



an Open Access Journal by MDPI

Electrostatics in Cell Membranes and in Artificial Membrane Models

Guest Editor:

Dr. Natalia Wilke

Facultad de Ciencias Químicas,
Departamento de Química
Biológica Ranwel Caputto, and
CONICET, Centro de
Investigaciones en Química
Biológica de Córdoba (CIQUIBIC),
Universidad Nacional de
Córdoba, Haya de la Torre y
Medina Allende s/n, Ciudad
Universitaria, X5000HUA
Córdoba, Argentina

Deadline for manuscript
submissions:

closed (31 October 2021)

Message from the Guest Editor

Dear Colleagues,

Cell membranes are proposed as a lipid matrix with embedded proteins. The dielectric constant of the apolar region of the lipids contrasts with that of the aqueous phase and the polar region, going from about 2 to 80 in a very short distance. Therefore, interfacial electrostatics is very complex and affects the membrane properties in general, giving an interdependence between mechanical properties of membranes and interface electrostatics.

- Modeling electrostatic interactions in thin films;
- Electrostatic interactions as driving forces for the binding of molecules to the membrane;
- Ionization state of the molecules within the membrane and their lateral interactions;
- Surface potentials and ion adsorption;
- Membrane potential as driving force for cell processes;
- Domain segregation in charged membranes;
- The interaction of cationic peptides and antibiotics with membranes;
- Cationic surfactants;
- Charged vesicles;
- Experimental determinations of the ionization state of lipid bilayers and membrane proteins;
- Molecular simulations of electrostatic processes in lipid bilayers and membrane proteins.



mdpi.com/si/54127

Dr. Natalia Wilke

Guest Editor

Special Issue



an Open Access Journal by MDPI

Editor-in-Chief

Prof. Dr. Spas D. Kolev

School of Chemistry, The
University of Melbourne,
Melbourne, VIC 3010, Australia

Message from the Editor-in-Chief

You are cordially invited to contribute a research article or a comprehensive review for consideration and publication in *Membranes* (ISSN 2077-0375).

Membranes is an international, peer-reviewed open access journal of membrane technology published monthly online by MDPI. The journal covers the broad aspects of the science and technology of both biological and non-biological membranes, including membrane dynamics and the preparation and characterization of membranes and their applications in water, environment, energy, and food industries. Articles contributing to better understanding of transport processes in all types of membranes are also welcome. The scientific community and the general public have unlimited and free access to the content as soon as it is published. 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), Ei Compendex, PubMed, PMC, CAPlus / SciFinder, Inspec, and other databases.

Journal Rank: JCR - Q2 (*Polymer Science*) / CiteScore - Q2 (*Chemical Engineering (miscellaneous)*)

Contact Us

Membranes Editorial Office
MDPI, St. Alban-Anlage 66
4052 Basel, Switzerland

Tel: +41 61 683 77 34
www.mdpi.com

mdpi.com/journal/membranes
membranes@mdpi.com
X@Membranes_MDPI