

2026

ISOBC NEWSLETTER

Volume 21, Number 1



ISOBC Newsletter

September 2026

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Iran Society of Biophysical Chemistry

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iran society Of Biophysical
Chemistry(ISOBC)

University Of
Tabriz



19th National and 4th International Conference of

Iran Biophysical Chemistry

University of Tabriz, Tabriz

October 28-29, 2026, Iran

Registration and Abstract Submission Deadline: 23 August to 7 October



Conference themes:

Structure, function and stability of proteins
Protein-ligand binding and drug targeting
Computational Biophysical Chemistry and Structural Bioinformatics
Structural Biochemistry and Proteomics
Thermodynamic and Kinetics Properties of Biomolecules
Quantum Biophysics \ Nanobiophysics \ Enzyme Technology
Biosensors \ Artificial Intelligence and Biophysics
Advanced High-Resolution Techniques for Biomolecular Recognition
Marine Biophysics, Biochemistry and Bioinformatics



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QUANTUM BIOLOGY (QB) Core at IBB

Quantum Biology (QB) is an emerging interdisciplinary field that explores how quantum phenomena contribute to biological processes and living systems. It brings together biophysics, biochemistry, physics, chemistry, and biology to investigate mechanisms that cannot be fully understood through classical approaches alone. The Quantum Biology Core (QB Core) has been established at the Institute of Biochemistry and Biophysics (IBB), University of Tehran, as a platform for interdisciplinary research, advanced training, and scientific collaboration. The QB Core will focus on quantum effects in biomolecules, electron and proton transfer, enzymatic reactions, photosynthesis, molecular sensing, and related biological phenomena. In the future, it will expand its research capabilities, instrumentation, international collaborations, and educational programs, with particular attention to understanding complex diseases such as diabetes. Through these efforts, the QB Core aims to contribute to the development of Quantum Biology in Iran and strengthen IBB's position at this rapidly emerging scientific frontier.

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Call for Papers



Researchers, distinguished faculty members, students, and all those interested in related fields are hereby informed that the international *Biomacromolecular Journal* publishes novel scientific findings and is indexed in the ISC database.

Adopting an interdisciplinary approach, the journal welcomes original research articles and review articles in relevant fields. It evaluates and publishes high-quality scientific contributions across a broad range of subject areas.

Researchers are cordially invited to visit the journal's official website for further information regarding its aims and scope and manuscript preparation guidelines.

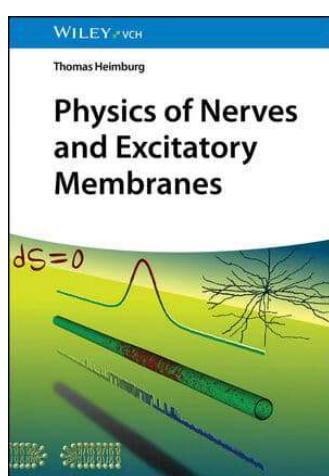
Journal website: <https://www.bmmj.org/>

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New books

1. Physics of Nerves and Excitatory Membranes



Published: March 2026

No. of pages (Paperback): 512

Language: English

ISBN: 978-3-527-33180-2

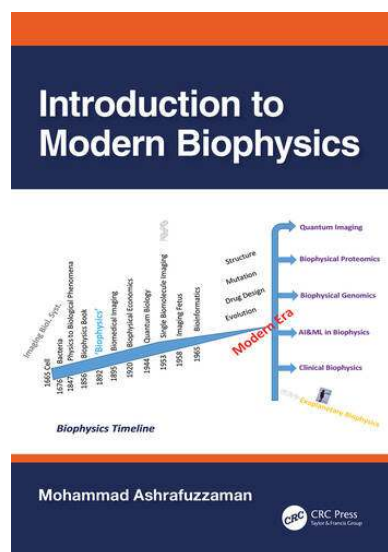
About this book

This book explores the thermodynamic properties of biological membranes and their relevance to biological phenomena, focusing on macroscopic properties that give rise to electromechanical pulses resembling nervous impulses. These properties are influenced by thermodynamic variables such as voltage, temperature, pressure, and chemical potential. The book demonstrates that many properties of nerves and excitable membranes can be understood through thermodynamics, enabling testable predictions and explanations for phenomena like pressure reversal of anesthesia. Structured in nine parts, the book covers thermodynamic principles, physical changes during nerve activity, electrophysiology, membrane physics, fluctuations and maxima in membrane properties, hydrodynamics of membranes, spontaneous pore formation, anesthetics, and other medical findings. By compiling these topics, the book aims to provide a comprehensive picture of biological membranes and showcase the power of thermodynamic treatment in understanding life.

