

Life Chemistry Research

Biological Systems



Roman Joswik, PhD
Gennady E. Zaikov, DSc
A. K. Haghi, PhD
Editors

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Edited by

**Roman Joswik, PhD, Gennady E. Zaikov, DSc, and
A. K. Haghi, PhD**



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LIFE CHEMISTRY RESEARCH

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LIST OF ABBREVIATIONS

AD	Alzheimer's disease
AFO	ankle foot orthotics
AHB	alkylhydroxybenzenes
AMS	amikacin sulfate
AMS	antibiotics - amikacin
BSA	bovine serum albumin
CBC	cyano-bacterial communities
CBT	cognitive behavioral therapy
ChTA	chitosan acetate
CMC	critical micelle concentration
CTD	common technical document
EMEA	evaluation of medicinal products
EPR	electron paramagnetic resonance
ETP	electron transport particles
FFA	free fatty acids
FSR	fragmented sarcoplasmic reticulum
HAS	human serum albumin
INNs	international non-proprietary names
LMWC	low molecular weight chitosans
LT	longitudinal tubules
MFC	minimal fungicidal concentration
MFD	minimum fungicidal dilution
MIC	minimal inhibitory concentration
MID	minimum inhibitory dilution
NMR	nuclear magnetic resonance
PD	Parkinson's disease
PRCA	pure red cell aplasia
PRET	progressive resisted exercise training
RyR	ryanodine receptor
SIRS	system inflammatory response syndrome
SR	sarcoplasmic reticulum
TC	terminal cisternae
TCM	traditional chinese medicine
TGA	therapeutic goods administration
UPSIT	University of Pennsylvania Smell Identification Test

LIST OF SYMBOLS

m_{∞}	relative amount of water in equilibrium swelling film sample
k	constant connected with parameters of interaction polymer
n	indicator characterizing the mechanism
c_0	surface concentration
τ	constant of proportionality
τ_c	rotational diffusion correlation time
V	volume of the radical
η	dynamic viscosity of the medium
K	Boltzmann constant
T	absolute temperature
n	number of cracks
l	length of a crack
h	depth
D	optical density
α	solubility coefficient

PREFACE

This book, with contributions from many world leaders in the field, is equally appropriate for graduate or research courses in biochemistry. The book has been extensively class-tested and includes tutorials in biology and biochemistry to aid students of varying backgrounds. This exciting new book will be a must-read for years to come for all students and researchers interested in the field of biological chemistry.

This volume also contains experiments related to the content of biological chemistry courses as well as basic/preparatory chemistry courses. These research studies give students an opportunity to go beyond the lectures and words in the textbook to experience the scientific process from which conclusions and theories are drawn.

This book:

- Focuses on fundamental and relevant connections between chemistry and life.
- Elegantly portrays the complementary nature of chemistry and biology. By describing biological processes in detailed chemical terms, the authors have provided a resource that provides an unparalleled look into the fascinating and emerging field of chemical biology.
- Satisfies a major need in chemistry curricula, bridging the gap between introductory organic chemistry and biochemistry/biology.
- Delivers need-to-know information in a succinct style for today's students.

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PART I
BIOLOGICAL MEDICINE

