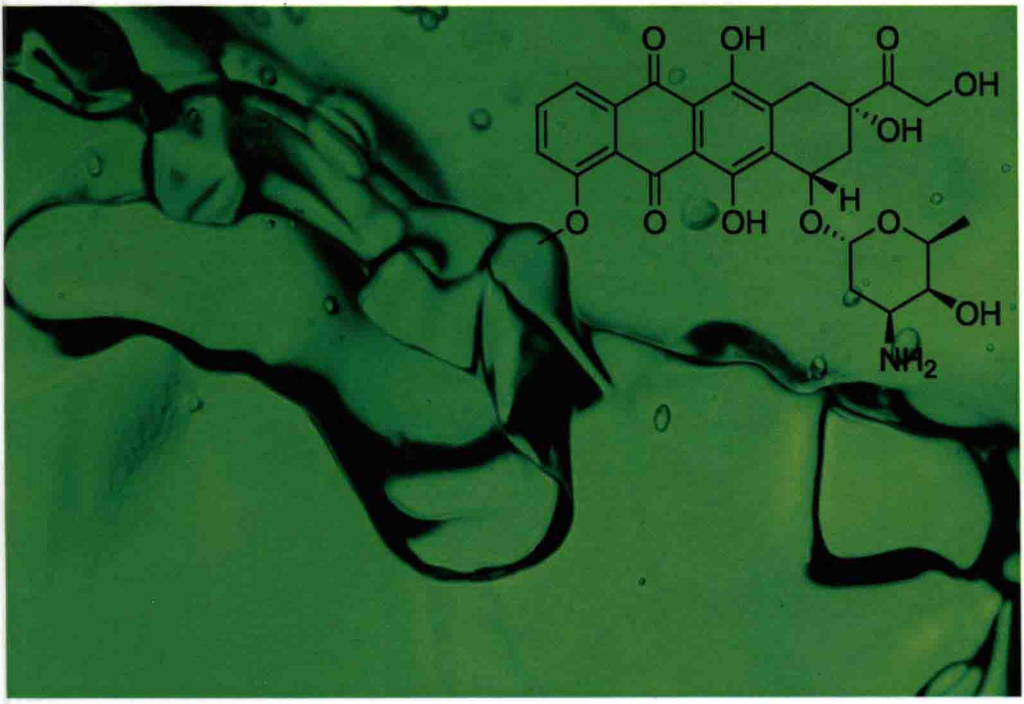
Chemical Technology

Key Developments in Applied Chemistry, Biochemistry and Materials Science



Editors
Nekane Guarrotxena, PhD
Gennady E. Zaikov, DSc
A. K. Haghi, PhD

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LIST OF CONTRIBUTORS

O. M. Alekseeva
Emanuel Institute of Biochemical Physics, Russian Academy of Sciences, Moscow 119334, Email: olgavek@yandex.ru

Sogrina Darya Alexandrovna
Moscow State University of Food Production, 11 Volokolamskoe Shauosse, Moscow 125080, Russia

D. S. Andreev
Volgograd Architectural University Sebryakovsky Branch

M. Arabani
Professor, Faculty of Engineering, University of Guilan, Rasht 3756, Iran, Email: arabani@guilan.ac.ir

V. A., Babkin
Volgograd Architectural University Sebryakovsky Branch, Email: Babkin_v.a@mail.ru

Bakr Mona
The National Institute for Laser Enhanced Sciences, Cairo University, Egypt

A. A. Belov
University of Chemical Technology of Russia (RChTU) him. D. I. Mendeleev, ch. Biotechnologies, Research Institute of Textile Materials, Moscow, Russian Federation, Email: ABelov2004@ yandex.ru

Samarth Bhatt
Jena University Hospital, Friedrich Schiller University, Institute of Human Genetics, Kollegiengasse 10, D-07743 Jena, Germany.

