# Chemistry & Material Science

May to August 2023

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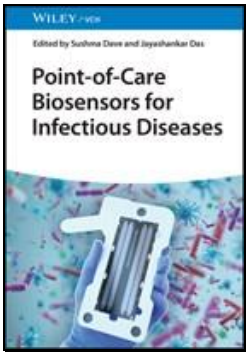
# Table of Contents

## Chemistry




Wiley-VCH
9783527350452
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Hardcover

380 Pages
Science / Life Sciences

# Point-of-Care Biosensors for Infectious Diseases

Sushma Dave, Jayashankar Das

## Summary

**Comprehensive resource covering key developments in biosensor-based diagnostics for infectious diseases**

With its overview of currently available technologies, *Point-of-Care Biosensors for Infectious Diseases* serves as a starting point for the successful development and application of pathogen biosensors in a point-of-care setting. Here, expert authors review current challenges in pathogen detection and the selection of suitable biomarkers, detail currently available biosensor platforms including electrochemical, piezoelectric, magnetic, and optical sensors, and cover technology development for point-of-care biosensors for viral, bacterial, and parasitic infections.

*Point-of-Care Biosensors for Infectious Diseases* covers key topics such as:

- Fundamentals of biosensor detection, with a focus on optical and electrochemical techniques
- Organic and inorganic based nanomaterials for healthcare diagnostics
- Strategies for miniaturizing biosensor devices, and state-of-the-art integrated sensing platforms
- Latest trends in point-of-care biosensing systems to detect, diagnose, and monitor infectious diseases

Providing comprehensive coverage of the subject, *Point-of-Care Biosensors for Infectious Diseas*...

## Contributor Bio

**Sushma Dave** received her academic degrees in Analytical Chemistry, Electrochemistry, and Environmental Chemistry from Jai Narayan Vyas University, Jodhpur (India). Since 1999, she has been teaching chemistry to students of engineering and basic sciences and is currently an Associate Professor at the Jodhpur Institute of Engineering & Technology.

**Jayashankar Das** holds a PhD in Biotechnology and worked as a scientist for the government of India at IBSD. He is currently serving as Director for SOA University.

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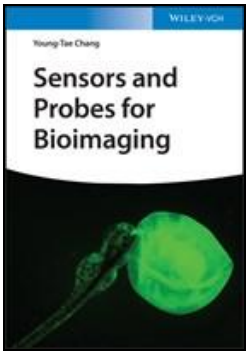



Wiley VCH
9783527349609
Pub Date: 6/28/23
Hardcover

300 Pages

# Sensors and Probes for Bioimaging

Y–T Chang


Wiley
9781119682608
Pub Date: 7/11/23
Hardcover

480 Pages
Medical / Forensic Medicine
Series: Forensic Science in Focus

# Burnt Human Remains

**Recovery, Analysis, and Interpretation**

Sarah Ellingham, Joe Adserias-Garriga, Sara C. Zapico, Douglas H. Ubelaker

## Summary

**BURNT HUMAN REMAINS**
**An all-encompassing reference and guide designed for professionals involved in the forensic analysis of burnt remains**

*Burnt Human Remains: Recovery, Analysis and Interpretation* presents an in-depth multidisciplinary approach to the detection, recovery, analysis, and identification of thermally altered remains. Bridging the gap between research and practice, this invaluable one-stop reference provides detailed coverage of analytical techniques in forensic medicine and pathology, forensic anthropology, forensic odontology, and forensic chemistry and forensic biology. Contributions from a panel of expert authors review the newest findings in forensics research and discuss their applicability to forensic case work.

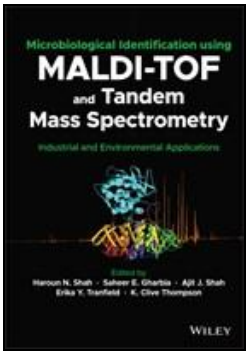
Opening with a historical overview of the discipline, the book covers the search and recovery aspects of burnt human remains, medico-legal investigations, determination of the post mortem interval of burnt remains, structural changes of burnt bone and teeth, DNA extraction from burnt remains, and much more. Throughout the text, the authors emphasize the importance of understanding the changes undergone by bodies when subjected to fire for establishing identi...

## Contributor Bio

**Edited by**

**Sarah Ellingham,** Forensic Coordinator, International Committee of the Red Cross (ICRC), Geneva, Switzerland.

**Joe Adserias Garriga,** Assistant Professor, Department of Applied Forensic Sciences, Mercyhurst University, Pennsylvania, USA.




Wiley
9781119814054
Pub Date: 4/3/23
Hardcover

560 Pages
Science / Spectroscopy & Spectrum Analysis

# Microbiological Identification using MALDI-TOF and Tandem Mass Spectrometry

**Industrial and Environmental Applications**

Haroun N. Shah, Saheer E. Gharbia, Ajit J. Shah, Erika Y. Tranfield, K. Clive Thompson

## Summary

**Microbiological Identification using MALDI-TOF and Tandem Mass Spectrometry**
**Detailed resource presenting the capabilities of MALDI mass spectrometry (MS) to industrially and environmentally significant areas in the biosciences**

*Microbiological Identification using MALDI-TOF and Tandem Mass Spectrometry* fulfills a need to bring the key analytical technique of MALDI mass spectrometric analysis into routine practice by specialists and non-specialists, and technicians. It informs and educates established researchers on the development of techniques as applied to industrially significant areas within the biosciences. Throughout the text, the reader is presented with recognized and emerging techniques of this powerful and continually advancing field of analytical science to key areas of importance.

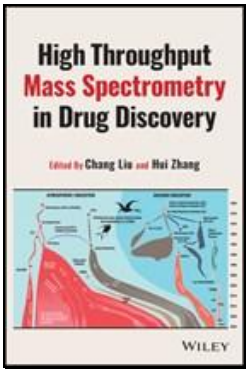
While many scientific papers are reporting new applications of MS-based analysis in specific foci, this book is unique in that it draws together an incredibly diverse range of applications that are pushing the boundaries of MS across the broad field of biosciences.

Contributed to by recognized experts in the field of MALDI MS who have been key players in promoting the advancement and dissemination ...

## Contributor Bio

**Haroun N. Shah** led the establishment of unique laboratory capabilities, transforming Public Health Laboratory Services' identification of new and emerging threats through mass spectrometry combined with molecular technologies between 1999-2015. After his retirement, he continued to provide expert advice and training to industry and academia to advance innovations and embed new applications of proteomics across biosciences.

