

THERMOPHILIC MICROORGANISMS

Edited by: Fu-Li Li

Institute of Bioenergy and Bioprocess Technology, Chinese Academy of Sciences, Qingdao, China
c. 250 pp, August 2015

Hardback: ISBN 978-1-910190-13-5 £159, \$319.

Ebook: ISBN 978-1-910190-14-2 £159, \$319

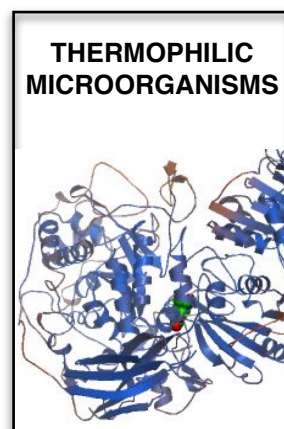
Thermophilic microorganisms thrive in a variety of marine and terrestrial habitats. These organisms have evolved several biochemical and molecular strategies to counteract the deleterious effects of the high temperatures in their environments. Given that temperature is considered to be one of the most important physical factors controlling the adaptation and evolution of organisms, the remarkable ability of thermophilic microorganisms to thrive at high temperatures makes them an ideal model to study this phenomenon. Over the decades these organisms and their enzyme systems have found applications in a variety of industrial and biotechnological applications, for example the heat-stable DNA polymerases used in PCR.

In this book leading scientists highlight the current progress in the most topical areas of research providing a timely overview of the field. The book reviews the ecology, enzymology and genetics of thermophiles and includes topics on the diversity and ecological roles of thermophiles, biochemical properties of thermostable biocatalysts and their applications, polyamines and the impact of viruses on thermophiles, DNA replication and metabolic engineering of thermophiles, and much more. An important feature of the book is the extensive focus on the industrial application of thermostable catalysts including alcohol dehydrogenase, glycoside hydrolase, protease and lipases. In addition the authors discuss current technical challenges and future development trends.

The book is of major importance to academic microbiologists as well as those interested in industrial applications and is a recommended guide for scientists in the fields of microbiology, enzymology, molecular biology and ecology.

Table of contents:

- **Chapter 1:** Ecology and Genetics of Deep-sea Thermophiles. *Li Xuegong, Zhang Yu and Xiao Xiang*
- **Chapter 2:** Diversity of Thermophilic Microorganisms and Their Roles in Carbon Cycle. *Shi-Qi Ji, Dong-Dong Meng, Kun-Di Zhang and Fu-Li Li*
- **Chapter 3:** Biochemical Properties and Applications of Heat-active Biocatalysts. *Christian Schäfers, Skander Elleuche and Garabed Antranikian*
- **Chapter 4:** Lignocellulosic Biomass Deconstruction by the Extremely Thermophilic Genus *Caldicellulosiruptor*. *Jonathan M. Conway, Jeffrey V. Zurawski, Laura L. Lee, Sara E. Blumer-Schuette and Robert M. Kelly*
- **Chapter 5:** Cellulases from Thermophilic Fungi. *Li Duochuan*
- **Chapter 6:** Alcohol Dehydrogenases and their Physiological Functions in Hyperthermophiles. *Kesen Ma and Ching Tse*
- **Chapter 7:** Roles of Polyamines in Thermophiles. *Tairo Oshima*
- **Chapter 8:** DNA Replication in Thermophilic Microorganisms. *Sonoko Ishino and Yoshizumi Ishino*
- **Chapter 9:** Metabolic Engineering of Thermophiles for Biofuel Production. *Ya-Jun Liu and Qiu Cui*
- **Chapter 10:** Thermophilic Viruses and Their Association with Thermophiles. *Wakao Fukuda and Tadayuki Imanaka*



OTHER BOOKS OF INTEREST:

Aquatic Biofilms

Ecology, Water Quality and Wastewater Treatment
Edited by: AM Romani, H Guasch, MD Balaguer
c. 200 pp, January 2016
Hardback: ISBN 978-1-910190-17-3 £159/\$319
Ebook: ISBN 978-1-910190-18-0 £159/\$319
Aquatic biofilms with an emphasis on the characteristics and ecology of biofilms in natural ecosystems and a focus on biofilm applications linked to water pollution problems.