V. I. Binyukov
N. M. Emanuel Institute of Biochemical Physics, Russian Academy of Sciences, ul. Kosygina 4, 119334 Moscow, Russian Federation. Fax (7-495) 137 41 01, tel. (7-495) 939 71 40

S. B. Bokieva
M. V. Lomonosov MSU, Biological Faculty, Leninskie Gory, 119991 Moscow, Russia

S. N. Bondarenko
Volzhsky Polytechnical Institute, branch of Federal State Budgetary Educational Institution of Higher Professional Education, Volgograd State Technical University, 42a Engels Str., 404121, Volzhsky, Volgograd Region, Russia

E. B. Burlakova
Emanuel Institute of Biochemical Physics RAS, 119334, Kosygina str., 4, Moscow, Russia

N. I. Chekunaev
Semenov Institute of Chemical Physics, Russian Academy of Sciences (RAS), Ul. Kosygina, 4, Moscow, 119991, Russia. nichek@mail.ru

M. S. Chirikova
Institute of Microbiology, National Academy of Sciences, Belarus, 220141, Kuprevich str.2, Minsk, Belarus, E-mail: margarita.chirikova@mail.ru, fax: +375(17) 267-47-66

Tarek A. El-Tayeb
The National Institute for Laser Enhanced Sciences, Cairo University, Egypt

Vladimir S. Feofanov,
N. M. Emanuel Institute of Biochemical Physics of the Russian Academy of Sciencesv, Kosygin st. 4, 117977 Moscow, Russia

Sergey N. Gaydamaka
Department Chemical Enzymology, Chemistry Faculty, Moscow State University, Leninskye Gory, 1, build.11, Moscow,119992, Russia, Phone: +7(495) 939-5083, Fax: + 7 (495) 939-5417, e-mail: s.gaidamaka@gmail.com

Sergey Gaydamaka
Murygina Lomonosov Moscow State University, Chemistry Faculty, Department of Chemical Enzymology. 119991, Moscow, Leninsky gory 1/11, fax: +7-495-939-54-17., e-mail: s.gaidamaka@gmail.com

N. Yu. Gerasimov
Emanuel Institute of Biochemical Physics RAS, 119334, Kosygina str., 4, Moscow, Russia, e-mail: n.yu.gerasimov@gmail.com

M. D. Goldfein
Saratov State University named after N.G. Chernyshevsky, Russia, goldfeinmd@mail.ru
A. N. Goloshchapov
Emanuel Institute of Biochemical Physics RAS, 119334, Kosygina str., 4, Moscow, Russia

Iman E. Gomaa
German University in Cairo (GUC), Main Entrance of Al-Tagamoa Al-Khames, New Cairo City, P.O. 11835, Egypt, German University in Cairo, Egypt, iman.gomaa@guc.edu.eg

N. A. Grebenkina
Higher Chemical College, RAS, Miusskaya sq., 9 Moscow, 125047

K. Z. Gumargalieva
N. N. Semenov Institute of Chemical Physics, RAS, 4 Kosygin Street, Moscow, 119334, Russia

A. K. Haghi
Faculty of Engineering, University of Guilan, Rasht, Postal code: 3756, I. R. Iran. Tel: +98(131)6690270, Fax: +98 (131) 6690270. Email:Haghi@guilan.ac.ir

A. N. Inozemtsev
M. V. Lomonosov MSU, Biological Faculty, Leninskie Gory, 119991 Moscow, Russia

V. F. Kablov
Volzhsky Polytechnical Institute (branch) Volgograd State Technical University, 42a Engelsa Street, Volzhsky, Volgograd Region, 404121, Russian Federation, E-mail: vtp@volpi.ru; www.volpi.ru

A. M. Kaplan
Semenov Institute of Chemical Physics, Russian Academy of Sciences (RAS), Ul. Kosygina, 4, Moscow, 119991, Russia.

O. V. Karpukhina
N. N. Semenov Institute of Chemical Physics, RAS, 4 Kosygin Street, E-mail: olgakarp@newmail.ru

V. V. Kasparov
Emanuel Institute of Biochemical Physics RAS, 119334, Kosygina str., 4, Moscow, Russia

N. A. Keibal
Volzhsky Polytechnical Institute (branch) Volgograd State Technical University, 42a Engelsa Street, Volzhsky, Volgograd Region, 404121, Russian Federation, E-mail: vtp@volpi.ru ; www.volpi.ru

Yu. A. Kim
Institute of Cell Biophysics, Russian Academy of Sciences, Pushchino, Moscow region

Lubov Kh Komissarova
N. M. Emanuel Institute of Biochemical Physics of the Russian Academy of Sciences, Kosygin st. 4 117977 Moscow, Russia. e-mail: chembio@sky.chph.ras.ru, e-mail komissarova–lkh@mail.ru, Telephones: 8(495)9361745(office), 8(906)7544974(mobile), Fax: (495)1374101