**Saheer E. Gharbia** is the Deputy Director of Gastrointestinal Infection and Food Safety for the UK Health




Wiley
9781119678434
Pub Date: 8/22/23
Hardcover

512 Pages
Science / Chemistry

## High Throughput Mass Spectrometry in Drug Discovery

C Liu

### Summary

**Apply mass spectrometry to every phase of new drug discovery with this cutting-edge guide**

Mass spectrometry is a technique that identifies and characterizes compounds based on their mass – the fundamental molecular characteristic. It has become an invaluable analytical tool in various disciplines, industries, and research fields. It has become particularly central to new drug discovery and development, which broadly deploys mass spectrometry at every phase. The pharmaceutical industry has become one of the main drivers of technological development in mass spectrometry.

*High Throughput Mass Spectrometry in Drug Discovery* offers a comprehensive introduction to mass spectrometry and its applications in pharmaceutical development. It covers the foundational principles and science of mass spectrometry before moving to specific experimental methods and their applications at various stages of drug discovery. Its thorough treatment and detailed guidance make it an invaluable tool for pharmaceutical research and development.

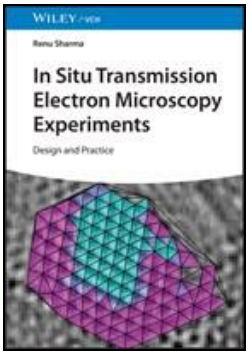
*High Throughput Mass Spectrometry in Drug Discovery* readers will also find:

- Detailed analysis of techniques, including label-free screening, synthetic reaction optimization...

### Contributor Bio

**Chang Liu, Ph.D.,** is a Staff Research Scientist at SCIEX, a global leader in the design and production of mass spectrometers. He has published extensively on using mass spectrometry in drug discovery and development.

**Hui Zhang, Ph.D.,** is the Vice President of Analytical Technologies at Entos, a biotech company focusing on Artificial Intelligence and High Throughput Experimentation driving drug discovery. He has published widely on mass spectrometry and its pharmaceutical applications through his previous tenure at Pfizer.




Wiley-VCH
9783527347988
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Hardcover

368 Pages
Science / Microscopes &
Microscopy

## In Situ Transmission Electron Microscopy Experiments

**Design and Practice**

Renu Sharma

### Summary

**Design and execute cutting-edge experiments in electron microscopy with this essential guide**

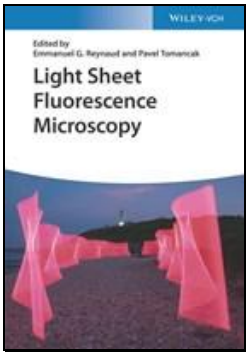
In situ microscopy is a recently-discovered and rapidly-developing approach to transmission electron microscopy (TEM) that allows for the study of molecular changes and processes while they are in progress. Experimental specimens are subjected to stimuli that replicate real-world conditions and their reactions are observed at a previously unprecedented scale. Though in situ microscopy is becoming an increasingly important approach to TEM, there are no current texts combining an up-to-date overview of this cutting-edge set of techniques with the combined experience of professionals trained in in-situ TEM.

*In Situ Transmission Election Micropscopy Experiments* meets this need with a work that synthesizes the collective experience of myriad collaborators. It constitutes a comprehensive guide to planning and performing in situ TEM measurements, incorporating both fundamental principles and novel techniques. Its combination of technical detail and practical how-to advice makes it an indispensable introduction to this area of research.

*In Situ Transmission Electron Microscopy Experiments* readers will...

### Contributor Bio

**Renu Sharma, PhD,** is an NIST Emeritus Fellow and worked as project leader there from 2009 to 2019. Before working at NIST, she was Senior Research Scientist in the LeRoy Eyring Center for Solid State Science at Arizona State University, as well as an affiliated faculty member in multiple departments. She is a pioneer in the field of tranmission electron microscopy who has published extensively on the subject.

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Paperback

416 Pages
Science / Microscopes & Microscopy

## Light Sheet Fluorescence Microscopy

EG Reynaud

### Summary

**An indispensable guide to a novel, revolutionary fluorescence microscopy technique!**

Light sheet-based fluorescence microscopy has revolutionized microscopy, since it allows scientists to perform experiments in an entirely different manner and to record data that had not been accessible before. With contributions from noted experts in the fields of physics, biology, and computer science, *Light Sheet Fluorescence Microscopy* is a unique guide that offers a practical approach to the subject, including information on the basics of light sheet fluorescence microscopy, instrumentation, applications, sample preparation, and data analysis.

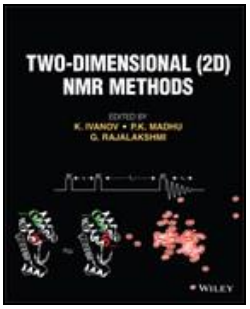
Comprehensive in scope, the book is filled with the cutting-edge methods as well as valuable insider tips. Grounded in real-world applications, the book includes chapters from major manufacturers that explores their recent systems and developments. In addition, the book hightlights a discussion of a "do-it-yourself" light sheet microscope, making the technique affordable for every laboratory. This important book:

- Serves as an easy-to-understand introduction to light sheet-based fluroescence
- Includes numerous tips and tricks for advanced practitioners
- Provides ...

### Contributor Bio

**Emmanuel Reynaud, PhD,** is Stokes Lecturer in Biology at University College Dublin, Ireland.

**Pavel Tomancak, PhD,** is Senior Permanent Research Group Leader at the Max Planck Institute of Molecular Cell Biology and Genetics in Dresden, Germany.




Wiley
9781119806691
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Hardcover

592 Pages
Science / Spectroscopy & Spectrum Analysis

## Two-Dimensional (2D) NMR Methods

Konstantin Ivanov, K. P. Madhu, G Rajalakshmi

### Summary

**TWO-DIMENSIONAL (2D) NMR METHODS**
**Practical guide explaining the fundamentals of 2D-NMR for experienced scientists as well as relevant for advanced students**

*Two-Dimensional (2D) NMR Methods* is a focused work presenting an overview of 2D-NMR concepts and techniques, including basic principles, practical applications, and how NMR pulse sequences work.

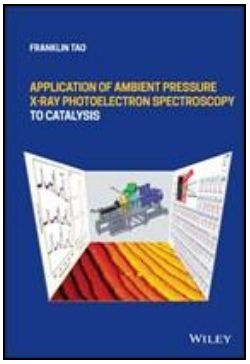
Contributed to by global experts with extensive experience in the field, *Two-Dimensional (2D) NMR Methods* provides in-depth coverage of sample topics such as:

- Basics of 2D-NMR, data processing methods (Fourier and beyond), product operator formalism, basics of spin relaxation, and coherence transfer pathways
- Multidimensional methods (single- and multiple-quantum spectroscopy), NOESY (principles and applications), and DOSY methods
- Multiple acquisition strategies, anisotropic NMR in molecular analysis, ultrafast 2D methods, and multidimensional methods in bio-NMR
- TROSY (principles and applications), field-cycling and 2D NMR, multidimensional methods and paramagnetic NMR, and relaxation dispersion experiments

This text is a highly useful resource for NMR specialists and advanced students studying NMR, along with users in research, academic and comm...

