

# Integrated Environmental Technology Series – Special 25% Discount



Publishing

Welcome to the Integrated Environmental Technology (IET) Series leaflet from IWA Publishing, featuring a Special Discount of 25% off the full recommended retail price.

Series Editor: Prof. Dr. Ir. Piet Lens, UNESCO-IHE, The Netherlands

The Integrated Environmental Technology Series addresses key themes and issues in the field of environmental technology from a multidisciplinary and integrated perspective.

An integrated approach is potentially the most viable solution to the major pollution issues that face the globe in the 21st century.

World experts are brought together to contribute to each volume, presenting a comprehensive blend of fundamental principles and applied technologies for each topic. Current practices and the state-of-the-art are reviewed, new developments in analytics, science and biotechnology are presented and, crucially, the theme of each volume is presented in a socio-economic context to provide solutions from a truly integrated perspective.

The Integrated Environmental Technology Series forms an invaluable and definitive resource in this rapidly evolving discipline.

UNESCO-IHE  
Institute for Water Education



## Water technologies

### Treatment of Micropollutants in Water and Wastewater

Editors: Jurate Virkutyte, Rajender S. Varma, Veeriah Jegatheesan

Over the last few years there has been a growing concern over the increasing concentration of micropollutants originating from a great variety of sources including pharmaceutical, chemical engineering and personal care product industries in rivers, lakes, soil and groundwater. As most of the micropollutants are polar and persistent compounds, they are only partially or not at all removed from wastewater and thus can enter the environment posing a great risk to the biota. It is hypothesized that wastewater is one of the most important point sources for micropollutants.

This book gives a comprehensive overview of modern analytical methods and summarizes novel single and hybrid methods to remove continuously emerging contaminants - micropollutants from the aqueous phase. New trends (e.g. sensor technology, nanotechnology and hybrid treatment technologies) are described in detail. The book is very timely because the new techniques are still in the development phase and have to be realized not only in the laboratory but also on a larger scale. The content of the book is divided into chapters that present current descriptive and analytical methods that are available to detect and measure micropollutants together with detailed information on various chemical, biological and physicochemical methods that have evolved over the last few decades.

*Treatment of Micropollutants in Water and Wastewater* also enables readers to make well informed choices through providing an understanding of why and how micropollutants must be removed from water sources, and what are the most appropriate and available techniques for providing a cost and technologically effective and sustainable solutions for reaching the goal of micropollutant-free water and wastewater.

This book is suitable for water and wastewater professionals as well for students and researchers in civil engineering, environmental engineering and process engineering fields.

August 2010 · Pages: 520 · Hardback

10 digit ISBN: 1843393166 · 13 digit ISBN: 9781843393160

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Full Price: £110.00 / US\$198.00 / €148.50



### Environmental Technologies to Treat Nitrogen Pollution

#### Principles and Engineering

Editor: Francisco J. Cervantes

*Environmental Technologies to Treat Nitrogen Pollution* provides a thorough understanding of the principles and applications of environmental technologies to treat nitrogen contamination. The book brings together an up-to-date compilation of the main physical, chemical and biological processes demanded for the removal of nitrogenous contaminants from water, wastewater, leachates and off-gasses. It provides a deep and broad knowledge of the principles and applications required for the treatment of nitrogen pollution. Each chapter is prepared by recognized specialists across the range of different aspects involved in the removal of nitrogenous contaminants from industrial discharges.

*Environmental Technologies to Treat Nitrogen Pollution* is the first book to provide a complete review of all the different processes used for the global management of nitrogen pollution. It also contains updated information about strategies to achieve nitrogen recovery and reuse in different industrial sectors.

This book will be of interest to lecturers and graduate students in the following subject areas: Environmental Engineering, Environmental Biotechnology, wastewater treatment plant design, water pollution control, contaminants recovery and reuse.

July 2009 · 432 pages · Hardback

10 digit ISBN: 1843392224 · 13 digit ISBN: 9781843392224

**Special 25% Discount Price: £74.25 / US\$133.65 / €100.24**

Full Price: £99.00 / US\$178.20 / €133.65



### Bio-electrochemical Systems

#### From Extracellular Electron Transfer to Biotechnological Application

Editors: Korneel Rabaey, Lars Angenent, Uwe Schroder and Jurg Keller

In the context of wastewater treatment, Bioelectrochemical Systems (BESs) have gained considerable interest in the past few years, and several BES processes are on the brink of application to this area. This book, written by a large number of world experts, describes the different aspects and processes relevant to their development.