Biofuels

From Microbes to Molecules
Edited by: X Lu
x + 248 pp, July 2014
Hardback: ISBN 978-1-908230-45-4 £159/\$319
Ebook: ISBN 978-1-908230-63-8 £159/\$319
"a timely overview" (*Biotechnol. Agron. Soc. Environ.*); "a highly recommended read" (*Front. Bioeng. Biotechnol.*)

Halophiles

Genetics and Genomes
Edited by: RT Papke, A Oren
xii + 196 pp, May 2014
Hardback: ISBN 978-1-908230-42-3 £159/\$319
Ebook: ISBN 978-1-908230-65-2 £159/\$319
"up-to-date and highly readable" (*Biospektrum*)

Bioinformatics and Data Analysis in Microbiology

Edited by: Ö Taştan Bishop
x + 248 pp, April 2014
Hardback: ISBN 978-1-908230-39-3 £159/\$319
Ebook: ISBN 978-1-908230-73-7 £159/\$319
Invaluable, up-to-date and detailed information on various aspects of bioinformatics data analysis with applications to microbiology.

The Cell Biology of Cyanobacteria

Edited by: E Flores, A Herrero
x + 308 pp, May 2014
Hardback: ISBN 978-1-908230-38-6 £159/\$319
Ebook: ISBN 978-1-908230-92-8 £159/\$319
"up-to-date information" (*Book News*); "I recommend this book" (*Biospektrum*)

Bacterial Membranes

Structural and Molecular Biology
Edited by: H Remaut, R Fronsze
xii + 500 pp, January 2014
Hardback: ISBN 978-1-908230-27-0 £180/\$360
Ebook: ISBN 978-1-908230-91-1 £180/\$360
"I highly recommend this book" (*Biospektrum*)

Cold-Adapted Microorganisms

Edited by: I Yumoto
x + 226 pp, September 2013
Hardback: ISBN 978-1-908230-26-3 £159/\$319
Ebook: ISBN 978-1-908230-90-4 £159/\$319
"a wealth of interesting findings" (*Biospektrum*)

Extremophiles

Microbiology and Biotechnology
Edited by: RP Anitori
xiv + 300 (colour figures) pp, January 2012
Hardback: ISBN 978-1-904455-98-1 £159/\$319
"highlights current areas of research" (*IFIS*); "a good overview" (*Biospektrum*); "recommended" (*Micro. Today*); "essential reading" (*Fungal Diversity*)

Archaea

New Models for Prokaryotic Biology
Edited by: P Blum
viii + 248 pp, April 2008
Hardback: ISBN 978-1-904455-27-1 £159/\$319
Focuses on molecular biology and genomics. Include metal biology, redox chemistry, respiration, sugar catabolism, nucleic acid modification, DNA replication, repair and recombination, signal transduction and transcriptomics.

Aquatic Biofilms

Ecology, Water Quality and Wastewater Treatment
Edited by: AM Romani, H Guasch, MD Balaguer
c. 200 pp, January 2016
Hardback: ISBN 978-1-910190-17-3 £159/\$319
Ebook: ISBN 978-1-910190-18-0 £159/\$319
Emphasis on the characteristics and ecology of biofilms in natural ecosystems.

Alphaviruses

Current Biology
Edited by: S Mahalingam, L Herrero, B Herring
c. 200 pp, January 2016
Hardback: ISBN 978-1-910190-15-9 £159/\$319
Ebook: ISBN 978-1-910190-16-6 £159/\$319
As the first to focus exclusively on alphaviruses, this book serves as an invaluable resource for researchers and clinicians working with alphaviruses and related viruses. Essential reading.

Flow Cytometry in

Microbiology

Technology and Applications
Edited by: MG Wilkinson
c. 230 pp, June 2015
Hardback: ISBN 978-1-910190-11-1 £159/\$319
Ebook: ISBN 978-1-910190-12-8 £159/\$319
A thorough description of flow cytometry and includes practical and up-to-date information aimed specifically at microbiologists.

Probiotics and Prebiotics

Current Research and Future Trends
Edited by: K Venema, AP Carmo
c. 560 pp, August 2015
Hardback: ISBN 978-1-910190-09-8 £180/\$360
Ebook: ISBN 978-1-910190-10-4 £180/\$360
Containing 33 chapters, the book is an invaluable source of information and essential reading for everyone working with probiotics, prebiotics and the gut microbiota.

Epigenetics

Current Research and Emerging Trends
Edited by: BP Chadwick
c. 330 pp, June 2015
Hardback: ISBN 978-1-910190-07-4 £159/\$319
Ebook: ISBN 978-1-910190-08-1 £159/\$319
Thought-provoking discussions on classic aspects of epigenetics and on the newer, emerging areas.