### Contributor Bio

**K. Ivanov**[‡] (International Tomography Center, Novosibirsk, Russia) was actively involved in teaching at the Novosibirsk State University, ITC Novosibirsk, and at various schools for young researchers, and was a specialist in NMR theory and NMR methods development, notably, spin hyperpolarization methods.




Wiley
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Pub Date: 8/7/23
Hardcover

272 Pages
Science / Spectroscopy & Spectrum Analysis

## Application of Ambient Pressure X-ray Photoelectron Spectroscopy to Catalysis

Franklin (Feng) Tao

### Summary

**APPLICATION OF AMBIENT PRESSURE X-RAY PHOTOELECTRON SPECTROSCOPY**
**Authoritative and detailed reference on ambient-pressure x-ray photoelectron spectroscopy for practitioners and researchers starting in the field**

*Application of Ambient Pressure X-ray Photoelectron Spectroscopy to Catalysis* introduces a relatively new analytical method and its applications to chemistry, energy, environmental, and materials sciences, particularly the field of heterogeneous catalysis, covering its background and historical development, its principles, the instrumentation required to use it, analysis of data collected with it, and the challenges it faces.

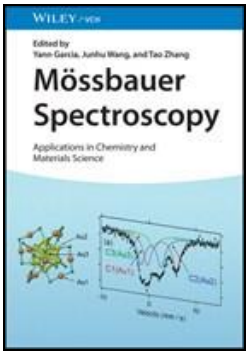
The features of this method are described early in the text; the starting chapters provide a base for understanding how AP-XPS tracks crucial information in terms of the surface of a catalyst during catalysis. The second half of this book delves into the specific applications of AP-XPS to fundamental studies of different catalytic reactions. In later chapters, the focus is on how AP-XPS could provide key information toward understanding catalytic mechanisms.

To aid in reader comprehension, the takeaways of each chapter are underlined.

In *Application of Ambie*...

### Contributor Bio

**Professor Franklin Tao,** Dept of Chemical and Petroleum Engineering, University of Kansas. Professor Tao graduated from Princeton University and carried out his postdoctoral research at University of California-Berkeley and Lawrence Berkeley National Laboratory. He has published about 190 research articles and is an elected fellow of AAAS (2017) and RSC (2014). He was on the advisory editorial boards or editorial boards of several journals, including *Chemical Society Reviews* and *Catalysis Science & Technology*.




Wiley-VCH
9783527346912
Pub Date: 8/7/23
Hardcover

320 Pages
Science / Spectroscopy & Spectrum Analysis

## Mossbauer Spectroscopy

**Applications in Chemistry and Materials Science**

Yann Garcia, Junhu Wang, Tao Zhang

### Summary

**Unique and comprehensive overview of the versatile applications of Mössbauer spectroscopy in chemistry and related fields**

*Mössbauer Spectroscopy* provides a comprehensive overview of applications of Mössbauer spectroscopy in different areas of chemistry, focusing on the applications that are relevant in the field and without extensively delving on the technique and its developments,. The book shows the versatility of Mössbauer spectroscopy in finding useful information on electronic structure, structural insights, and solid-state effects of chemical systems.

To aid in reader comprehension and accessibility, contents are well-structured and divided in five different sections: Molecular Electronics, Energy, Life Sciences and Sustainable Development, Computation of Mössbauer Parameters and Chemistry of Nanomaterials.

Edited by prominent scientists in the field and authored by a group of international experts, *Mössbauer Spectroscopy* covers sample topics such as:

- Size effect of intercalated cation on the charge transfer phase transition and ferromagnetism for iron mixed-valence systems
- 57Fe and 119Sn-Mössbauer probes for multifunctional cyano-bridged compounds and metal atom dynamics of Fe an...

### Contributor Bio

**Yann Garcia** studied chemistry and physics at the University of Bordeaux (France), where he also completed his PhD degree. He joined the UCLouvain (Belgium) in 2001 where he is currently a Professor of Analytical Chemistry. **Junhu Wang** is Full Professor & Group Leader at Dalian Institute of Chemical Physics (DICP) and Chinese Academy of Sciences (CAS). **Tao Zhang** is Vice President at the Chinese Academy of Sciences.


Wiley-Scrivener
9781394174683
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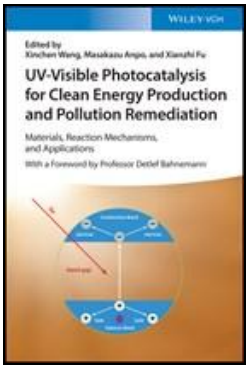
Hardcover

400 Pages
Science / Life Sciences

## Nanocarrier Vaccines

**Biopharmaceutics-Based Fast Track Development**

Vivek Chavda, Vasso Apostolopoulos




Wiley-VCH
9783527350506
Pub Date: 2/28/23
Hardcover

384 Pages
Technology & Engineering / Materials Science

## UV-Visible Photocatalysis for Clean Energy Production and Pollution Remediation

**Materials, Reaction Mechanisms, and Applications**

Xinchen Wang, Masakazu Anpo, Xianzhi Fu

### Summary

**UV-Visible Photocatalysis for Clean Energy Production and Pollution Remediation**
**Comprehensive resource detailing fundamentals of photocatalysis, clean energy production, and pollution treatment, as well as recent developments in each field**

*UV-Visible Photocatalysis for Clean Energy Production and Pollution Remediation*: *Materials, Reaction Mechanisms, and Applications* provides current developments in photocatalytic reactions for both inorganic and organic-based materials which operate under UV-visible light or sunlight irradiation, with a focus on the fundamentals and applications in clean energy production and pollution remediation.

The text curates interesting and important research surrounding photocatalysis for hydrogen production, including the fundamentals and photocatalytic remediation of our better environments, which covers the reduction of $CO_2$ and fixation of $N_2$ with $H_2O$ under UV-visible light or sunlight irradiation. The first chapter of the book introduces these diverse subjects by including a brief history of the developments of photocatalysis research since around the 1960s.

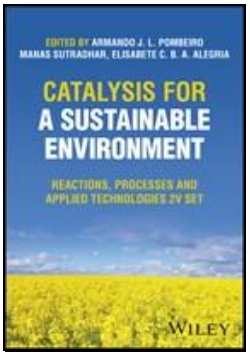
Specific sample topics covered in this book include:

- Visible-light active photocatalysts in pollutan...