A. I. Korotaeva
University of Chemical Technology of Russia (RChTU) him. D.I.Mendeleev, ch. Biotechnologies, Research Institute of Textile Materials, Moscow, Russian Federation

A. L., Kovarskij
Emanuel Institute of Biochemical Physics RAS, 119334, Kosygina str., 4, Moscow, Russia

T. V. Krekaleva
Volzhsky Polytechnical Institute (branch) Volgograd State Technical University, 42a Engelsa Street, Volzhsky, Volgograd Region, 404121, Russian Federation, E-mail: vtp@volpi.ru ; www.volpi.ru

Thomas Liehr
Jena University Hospital, Friedrich Schiller University, Institute of Human Genetics, Kollegiengasse 10, D-07743 Jena, Germany

E. I., Martirosova
Emanuel Institute of Biochemical Physics, RAS Kosygina st., 4 Moscow, 119334, e-mail: ms_martins@mail.ru

L. I. Matienko
N. M. Emanuel Institute of Biochemical Physics, Russian Academy of Sciences, ul. Kosygina 4, 119334 Moscow, Russian Federation. Fax (7-495) 137 41 01, tel. (7-495) 939 71 40, e-mail: matienko@sky.chph.ras.ru

L. A. Mosolova
N. M. Emanuel Institute of Biochemical Physics, Russian Academy of Sciences, ul. Kosygina 4, 119334 Moscow, Russian Federation. Fax (7-495) 137 41 01, tel. (7-495) 939 71 40,

Valentina P. Murygina
Department Chemical Enzymology, Chemistry Faculty, Moscow State University, Leninskye Gory, 1, build.11, Moscow,119992, Russia, Phone: +7(495) 939-5083, Fax: + 7 (495) 939-5417, e-mail: vp_murygina@mail.ru, vpm@enzyme.chem.msu.ru

O. V. Nevrova
Emanuel Institute of Biochemical Physics RAS, 119334, Kosygina str., 4, Moscow, Russia

B. K. Novosadov
V. I. Vernadsky Institute of Geochemistry and Analytical Chemistry RAS, 119991 Moscow, Kosygina str., 19, Russian Federation, e-mail: bk.novosadov@mail.ru

I. G. Plashchina
Emanuel Institute of Biochemical Physics, RAS Kosygina st., 4 Moscow, 119334

D. A. Provotorova
Volzhsky Polytechnical Institute, branch of Federal State Budgetary Educational Institution of Higher Professional Education Volgograd State Technical University, 42a Engels Str., 404121, Volzhsky, Volgograd Region, Russia

E. A. Raspopova
University of Chemical Technology of Russia (RChTU) him. D.I.Mendeleev, ch. Biotechnologies, Research Institute of Textile Materials, Moscow, Russian Federation

G. K. Rossieva
Volgograd Architectural University Sebryakovsky branch

E. G. Rozantsev
Saratov State University named after N.G. Chernyshevsky, Russia

A. S. Samsonova
Institute of Microbiology, National Academy of Sciences, Belarus, 220141, Kuprevich str.2, Minsk, Belarus

T. P. Shakun
Institute of Microbiology, National Academy of Sciences, Belarus, 220141, Kuprevich str.2, Minsk, Belarus

A. G. Stepanova
Volzhsky Polytechnical Institute (branch) Volgograd State Technical University, 42a Engelsa Street, Volzhsky, Volgograd Region, 404121, Russian Federation, E-mail: vtp@volpi.ru ; www.volpi.ru

R. Tanzadeh
Department of Civil Engineering.University of Guilan, Rasht, Iran.Tel: +98(131)3229883, Fax: +98 (131) 3231116. Email: rashidtanzadeh@yahoo.com

P. Valentina
Murygina Lomonosov Moscow State University, Chemistry Faculty, Department of Chemical Enzymology. 119991, Moscow, Leninsky gory 1/11, fax: +7-495-939-54-17.

