.mdpi.com](http://www.mdpi.com)

[mdpi.com/journal/pharmaceutics](http://mdpi.com/journal/pharmaceutics)  
[pharmaceutics@mdpi.com](mailto:pharmaceutics@mdpi.com)  
X@MDPIpharma