### Contributor Bio

***Prof. Xinchen Wang*** *is currently the Vice President of Fuzhou University, Director of the State Key Laboratory of Photo-catalysis on Energy and Environment as well as the Dean of the College of Chemistry of Fuzhou University, P.R. China.*

***Prof. Masakazu Anpo*** *is presently a Special Honorary Professor & International Advisor of the State Key*




Wiley
9781119870524
Pub Date: 8/21/23
Hardcover

800 Pages
Technology & Engineering / Materials Science

## Catalysis for a Sustainable Environment

**Reactions, Processes and Applied Technologies, 2 Volume Set**

Armando J. L. Pombeiro, Manas Sutradhar, Elisabete C. B. A. Alegria

### Summary

**Interdisciplinary approach to sustainability, illustrating current catalytic approaches in applied chemistry, chemical engineering, and materials science**

*Catalysis for a Sustainable Environment* covers the use of catalysis in its various approaches, including homogeneous, supported, and heterogeneous catalysis, and photo- and electrocatalysis, towards sustainable environmental benefits. The text fosters interdisciplinarity in sustainability by illustrating modern perspectives in catalysis, from fields including inorganic, organic, organometallic, bioinorganic, pharmacological, and analytical chemistry, along with chemical engineering and materials science.

The chapters are grouped in seven sections on (i) Carbon Dioxide Utilization, (ii) Volatile Organic Compounds (VOCs) Transformation, (iii) Carbon-based Catalysis, (iv) Coordination, Inorganic, and Bioinspired Catalysis, (v) Organocatalysis, (vi) Catalysis for Water and Liquid Fuels Purification, and (vii) Hydrogen Formation/Storage.

Sample topics covered in *Catalysis for a Sustainable Environment* include:

- Activation of relevant small molecules with strong environmental impact and carbon-based catalysts for sustainable chemical process...

### Contributor Bio

**Armando Pombeiro** is Full Professor Jubilado at Instituto Superior Técnico, Universidade de Lisboa, member of the Academy of Sciences of Lisbon, of the European Academy of Sciences (EURASC) and of the Academia Europaea. His research addresses activation of small molecules with industrial, environmental or biological significance.

**Manas Sutradhar** is an Assistant Professor at the Universidade Lusófona, Lisbon and an integrated researcher at the Centro de Química Estrutural, Instituto Superior Técnico, Universidade de Lisboa, Portugal.

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Wiley-Scrivener
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Hardcover

350 Pages
Technology & Engineering / Power Resources

## AI-Based Solutions for Hybrid and Electric Vehicles

Sulabh Sachan, P. Sanjeevikumar, Sanchari Deb

## Charging Infrastructures for Hybrid and Electric Vehicles

Sulabh Sachan, P. Sanjeevikumar, Sanchari Deb

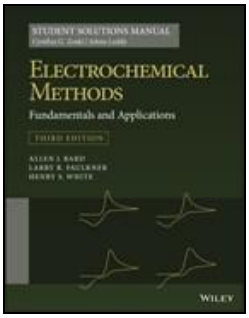

Wiley-Scrivener
9781119768968
Pub Date: 9/20/23
Hardcover

350 Pages
Technology & Engineering / Power Resources

## Electrochemical Methods *(3rd Edition)*

**Fundamentals and Applications 3e, Student Solutions Manual**

Cynthia G. Zoski, Johna Leddy, Allen J. Bard, Larry R. Faulkner, Henry S. White




Wiley
9781119524069
Pub Date: 9/5/23
Paperback

200 Pages
Science / Chemistry

### Summary

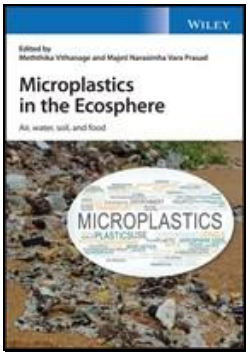
**Provides students with solutions to problems in the 3rd edition of the classic textbook Electrochemical Methods: Fundamentals and Applications**

*Electrochemical Methods* is a popular textbook on electrochemistry that takes the reader from the most basic chemical and physical principles, through fundamentals of thermodynamics, kinetics, and mass transfer, all the way to a thorough treatment of all important experimental methods. Holistically, it offers comprehensive coverage of all important topics in the field. To aid in reader comprehension, exercises are included at the end of each chapter which extend concepts introduced in the text or show how experimental data are reduced to fundamental results. This book provides worked solutions for many of the end-of-chapter exercises and is a key resource for any student who makes use of the original textbook.

### Contributor Bio

**Cynthia G. Zoski**, Research Professor of Chemistry and Associate Director of the Center for Electrochemistry, The University of Texas at Austin, USA, is co-author of the solutions manual for the 2nd and 3rd editions of *Electrochemical Methods*. Her current research focuses on electrochemistry at the micro- and nanoscale in order to understand practical chemical, physical, materials, and biologically-related problems.

**Johna Leddy,** Associate Professor, The University of Iowa, USA is co-author of the solutions manual for the 2nd edition of *Electrochemical Methods*. Her electrochemical research interests range from fundamentals through measurements to build of electrochemical energy systems. Of special focus are classical modeling methods, modified electrodes, and magnetic effects on electron tran...




Wiley
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Hardcover

528 Pages
Science / Chemistry

## Microplastics in the Ecosphere

**Air, Water, Soil,and Food**

Meththika Vithanage, Majeti Narasimha Vara Prasad

### Summary

**Discover the environmental impact of microplastics with this comprehensive resource**

Microplastics are the minute quantities of plastic that result from industrial processes, household release and the breakdown of larger plastic items. Widespread reliance on plastic goods and, particularly, single-use plastics, which has been increased by the COVID-19 pandemic, has made microplastics ubiquitous; they can be found throughout the ecosphere, including in the bloodstreams of humans and other animals. As these plastics emerge as a potential threat to the environment and to public health, it has never been more critical to understand their distribution and environmental impact.

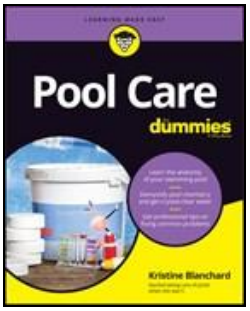
*Microplastics in the Ecosphere* aims to cultivate that understanding with a comprehensive overview of microplastics in terrestrial ecosystems. It analyzes microplastic distribution in aerosphere, hydrosphere, and soil, tracing these plastics from their production on land to their distribution—overwhelmingly—in maritime ecosystems. The result is a book that will inform researchers and policymakers as we look to tackle this emerging challenge globally.

*Microplastics in the Ecosphere* readers will also find:

- Introductory in...

### Contributor Bio

**Meththika Vithanage, PhD** is a Professor and founding Director of the Ecosphere Resilience Research Centre, University of Sri Jayewardenepura, Sri Lanka. She holds adjunct professor positions in the UWA, Australia, UPES, India and NIFS, Sri Lanka. She has published more widely than any other environmental science researcher in Sri Lanka. She is a Highly Cited Researcher and publishes widely in the field of Environmental Science.