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2. Introduction to Modern Biophysics



Published: June 2026

No. of pages (Paperback): 434

Language: English

ISBN: 9781032263342

About this book

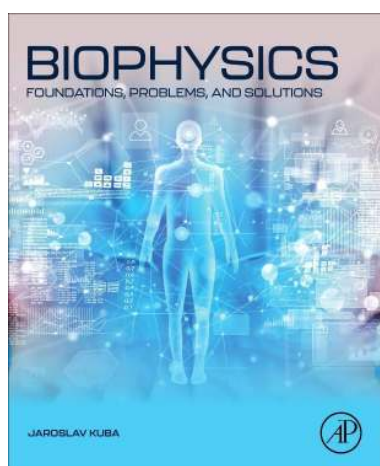
This textbook provides an introduction to the fundamental and applied aspects of biophysics for advanced undergraduate and graduate students of physics, chemistry, and biology. The application of physics principles and techniques in exploring biological systems has long been a tradition in scientific research. Biological systems hold naturally inbuilt physical principles and processes which are popularly explored. Systematic discoveries help us understand the structures and functions of individual biomolecules, biomolecular systems, cells, organelles, tissues, and even the physiological systems of animals and plants. Utilizing a physics-based scientific understanding of biological systems to explore disease is at the forefront of applied scientific research.

This textbook covers key breakthroughs in biophysics whilst looking ahead to future horizons and directions of research. It contains models based on both classical and quantum mechanical treatments of biological systems. It explores diseases related to physical alterations in biomolecular structures and organizations alongside drug discovery strategies. It also discusses the cutting-edge applications of nanotechnologies in manipulating nanoprocesses in biological systems.

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3. Biophysics: Foundations, Problems, and Solutions



Published: May 2026

No. of pages (Paperback): 398

Language: English

ISBN: 0443341176

About this book

Biophysics: Foundations, Problems, and Solutions is an accessible undergraduate text on a wide range of biophysics concepts, examining the field through real problems and their solutions, with comprehensive computation and explanation. With lessons explored over the course of the book, each section also contains a brief theoretical summary of the physics and biology ideas involved, as well as a set of formulas and laws required to answer the issues presented. Intended to serve as the core book for fundamental courses in biophysics and related fields, including biomedical sciences, engineering, and medical technology, the book is also a helpful guide for seasoned experts and researchers who want to improve their knowledge of biophysics or solve related quantitative problems. *Biophysics: Foundations, Problems, and Solutions* seeks to support readers across several related disciplines in biophysics-focused courses. The book covers a wide range of topics, including fluid mechanics and physics of flow, capillary and surface effects, acoustics, diffusion phenomena and cell membranes, and even radiology and nuclear physics. The book offers a detailed understanding of fundamental principles and dives in-depth into numerical analysis of biophysics problems.

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New conferences



The banner features a dark blue background with a light blue DNA double helix on the left. To the right of the DNA is a white silhouette of a classical building with columns. The text 'International Biophysics Congress' is in white, '22nd IUPAB & 16th EBSA' is in yellow, and 'September 5-9, 2027' and 'Henry Ford Building Berlin, Germany' are in white. On the right side, there is a green line art illustration of a DNA helix that incorporates images of the Brandenburg Gate and the Berlin Victory Column. At the bottom, a light blue navigation bar contains the following links: WELCOME, GENERAL INFORMATION, REGISTRATION, ABSTRACTS, and EXHIBITION.

International Biophysics Congress
22nd IUPAB & 16th EBSA
September 5-9, 2027
Henry Ford Building Berlin, Germany

WELCOME GENERAL INFORMATION REGISTRATION ABSTRACTS EXHIBITION

<https://www.iupab-ebsa-2027.org/>



The banner has a dark, textured background with a colorful, abstract illustration of biological structures in green, blue, and purple. The text '4th Frontiers in Electron and Scanning Probe Microscopy for the Physical and Life Sciences' is written in white, bold, sans-serif font.

**4th Frontiers in Electron and Scanning
Probe Microscopy for the Physical and
Life Sciences**

<https://natureconferences.streamgo.live/4th-frontiers-in-electron-and-scanning-probe-microscopy/lobby>

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Your BPS2027 Experience Starts Here

Register early for the best rates and get ready for inspiring science, meaningful networking, and new opportunities.