Corynebacterium

glutamicum

From Systems Biology to Biotechnological Applications
Edited by: A Burkovski
x + 198 pp, May 2015
Hardback: ISBN 978-1-910190-05-0 £159/\$319
Ebook: ISBN 978-1-910190-06-7 £159/\$319
A comprehensive and authoritative overview of current research, this book is essential reading for everyone working with *Corynebacterium* and related organisms.

Advanced Vaccine Research Methods for the Decade of Vaccines

Edited by: F Bagnoli, R Rappuoli
xiv + 456 pp, April 2015
Hardback: ISBN 978-1-910190-03-6 £180/\$360
Ebook: ISBN 978-1-910190-04-3 £180/\$360
A thorough and up-to-date review of vaccinology research in age of omics technologies. Essential reading for everyone working in vaccine research and development.

Antifungals

From Genomics to Resistance and the Development of Novel Agents
Edited by: AT Coste, P Vandeputte
x + 334 pp, April 2015
Hardback: ISBN 978-1-910190-01-2 £159/\$319
Ebook: ISBN 978-1-910190-02-9 £159/\$319
A timely overview of current antifungal research with chapters written from a molecular and genomic perspective.

Bacteria-Plant Interactions

Advanced Research and Future Trends
Edited by: J Murillo, BA Vinatzer, RW Jackson, et al.
x + 228 pp, March 2015
Hardback: ISBN 978-1-908230-58-4 £159/\$319
Ebook: ISBN 978-1-910190-00-5 £159/\$319
"an up-to-date overview" (Ringgold)

Aeromonas

Edited by: J Graf
viii + 230 pp, May 2015
Hardback: ISBN 978-1-908230-56-0 £159/\$319
Ebook: ISBN 978-1-908230-57-7 £159/\$319
"a comprehensive review" (Ringgold); "well-written, informative" (Frontiers Microbiol.)

Antibiotics

Current Innovations and Future Trends
Edited by: S Sánchez, AL Demail
xii + 430 pp, January 2015
Hardback: ISBN 978-1-908230-54-6 £180/\$360
Ebook: ISBN 978-1-908230-55-3 £180/\$360
"a useful resource" (Book News)

Leishmania

Current Biology and Control
Edited by: S Adak, R Datta
x + 242 pp, January 2015
Hardback: ISBN 978-1-908230-52-2 £159/\$319
Ebook: ISBN 978-1-908230-53-9 £159/\$319
"an excellent reference" (Doodys)

Acanthamoeba

Biology and Pathogenesis (2nd edition)
Edited by: NA Khan
x + 334 pp, January 2015
Hardback: ISBN 978-1-908230-50-8 £159/\$319
Ebook: ISBN 978-1-908230-51-5 £159/\$319
"comprehensive review" (Book News)

Microarrays

Current Technology, Innovations and Applications
Edited by: Z He
x + 246 pp, August 2014
Hardback: ISBN 978-1-908230-49-2 £159/\$319
Ebook: ISBN 978-1-908230-59-1 £159/\$319
Focused on current microarray technologies and their applications in environmental microbiology.

Metagenomics of the Microbial Nitrogen Cycle

Theory, Methods and Applications
Edited by: D Marco
xiv + 268 pp, September 2014
Hardback: ISBN 978-1-908230-48-5 £159/\$319
Ebook: ISBN 978-1-908230-60-7 £159/\$319
"a strong overview" (Ringgold)

Pathogenic Neisseria

Genomics, Molecular Biology and Disease Intervention
Edited by: JK Davies, CM Kahler
x + 260 pp, July 2014
Hardback: ISBN 978-1-908230-47-8 £159/\$319
Ebook: ISBN 978-1-908230-61-4 £159/\$319
"a current overview on the most important research" (Ringgold)

Proteomics

Targeted Technology, Innovations and Applications
Edited by: M Fuentes, J LaBaer
x + 186 pp, September 2014
Hardback: ISBN 978-1-908230-46-1 £159/\$319
Ebook: ISBN 978-1-908230-62-1 £159/\$319
"many excellent chapters" (Doodys)

Biofuels

From Microbes to Molecules
Edited by: X Lu
x + 248 pp, July 2014
Hardback: ISBN 978-1-908230-45-4 £159/\$319
Ebook: ISBN 978-1-908230-63-8 £159/\$319
"a timely overview" (Biotechnol. Agron. Soc. Environ.); "a highly recommended read" (Front. Bioeng. Biotechnol.)