For Dummies
9781394166114
Pub Date: 5/23/23
Paperback

384 Pages
House & Home / Outdoor & Recreational Areas

## Pool Care For Dummies

Kristine Blanchard

### Summary

**Crystal-clear advice for maintaining a crystal-clear swimming pool**

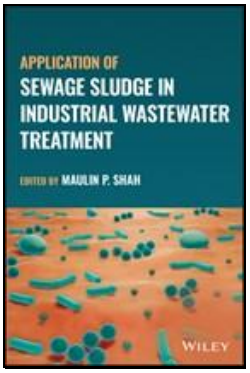
Keeping a swimming pool ready for use requires some chemistry know-how, an understanding of how pool mechanics work, and some time spent doing good old-fashioned cleaning work. *Pool Care For Dummies* offers a reliable, comprehensive resource for building the knowledge that lets you turn pool maintenance into a do-it-yourself task. Written by a certified swimming pool professional who started taking care of pools when she was 5 years old, this book helps you separate the good advice from the bad as you learn to build an upkeep schedule, figure out what chemicals you actually need and which are less-than-magical potions, and fix the common problems that plague all pool owners. With so much trustworthy pool care advice in one place, you can finally cut back on time spent searching for swimming pool advice and more time splashing with your friends and family!

- Learn how pools work and get the tools you need to keep your pool running
- Test your water and maintain a safe swimming environment
- Care for your and balance your above-ground or in-ground pool
- Know what to do when unexpected problems arise

Private pool owners who need to ...

### Contributor Bio

**Kristine Blanchard** started working with swimming pools when she was just 5 years old. Her professional pool care career started when she was a teenager. Now over a decade into her career as a pool pro, she's serviced pools in the field, performing pool openings, closings, weekly maintenance, and repairs on all types of pool equipment. She's also worked in a pool supply store where she's shared her knowledge in classes for new pool owners and employees.




Wiley
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Pub Date: 8/22/23
Hardcover

192 Pages
Science / Chemistry

## Application of Sewage Sludge in Industrial Wastewater Treatment

Shah

### Summary

**Comprehensive reference examining activated sludge technologies in industrial wastewater treatment, combining a theoretical framework with practical methodologies**

*Application of Sewage Sludge in Industrial Wastewater Treatment* provides a roadmap to the methodologies for the treatment of industrial wastewaters from several major sectors integrating theory and practice, highlighting the importance of sewage sludge technologies in industrial wastewater treatment to clean up the environment from pollution caused by human activities, and assessing the applications of several existing activated sludge techniques and introduces new emerging technologies. All discussion within the text is based on a solid theoretical background.

*Application of Sewage Sludge in Industrial Wastewater Treatment* covers key topics such as:

- Issues related to activated sludge treatment, such as biodegradability-based characterization, modeling, assessment of stoichiometric, and kinetic parameters and design
- Issues related to industrial pollution control, such as in-plant control, effect of pretreatment, and more
- Recently increasing quantity and complexity of toxic effluents, which can be bio remediable for plants and ...

### Contributor Bio

Maulin P. Shah is Senior Scientist at Applied and Environmental Microbiology Lab, Bharuch, Gujarat, India. His major work involves isolation, screening, identification and Genetic Engineering of high impact of Microbes for the degradation of hazardous materials. He has more than 250 research publications in highly reputed national and international journals. He has edited 175 books with Elsevier, Wiley, Springer, CRC Press, RSC, De Gruyter, and Nova Sciences.

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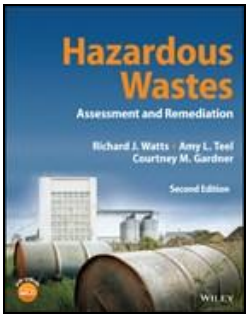



Wiley
9781119634065
Pub Date: 6/27/23
Hardcover

640 Pages
Science / Environmental Science

## Hazardous Wastes *(2nd Edition)*

**Assessment and Remediation**

Watts

### Summary

**An illuminating, problem-solving approach to source area analysis, environmental chemodynamics, risk assessment, and remediation**

In the newly revised second edition of *Hazardous Wastes: Assessment and Remediation*, a team of distinguished researchers delivers a foundational and comprehensive treatment of all aspects of hazardous waste problems. The book offers two sections—one on assessment and the following on remediation—while exploring topics crucial to the study of environmental science and engineering at the senior or master's level.

This latest edition includes a new emphasis on the chemistry of emerging contaminants, including perfluorinated compounds, 1,4-dioxane, methyl *tert*-butyl ether, and personal care products. It also offers updated data on contaminant Threshold Limit Value, Reference Dose, Slope Factor, Reference Concentration, and Inhalation Unit Risk. New remediation chapters also provide many design problems, incorporating economic analyses and the selection of various design alternatives. Approximately 200 new end-of-chapter problems—with solutions—have been added as well.

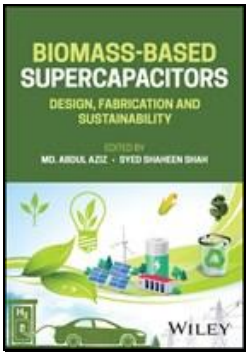
Readers will also find:

- A thorough introduction to hazardous wastes, including discussion of pre...

### Contributor Bio

**Richard Watts, PhD,** is the Boeing Professor of Civil and Environmental Engineering at Washington State University. He has published approximately 120 refereed papers related to hazardous wastes in various academic publications.

**Amy Teel, PhD,** is a Research Associate Professor of Civil and Environmental Engineering at Washington State University. She has 25 years of research experience in hazardous waste remediation.




Wiley
9781119866404
Pub Date: 9/25/23
Hardcover

528 Pages
Science / Chemistry
Series: The ECS Series of Texts and Monographs

## Biomass-Based Supercapacitors

**Design, Fabrication and Sustainability**

M Aziz

### Summary

**Authoritative resource addressing the fundamentals, design, manufacturing, and industrial applications of supercapacitors based on biomass**

*Biomass-Based Supercapacitors* presents a systematic overview and recent developments in the research, design, and fabrication of supercapacitors using biomass, discussing fundamentals, advancements, industrial applications, and the manufacturing process of biomass-derived supercapacitors. The text also considers environmental and economic aspects of the technology, along with biomass-based supercapacitors in the context of circular economy.

Written by a team of international experts in the field of supercapacitors, *Biomass-Based Supercapacitors* covers sample topics such as:

- Basic foundational knowledge surrounding supercapacitors, electrochemical techniques for supercapacitors, and different types of supercapacitors
- Biomass derived electrode materials for supercapacitors, such as activated and non-activated carbon, carbon from pretreated biomass, carbonate salts-activated carbon, and more
- Electrolytes, separators, and packaging materials for supercapacitors using biomass and binding materials from biomass for supercapacitors
- Future outlooks and challe...