Bio-electrochemical Systems (BESs) use micro-organisms to catalyze an oxidation and/or reduction reaction at an anodic and cathodic electrode respectively.

The overall framework of bio-energy and bio-fuels is discussed including the basics – microbiology, microbial ecology, electrochemistry, technology and materials development. The book highlights the plurality of processes based on BES technology already in existence, going from wastewater based reactors to sediment based bio-batteries. The integration of BESs into existing water or process lines is explored and an outlook is provided of how BES will fit within the emerging biorefinery area.

December 2009 · 524 pages · Hardback

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# Integrated Environmental Technology Series

## Water technologies continued

### Pond Treatment Technology

Editor: A Shilton

Pond treatment technology is used in tens of thousands of applications serving many millions of people across the globe - why? Simply because it is efficient and effective.

While this technology offers relative simplicity in its application, it incorporates a host of complex and diverse mechanisms that work to treat and cleanse polluted waters before their return to our environment.

Topics covered in **Pond Treatment Technology** include:

- The physical, chemical and biological characteristics of the pond environment.
- A detailed review of pond treatment mechanisms and performance.
- Comprehensive guidance on pond design, operation and upgrade options.
- A range of chapters summarising new and emerging pond technologies.
- The integration of ponds with wetlands and aquaculture systems and their use as storage reservoirs.
- Special applications of pond technology in cold climates, for agricultural wastes and for treatment of stormwater.

ISBN-10: 1843390205 · ISBN-13: 9781843390206

March 2006 · 496 pages · Hardback

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Full Price: £118.00 / US\$212.40 / €159.30



### Advanced Biological Treatment Processes for Industrial Wastewaters

#### Principles & Application

Editors: F Cervantes, S Pavlostathis, A van Haandel

**Advanced Biological Treatment Processes for Industrial Wastewaters** provides unique information relative to both the principles and applications of biological wastewater treatment systems for industrial effluents. Case studies document the application of biological wastewater treatment systems in different industrial sectors such as chemical, petrochemical, food-processing, mining, textile and fermentation.

With more than 70 tables, 100 figures, 200 equations, the book provides a broad and deep understanding of the main aspects to consider during the design and operation of industrial wastewater treatment plants.

Students, researchers and practitioners dealing with the design and application of biological systems for industrial wastewater treatment will find this book invaluable.

ISBN-10: 1843391147 · ISBN-13: 9781843391142

June 2006 · 416 pages · Hardback

**Special 25% Discount Price: £79.00 / US\$142.20 / €106.65**

Full Price: £105.25 / US\$189.45 / €142.09



### Decentralised Sanitation and Reuse

#### Concepts, Systems and Implementation

Editors: P Lens, G Zeeman, G Lettinga

ISBN-10: 1900222477 · ISBN-13: 9781900222471

March 2001 · 650 pages · Hardback

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### Water Recycling and Resource Recovery in Industry

#### Analysis, Technologies and Implementation

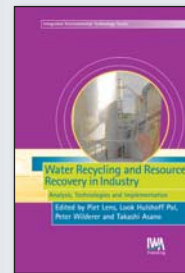
Editors: P Lens, L Hulshoff Pol, P Wilderer, T Asano

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## Applied fundamentals and Bioremediation

### Phosphorus in Environmental Technology

#### Principles and Applications

Editor: E Valsami-Jones

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### Soil and Sediment Remediation

#### Mechanisms, Technologies and Applications

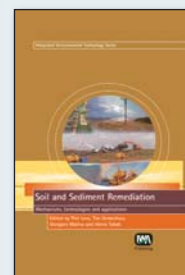
Editors: P Lens, T Grotenhuis, G Malina, H Tabak

ISBN-10: 1843391007 · ISBN-13: 9781843391005

October 2005 · 544 pages · Hardback

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### Environmental Technologies to Treat Sulfur Pollution

#### Principles and Engineering

Editors: P Lens, L Hulshof Pol

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### Biofilms in Medicine, Industry and Environmental Biotechnology

#### Characteristics, Analysis and Control

Editors: P Lens, V O'Flaherty, AP Moran, P Stoodley, T Mahony

ISBN-10: 1843390191 · ISBN-13: 9781843390190

May 2003 · 608 pages · Hardback

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## Bioenergy and gas treatment

### Resource Recovery and Reuse in Organic Solid Waste Management

Editors: P Lens, B Hamelers, H Hoitink, W Bidlingmaier

Proper treatment of organic waste may turn the burden of waste management into an asset. In particular, biological treatment may help in developing more effective resource management and sustainable development.