<https://www.biophysics.org/2027meeting>

EMBO Workshop

In situ structural biology: bridging molecular mechanisms with system-wide approaches

<https://www.embl.org/about/info/course-and-conference-office/events/iss27-01/>

NWO Biophysics 2026

5 AND 6 OCTOBER 2026

NWO Biophysics is the annual Dutch conference on physics of life. The conference presents an exciting programme covering a broad range of scientific topics varying from microscopy and cell biology to biomedical engineering. The next edition of NWO Biophysics will take place at NH Conference Centre Koningshof - Veldhoven.



<https://www.nwo.nl/en/meetings/nwo-biophysics-2026>

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Biochemist in Profile

Mohadeseh Azadi, PhD

ISOBC Member



1-What is your view about your membership in the Iran Society of Biophysical Chemistry (ISOBC)?

I see my membership in ISOBC as an important opportunity for scientific synergy. Since my research has an interdisciplinary nature, ranging from the design and characterization of nanocarriers to the study of molecular interactions and cellular as well as radiobiological evaluations, being part of a specialized society like ISOBC can provide an excellent platform for exchanging experience, developing scientific collaborations, and strengthening the biophysical perspective in applied research projects.

2-Would you please explain your biography sketch, university, and your CV?

My name is Mohadese Azadi, and I specialize in biochemistry, with a particular focus on interdisciplinary fields such as biophysics, nanocarrier systems, and radiopharmaceuticals. I completed my bachelor's degree in biochemistry, followed by my MSc and PhD at the Institute of Biochemistry and Biophysics (IBB), University of Tehran. This academic trajectory has provided me with a strong foundation at the interface of basic science and biomedical applications. My work focuses on the design and evaluation of targeted systems, physicochemical characterization, and in vitro and in vivo studies, with a special emphasis on investigating radioligand behavior for cancer-related applications. Overall, my career has been dedicated to applying the principles of biochemistry and biophysics to the development of innovative diagnostic and therapeutic strategies.

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3-Please let us know about your PhD thesis projects and your research achievements.

During my PhD, I focused on the development and preclinical evaluation of a targeted nanocarrier system for breast cancer treatment. The core of this research was published as "Integrin $\alpha v \beta 3$ -Targeted SLNs for Co-Delivery of Paclitaxel and Quercetin in Triple-Negative Breast Cancer" in ACS Applied Materials & Interfaces (June 2026). In this project, the formulation was comprehensively characterized regarding its morphology, particle size distribution, surface charge (zeta potential), peptide conjugation efficiency, thermal behavior, and drug-carrier interactions. Additionally, release behavior was assessed under both physiological and tumor-relevant acidic conditions. Biological activity was then evaluated using 4T1 triple-negative breast cancer models, incorporating cytotoxicity, apoptosis, cell migration, and competitive receptor-binding assays. Furthermore, in vivo studies using radiolabeled nanoparticles and SPECT imaging demonstrated enhanced tumor-associated accumulation and significant tumor-growth inhibition, providing strong preclinical evidence for this combination therapy. My new job focuses on the biophysical and biological characterization of diverse radiolabeled agents. This work involves the application of critical assays including cellular uptake, retention, internalization, saturation, blocking, and competitive binding studies across various cancer cell models. These methodologies are essential for validating receptor affinity and pharmacokinetics, providing a practical foundation that aligns well with the core objectives of the Iran Society of Biophysical Chemistry.

Alongside this doctoral and professional research, I have contributed to other scientific publications. I co-authored the paper 'In Situ Nanoencapsulation of Curcumin in Soy Protein Isolate Amyloid-like Aggregates for Enhanced Wound Healing,' published in ACS Applied Materials & Interfaces (June 2024). Additionally, my MSc project, 'In-vitro (2D and 3D cultures) and in-vivo cytotoxic properties of Zataria multiflora essential oil (ZEO) emulsion in breast and cervical cancer cells,' was published in the Journal of Ethnopharmacology (April 2020), and it later led to an invitation for a lecture at the National and International Congress of Biochemistry and Molecular Biology of Iran.

4- What is your suggestion for promotion of relations for ISOBC members?

Strengthening the relationships among members of society requires continuous and purposeful scientific interaction rather than limiting communication to conferences alone. Regular webinars, journal clubs, specialized meetings, and the formation of scientific groups based on shared research interests can be very effective. In addition, strengthening collaboration between universities, research centers, and industry can create more meaningful and productive partnerships. Developing an active online platform to introduce members, highlight their research areas, and facilitate collaboration opportunities would also contribute significantly to the dynamism and growth of the society.

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Iran is beautiful in every way, a land of breathtaking nature, rich culture, and warm, hospitable, science- and wisdom-loving people

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