### Contributor Bio

**Dr. Md. Abdul Aziz** is a Research Scientist-II at Interdisciplinary Research Center for Hydrogen and Energy Storage, King Fahd University of Petroleum & Minerals, Saudi Arabia. His main research interests are preparation, immobilization, and functionalization of nanomaterials and carbonaceous materials, and their application in supercapacitors, water splitting, chemical and biochemical sensors.

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Wiley
9781119854364
Pub Date: 10/2/23
Hardcover

320 Pages
Science / Chemistry

## Biosurfactants and Sustainability

**From Biorefineries Production to Versatile Applications**

Silvio Silverio da Silva, Antonio Ortiz Lopez, Paulo Ricardo Franco Marcelino

### Summary

**A timely and authoritative collection of resources on the sustainable production of biosurfactants**

In *Biosurfactants and Sustainability*, a team of distinguished researchers presents emerging themes in the rapidly evolving field of biosurfactants. The editors have chosen work that focuses on biosurfactants as eco-friendly and versatile compounds of interest in societies seeking sustainable forms of development. The book examines biosurfactants in the context of biorefineries and in the exploration of extremophilic microorganisms for biosurfactant production.

The included works discuss biosurfactant production from different lignocellulosic and amylaceous raw materials, as well as oilseeds and other agro-industrial byproducts. Readers will also find:

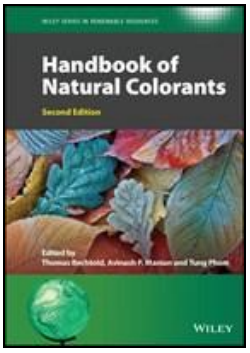
- A thorough introduction to microorganisms producing biosurfactants, as well as sustainable biosurfactant production in biorefineries
- Comprehensive explorations of the challenges of biosurfactant production in fermentation processes
- Practical discussions of bioreactors and metabolic engineering used in biosurfactant production
- Fulsome treatments of biosurfactant production using enzyme and novel biosurfactant applications in nanotechnology, hea...

### Contributor Bio

**Paulo Ricardo Franco Marcelino, PhD,** Biotechnology Department, Lorena School of Engineering, University of São Paulo, Brazil.

**Silvio Silverio da Silva, PhD,** Biotechnology Department, Lorena School of Engineering, University of São Paulo, Brazil.

**Antonio Ortiz Lopez, PhD,** Department of Biochemistry and Molecular Biology, University of Murcia, Spain.




Wiley
9781119811718
Pub Date: 4/10/23
Hardcover

688 Pages
Science / Chemistry
Series: Wiley Series in Renewable Resource

## Handbook of Natural Colorants *(2nd Edition)*

T Bechtold

### Summary

**Handbook of Natural Colorants**
**Second Edition**

**A detailed survey of a variety of natural colorants and their different applications including textiles, polymers, and cosmetics**

Colorants describe a wide range of materials such as dyes, pigments, inks, paint, or chemicals, which are used in small quantities but play an important role in many products such as textiles, polymers, food, and cosmetics. As the effects of climate change begin to be felt, there has been a shift in focus in the field to renewable resources and sustainability, and an interest in the replacement of oil-based products with greener substitutions. As the push to adopt natural resources grows, there have been significant developments in the research and application of natural colorants as a step in the transition to a bio-based economy.

The second edition of *Handbook of Natural Colorants* provides a detailed introduction to natural colorants in a marriage of theory and practice, from seed of plant to consumer demand. Presenting a wide range of viewpoints, the book briefly discusses the history of coloration technology and the current position of natural colorants before highlighting detailed information on regional plant...

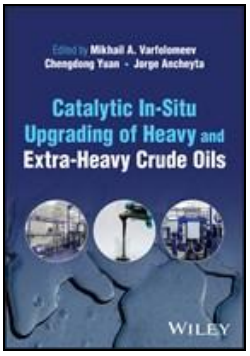
### Contributor Bio

Editors

**Thomas Bechtold, PhD,** *is a Professor at the Research Institute for Textile Chemistry and Textile Physics at the University of Innsbruck, Austria*

**Avinash P. Manian, PhD,** *is an Assistant Professor at the Research Institute for Textile Chemistry and Textile Physics, University of Innsbruck, Austria*

**Tung Pham, PhD,** *is the Head of Institute and BMK Endowed Professor at the Research Institute for Textile*




Wiley
9781119871477
Pub Date: 9/25/23
Hardcover

544 Pages
Technology & Engineering / Power Resources

## Catalytic In-Situ Upgrading of Heavy and Extra-Heavy Crude Oils

MA Varfolomeev

### Summary

**A comprehensive guide to a cutting-edge and cost-effective refinement process for heavy oil**

Oil sufficiently viscous that it cannot flow normally from production wells is called heavy oil and constitutes as much as 70% of global oil reserves. Extracting and refining this oil can pose significant challenges, including very high transportation costs. As a result, processes which produce and partially refine heavy oil in situ, known as catalytic upgrading, are an increasingly important part of the heavy oil extraction process, and the reduced carbon footprint associated with these methods promises to make them even more significant in the coming years.

*Catalytic In-Situ Upgrading of Heavy and Extra-Heavy Crude Oils* provides a comprehensive introduction to these processes. It introduces the properties and characteristics of heavy and extra-heavy oil before discussing different catalysts and catalyzing processes, their mechanisms and underlying physics, and more. It offers the full sweep of description and analysis required for petroleum and chemical engineers to understand this vital aspect of the modern oil industry.

Readers will also find:

- Detailed discussion of subjects including electr...

### Contributor Bio

**Mikhail A. Varfolomeev, PhD,** is Head of the Department of Petroleum Engineering and Head of the Enhanced Oil Laboratory of Kazan Federal University, Kazan, Russia. He has published extensively on heavy oil, in-situ upgrading, and related subjects.

**Chengdong Yuan, PhD,** is Associate Professor in the Department of Petroleum Engineering, Kazan Federal University, Kazan, Russia. He has published widely on hydrocarbon recovery, in-situ heavy oil upgrading, and related subjects.