Ananiev Vladimir Vladimirovich
Moscow State University of Food Production, 11 Volokolamskoe shauosse, 125080, Moscow, Russia, kaf.vms@rambler.ru

G.E. Zaikov
N. M. Emanuel Institute of Biochemical Physics, Russian Academy of Sciences, ul. Kosygina 4, 119334 Moscow, Russian Federation. Fax (7-495) 13741 01, tel. (7-495) 939 71 40,-mail: chembio@sky.chph.ras.ru

A. Zhivaev
Volzhsky Polytechnical Institute (branch) Volgograd State Technical University, 42a Engelsa Street, Volzhsky, Volgograd Region, 404121, Russian Federation, E-mail: vtp@volpi.ru ; www.volpi.ru

LIST OF ABBREVIATIONS

AP	acetophenone
AHB	alkylhydroxybenzenes
AR	alkylresorcinols
AC	asphalt concrete
AFM	atomic force microscopy
BNCT	boron neutron capture of tumor therapy
BSA	bovine serum albumin
CNTs	carbon nanotubes
COD	chemical oxygen demand
CNR	chlorinated natural rubber
CMC	critical micelle concentration
DAAD	deutsche akademische austausch dienst
DAC	dialdehydecellulose
DP	diamond pore
DSC	differential scanning calorimeter
DNSA	dinitrosalicylic acid
DSB	double strand breaks
DM	dressing materials
EMEM	eagle's minimal essential medium
EPR	electron paramagnetic resonance
ETP	electron transport particles
ERKs	extracellular signal-regulated kinases
GC	gas chromatograph
GCMD	grand canonical molecular dynamics
GCMC	grand canonical monte carlo
HMPA	hexamethylphosphorotriamide
HR	hexylresorcinol
HMS	high melt strength
HCO	hydrocarbon oxidizing cells
ISCN	international system for human cytogenetic nomenclature
IUPAC	international union of pure and applied chemistry

LED	light emitting diode
LMWC	low molecular weight chitosans
MSD	mean-square displacement
MFI	melt flow index
MPC	methylphenylcarbinol
MR	methylresorcinol
MF	microfiltration
MD	molecular dynamics
MWCO	molecular weight cut-off
MC	monte carlo
MWNT	multi-walled carbon nanotube
NF	nanofiltration
NILES	National Institute of Laser Enhanced Sciences
NCT	neutron capture therapy
NDT	nottingham device test
PEH	phenyl ethyl hydroperoxide
PB	phosphate buffer
PBS	phosphate buffer saline
PTT	photo thermal therapy
PCN	polymer–clay nanocomposites
PP	polypropylene
RESPA	reference system propagator algorithm
RO	reverse osmosis
SEM	scanning electron microscope
SSB	single strand breaks
SWNTs	single-walled carbon nanotubes
SEM	standard error of the mean
SP	straight path
SBS	styrene–butadiene–styrene
TMC	thermomechanical curves
TFOT	thin film oven test
TEM	transmission electron microscopic
UF	ultrafiltration
VACF	velocity autocorrelation function
ZP	zigzag path

LIST OF SYMBOLS

ρ	material density
D_S^*	preexponential factor
A	difference between titration results in test and control samples
A	new generated area at crack penetration
a_S	crack radius
B	concentration of enzyme solution sample
C and n	material parameters
E	modulus of elasticity
L	membrane thickness
LC	lipolytic activity
m	electron rest mass
$m1$	mass of weighing bottle
$m2$	net bottle weight
T	alkali titer
V	volume of analyzed sample
$V1$	extract aliquot volume
$V2$	volume of graduated flask
v_m	limiting crack velocity
$x1$	total concentration of substances

PREFACE

This collection presents to the reader a broad spectrum of chapters in the various branches of industrial chemistry, biochemistry, and materials science which demonstrate key developments in these rapidly changing fields.

This book offers a valuable overview and myriad details on current chemical processes, products, and practices. The book serves a spectrum of individuals, from those who are directly involved in the chemical industry to others in related industries and activities. It provides not only the underlying science and technology for important industry sectors, but also broad coverage of critical supporting topics.

This new book:

- is a collection of chapters that highlight some important areas of current interest in industrial chemistry, biochemistry, and materials science
- focuses on topics with more advanced methods
- emphasizes precise mathematical development and actual experimental details
- analyzes theories to formulate and prove the physicochemical principles
- provides an up-to-date and thorough exposition of the present state-of-the-art complex materials
- familiarizes the reader with new aspects of the techniques used in the examination of polymers, including chemical, physicochemical, and purely physical methods of examination
- describes the types of techniques now available to the chemist and technician and discusses their capabilities, limitations, and applications

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