Human Pathogenic Fungi

Molecular Biology and Pathogenic Mechanisms
Edited by: DJ Sullivan, GP Moran
x + 342 pp, June 2014
Hardback: ISBN 978-1-908230-44-7 £180/\$360
Ebook: ISBN 978-1-908230-66-9 £159/\$319
"a carefully edited and well-produced reference work" IMA Fungus

Applied RNAi

From Fundamental Research to Therapeutic Applications
Edited by: P Arbuthnot, MS Weinberg
x + 252 pp, June 2014
Hardback: ISBN 978-1-908230-43-0 £159/\$319
Ebook: ISBN 978-1-908230-67-6 £159/\$319
"Essential reading" (Biotechnol Agron Soc Environ); "recommended" (Fungal Diversity)

Halophiles

Genetics and Genomes
Edited by: RT Papke, A Oren
xii + 196 pp, May 2014
Hardback: ISBN 978-1-908230-42-3 £159/\$319
Ebook: ISBN 978-1-908230-65-2 £159/\$319
"up-to-date and highly readable" (Biospektrum)

Molecular Diagnostics

Current Research and Applications
Edited by: J Huggett, J O'Grady
xii + 248 pp, May 2014
Hardback: ISBN 978-1-908230-41-6 £159/\$319
Ebook: ISBN 978-1-908230-64-5 £159/\$319
I would highly recommend this book (Doodys)

Phage Therapy

Current Research and Applications
Edited by: J Borysowski, R Miedzybrodzki, A Górski
xvi + 378 pp, April 2014
Hardback: ISBN 978-1-908230-40-9 £180/\$360
Ebook: ISBN 978-1-908230-74-4 £180/\$360
"comprehensive overview" (BioSpektrum)

Bioinformatics and Data Analysis in Microbiology

Edited by: Ö Taştan Bishop
x + 248 pp, April 2014
Hardback: ISBN 978-1-908230-39-3 £159/\$319
Ebook: ISBN 978-1-908230-73-7 £159/\$319
Invaluable, up-to-date and detailed information on various aspects of bioinformatics data analysis.

The Cell Biology of

Cyanobacteria

Edited by: E Flores, A Herrero
x + 308 pp, May 2014
Hardback: ISBN 978-1-908230-38-6 £159/\$319
Ebook: ISBN 978-1-908230-92-8 £159/\$319
"up-to-date information" Book News; "I recommend this book" (Biospektrum)

Pathogenic Escherichia coli

Molecular and Cellular Microbiology
Edited by: S Morabito
x + 304 pp, April 2014
Hardback: ISBN 978-1-908230-37-9 £159/\$319
Ebook: ISBN 978-1-908230-99-7 £159/\$319
"current, comprehensive, and a great resource" (JAVMA)

Campylobacter Ecology and Evolution

Edited by: SK Sheppard
xvi + 360 pp, April 2014
Hardback: ISBN 978-1-908230-36-2 £159/\$319
Ebook: ISBN 978-1-908230-98-0 £159/\$319
An important resource summarising our current knowledge of *Campylobacter* ecology and evolution. Essential reading!

Burkholderia

From Genomes to Function
Edited by: T Coenye, E Mahenthiralingam
viii + 254 pp, February 2014
Hardback: ISBN 978-1-908230-35-5 £159/\$319
Ebook: ISBN 978-1-908230-97-3 £159/\$319
"this Burkholderia book is something special" (Biospektrum); "a useful source of information" (Fungal Diversity)

Myxobacteria

Genomics, Cellular and Molecular Biology
Edited by: Z Yang, PI Higgs
x + 236 pp, February 2014
Hardback: ISBN 978-1-908230-34-8 £159/\$319
Ebook: ISBN 978-1-908230-96-6 £159/\$319
"impressive and detailed book" (Biospektrum)

Next-generation Sequencing

Current Technologies and Applications
Edited by: J Xu
xii + 160 pp, March 2014
Hardback: ISBN 978-1-908230-33-1 £120/\$240
Ebook: ISBN 978-1-908230-95-9 £120/\$240
"written in an accessible style" (Zentralblatt Math); "recommend this book to all investigators" (ChemMedChem)

Omics in Soil Science

Edited by: P Nannipieri, G Pietramellara, G Renella
x + 198 pp, January 2014
Hardback: ISBN 978-1-908230-32-4 £159/\$319
Ebook: ISBN 978-1-908230-94-2 £159/\$319