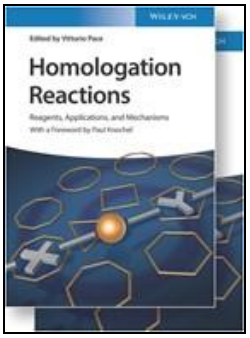

## Multi-Drug Resistance in Cancer

**Mechanism and Treatment Strategies**

Rishabha Malviya, Arun D. Singh, Deepika Yadav

Wiley-Scrivener
9781394209217
Pub Date: 7/20/23
Hardcover

220 Pages
Medical / Pharmacology




## Homologation Reactions, 2 Volumes

**Reagents, Applications, and Mechanisms**

Vittorio Pace

Wiley-VCH
9783527348152
Pub Date: 7/31/23
Hardcover

800 Pages
Science / Chemistry

### Summary

**Provides a unique summary of homologation strategies in organic synthesis**

*Homologation Reactions* presents different concepts underpinning the use of homologating reagents as well as their applications in organic synthesis. It covers in-depth discussions on the rationales governing this kind of transformations with a strong emphasis on mechanistic elements modulating critical aspects (e.g. selectivity) of the processes. In addition, this two-volume work features:

- Metal carbenoids, ylides, and diazo reagents
- Homologating agents working under nucleophilic, electrophilic, and radical regime
- Homologations realized on boron-containing or carbon-centered linchpins
- Use of highly sensitive fluorinated homologating agents
- Progressive homologations and the concept of assembly line synthesis
- Homologation processes followed by rearrangement cascades
- Construction of cyclic motifs and ring-expansion
- Homologation reactions with carbon monoxide and carbon dioxide
- New and/or challenging directions to expect in the future

Written by an international team of leaders in the field, the book is a useful guide for designing effective transformations by using homologation reactions. It is a must-read for every synthe...

### Contributor Bio

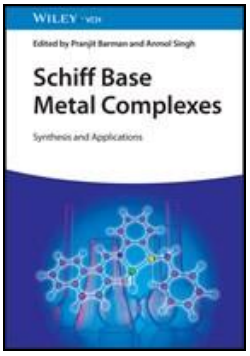
**Vittorio Pace** is Full Professor of Organic Chemistry at the University of Torino, Italy, since 2020. Before, he held a tenure-track professorship in drug synthesis at the University of Vienna, Austria. He received his habilitation (*venia docendi*) in pharmaceutical chemistry from the University of Vienna in 2016. He received several awards including the Ciamician Medal of the Italian Chemical Society, La Roche-Hoffmann Prize of the European Society of Medicinal Chemistry, and the Habilitation Award of the Austrian Chemical Society. His


Wiley
9781394200863
Pub Date: 8/1/23
Hardcover

448 Pages
Science / Chemistry

## Organic Syntheses, Volume 99

Sarpong




Wiley-VCH
9783527350704
Pub Date: 8/28/23
Hardcover

224 Pages
Science / Chemistry

## Schiff Base Metal Complexes

**Synthesis and Applications**

Pranjit Barman, Anmol Singh

### Summary

**Get introduced to the various applications of Schiff bases with this thorough guide**

Schiff bases are compounds created from a condensed amino compound, which frequently form complexes with metal ions. Their applications are diverse—biological, catalytic, in materials and more—used in many industries. Understanding these compounds, their properties, and the available methods for synthesizing them is a key to unlocking industrial innovation.

*Schiff Base Metal Complexes* provides a comprehensive overview of these compounds. It introduces the compounds and their properties before moving to the various synthesizing methods. A survey of existing and potential applications completes the picture and makes this a crucial guide for researchers and industry professionals looking to work with these versatile materials.

*Schiff Base Metal Complexes* readers will also find:

- A systematic and organized structure designed to make needed information instantly accessible
- Detailed coverage of thermal synthesis, photochemical synthesis, and more
- Challenges with different methods described in order to help readers make the correct choice for their own work

*Schiff Base Metal Complexes* is a useful reference for org...

### Contributor Bio

**Pranjit Barman, PhD** is Professor of Chemistry at the National Institute of Technology, Silchar, Assam, India. He has published widely on organometallics and related areas of research.

**Anmol Singh** is a Research Scholar at the National Insitute of Technology, Silchar, Assam, India, studying Schiff bases and organometallics.


Wiley
9781394194995
Pub Date: 8/1/23
Hardcover

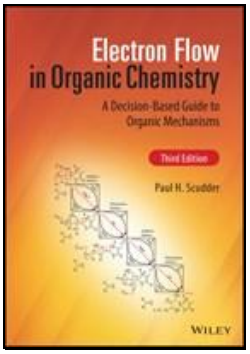
800 Pages
Science / Chemistry
Series: Organic Reactions

## Organic Reactions, Volume 114

P. Andrew Evans

### Summary

A carefully curated review of the scientific literature, Volume 114 of Organic Reactions presents critical discussions of widely used organic reactions or particular steps of a reaction. The material is treated from a preparative viewpoint, with emphasis on limitations, interfering influences, effects of structure and the selection of experimental techniques. The work includes tables that contain all possible examples of the reaction under consideration. Detailed procedures illustrate the significant modifications of each method.
Launched in 1942, the Organic Reactions series today is a leading secondary- and tertiary-level source for organic chemists across the world.




Wiley
9781119718932
Pub Date: 8/22/23
Hardcover

608 Pages
Science / Chemistry

## Electron Flow in Organic Chemistry *(3rd Edition)*

**A Decision-Based Guide to Organic Mechanisms**

Scudder

### Summary

Using a mechanistic approach, this book helps students develop a good intuition for organic chemistry and the ability to approach and solve complex problems -- methods of analysis that are valuable and portable to other fields.

- Features new chapters that expand on problem-solving methods and an addition to the appendix that will aid students transitioning from the electron-pushing approach of organic chemistry to the different approach of inorganic chemistry
- Supplies additional new exercises for students with answers to odd-numbered problems included
- Provides online material for adopting faculty: answers to the text's even-numbered problems and an exam file


Wiley
9781119982272
Pub Date: 8/29/23
Hardcover

800 Pages
Science / Chemistry
Series: Organic Reactions

## Organic Reactions, Volume 113

Evans

### Summary

A carefully curated review of the scientific literature, Volume 113 of Organic Reactions presents critical discussions of widely used organic reactions or particular steps of a reaction. The material is treated from a preparative viewpoint, with emphasis on limitations, interfering influences, effects of structure and the selection of experimental techniques. The work includes tables that contain all possible examples of the reaction under consideration. Detailed procedures illustrate the significant modifications of each method.
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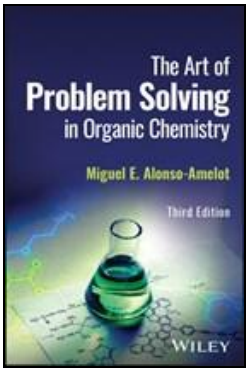



Wiley–Blackwell
9781119900665
Pub Date: 8/31/23
Paperback

528 Pages

## The Art of Problem Solving in Organic Chemistry, 3 rd Edition

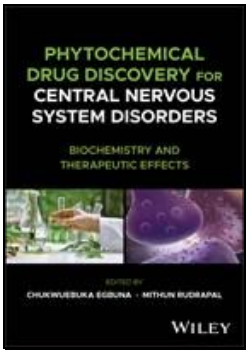
Alonso–Amelot


## Metal Whiskering

Victor G. Karpov, Vamsi Borra

Wiley-Scrivener
9781119841890
Pub Date: 8/15/23
Hardcover

250 Pages
Science / Chemistry




## Phytochemical Drug Discovery for Central Nervous System Disorders

**Biochemistry and Therapeutic Effects**

Chukwuebuka Egbuna, Mithun Rudrapal

### Summary

With a focus on herbal and natural product sources for new drugs, this book offers researchers and professionals valuable information about promising leads for effectively targeting and treating CNS disorders.

- Presents comprehensive information on the biochemistry of the CNS, the various CNS disorders, and FDA approved drugs
- Details drug discovery opportunities from medicinal plants against CNS disorders
- Presents the application of computational techniques for drug discovery against CNS disorders

Wiley
9781119794097
Pub Date: 8/22/23
Hardcover

480 Pages
Medical / Pharmacology


Wiley-VCH
9783527333264
Pub Date: 8/7/23
Hardcover

320 Pages
Science / Biotechnology

## Medical Product Regulatory Affairs *(2nd Edition)*

**Pharmaceuticals, Diagnostics, Medical Devices**

John J. Tobin, Gary Walsh

### Summary

**Hands-on guide through the jungle of medical regulatory affairs for every professional involved in bringing new products to market**

Based on a module prepared by the authors for an MSc course in Technology Management by Distance Learning offered by the University of Limerick, Ireland, *Medical Product Regulatory Affairs* is a comprehensive and practical guide on how pharmaceutical and medical devices are regulated within the major global markets. The Second Edition builds on the success of the first with an even wider scope and full coverage of new EU regulations on the safe use of medical devices.

Following a look at drug development, complete sections are devoted to national and EU regulatory issues, manufacturing license application and retention, and regulation in the USA. Other topics dealt with include CDER, CBER and marketing and manufacturing licenses, the ICH process and Good Laboratory/Clinical /Manufacturing Practices.

*Medical Product Regulatory Affairs* includes information on:

- Aims and structure of regulation, covering purpose and principles of regulation, national and EU legislative processes, and pharmacopeia
- Regulatory strategy, covering product development and manufacturing,...

### Contributor Bio

**J.J. Tobin** worked for many years and in various capacities within Olympus diagnostica GmbH, a company employing several 100 people who develop and manufacture in vitro diagnostic reagents. **Gary Walsh** is an associate professor of industrial biochemistry at the University of Limerick, Ireland. He has direct industrial experience within the pharmaceutical industry, as well as extensive teaching and non-laboratory based research interests in the pharmaceutical biotechnology arena.

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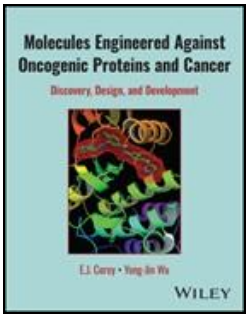



Wiley
9781394207084
Pub Date: 7/12/23
Hardcover

400 Pages
Medical / Pharmacology

## Molecules Engineered Against Oncogenic Proteins and Cancer

**Discovery, Design, and Development**

E. J. Corey, Yong-Jin Wu

### Summary

**A comprehensive review of the latest molecular advances in cancer treatment**

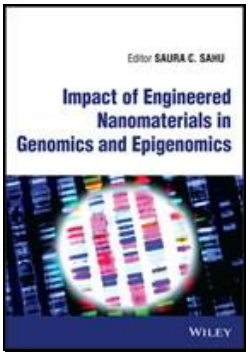
Featuring 91 total small molecule kinase/KRAS inhibitors, 80 of which are FDA-approved, *Molecules Engineered Against Oncogenic Proteins and Cancer* documents the recent scientific advances that have transformed one of medicine's most challenging areas—cancer treatment. Most of these inhibitors specifically block oncogene-induced carcinogenic proteins with results that have dramatically advanced the treatment of cancer. In addition, the structural formulas of more than 100 kinase/KRAS inhibitors in clinical trials are presented.

With a very well-known chemist as an author, *Molecules Engineered Against Oncogenic Proteins and Cancer* includes information on:

- Each molecule's structure, function of the kinase target and relevance to cancer, the drug discovery process, and molecular details of drug action
- Mutated protein kinases as oncoproteins and targets for inhibition, along with the details of discovery for each antitumor antikinase agent
- History of oncoprotein inhibitors and their role in advancing the treatment and understanding of cancer
- The discovery process as a whole, effective strategies for innovation, ongoin...

### Contributor Bio

**E. J. Corey** has been a Professor at Harvard University since 1959. He was educated at The Massachusetts Institute of Technology (1945-1950) and served as a faculty member at the University of Illinois from 1951 to 1959. He is the 1990 Nobel Laureate in Chemistry. He has received many international awards including the U.S. National Medal of Science, the Japan Prize, the Wolf Prize and the Priestley Medal of the American Chemical Society, and many honorary degrees including DSc degrees from Oxford and Cambridge. He is a member of the U.S. National Academy of Sciences and the U.S. National Academy of Medicine. Professor Corey is the author of more than 1,000 publications and is one of the most cited authors in science. Among his




Wiley
9781119896227
Pub Date: 8/14/23
Hardcover

528 Pages
Science / Chemistry

## Impact of Engineered Nanomaterials in Genomics and Epigenomics

Saura C. Sahu

### Summary

**Overview of current research and technologies in nanomaterial science as applied to omics science at the single cell level**

*Genomic and Epigenomic Effects of Environmental Engineered Nanomaterials* is a comprehensive and authoritative compilation of the genetic processes and instructions that specifically direct individual genes to turn on or off, focusing on the developing technologies of engineering nanomaterials and their role in cell engineering which have become important research tools for pharmaceutical, biological, medical, and toxicological studies.

Combining state-of-the art information on the impact of engineered nanomaterials in genomics and epigenomics, from a range of internationally recognized investigators from around the world, this edited volume offers unique insights into the current trends and future directions of research in this scientific field.

*Genomic and Epigenomic Effects of Environmental Engineered Nanomaterials* includes detailed information on sample topics such as:

- Impact of engineered nanomaterials in genomics and epigenomics, including adverse impact on glucose energy metabolism
- Toxicogenomics, toxicoepigenomics, genotoxicity and epigenotoxicity, and mechan...

### Contributor Bio

**Saura C. Sahu, PhD,** is a former Research Chemist with the Division of Toxicology at the Office of Applied Research and Safety Assessment, Center for Food Safety and Applied Nutrition at the United States Food and Drug Administration.

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Wiley-Scrivener
9781119510246
Pub Date: 9/13/23
Hardcover

600 Pages
Technology & Engineering / Power Resources
Series: Wiley-Scrivener

## Greening of Petroleum Operations *(2nd Edition)*

**The Science of Sustainable Energy Production**

M. R. Islam, A. B. Chhetri, M. M. Khan

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