The following advantages may be listed:

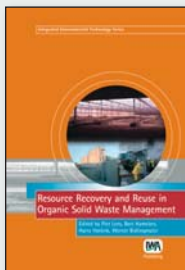
- The greenhouse effect is tackled as methane emissions from landfill are prevented.
- Soil quality can be restored or enhanced by the use of compost in agriculture.
- Compost may replace peat in horticulture and home gardening, reducing greenhouse emissions and wetland exploitation.
- Anaerobic digestion has the additional benefit of producing biogas that may be used as a fuel.
- Pesticide use can be reduced by proper use of the disease suppressive properties of compost.

**Resource Recovery and Reuse in Organic Solid Waste Management** presents options to recover energy out of organic solid waste from domestic, agricultural and industrial origin, and demonstrates existing economically feasible treatment systems that produce energy out of solid waste and recover useful by-products in the form of fertiliser or soil conditioner. The potential of environmental biotechnology is highlighted from different perspectives: societal, technological and practical.

ISBN-10: 184339054X · ISBN-13: 9781843390541  
August 2004 · 536 pages · Hardback

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### Biofuels for Fuel Cells

#### Renewable Energy from Biomass Fermentation

Editors: P Lens, P Westermann, M Haberbauer, A Moreno

The increasing demand for energy and the related environmental concerns are the main drivers for the strong interest in "Biomass Fermentation towards usage in Fuel Cells", creating a new and interdisciplinary research area. Due to their high efficiency, fuel cells are considered as a strategic technology for future energy supply systems. As biomass is a renewable source of energy, this presents a unique and advantageous combination.

This book has a clear orientation towards making products of our waste, and comes at a time when this field is rapidly developing and there is a need for a synthesising book.

**Biofuels for Fuel Cells** cross-links scientists of all fields concerned with biomass fermentation, fuel upgrading and fuel cells. The holistic and multidisciplinary description of this topic, including discussion of technological, socio-economic, system analysis and policy and regulatory aspects, make this book the definitive work for this market.

The book includes:

- Status and development of bioenergy
- Biomass fermentation: methane, hydrogen and alcohol from wastewater, waste and biomass
- Fuel cell technologies: low temperature, high temperature and microbiological fuel cells
- Upgrading of fermentation biofuels to fuel cell quality

ISBN-10: 1843390922 · ISBN-13: 9781843390923

October 2005 · 544 pages · Hardback

**Special 25% Discount Price: £97.75 / US\$175.95 / €131.96**

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### Waste Gas Treatment for Resource Recovery

Editors: P Lens, C Kennes, P Le Cloirec, M Deshusses

**Waste Gas Treatment for Resource Recovery** presents the reader with technical, ecological and economical aspects of gaseous effluent treatment and resource recovery. Practical experience from industry and agriculture is presented, the role of newly developed advanced technology in future recycling of gas streams is discussed and attention is given to criteria for sustainability in gas treatment.

This book enables production, process and environmental engineers and managers to evaluate internal-recycling possibilities, which contribute to economically- and environmentally-friendly manufacturing processes with reduced pollution loads and waste gas volumes.

Highlights include:

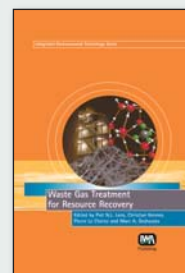
- Transboundary atmospheric pollution, meteorology and legislation for waste gas discharges and recovery
- Gas analytics and monitoring
- Novel process applications and bioreactor designs for resource recovery from waste gases
- Medical implications of pollution by gaseous compounds
- Case studies from horticulture, industry and sewage treatment

ISBN-10: 1843391279 · ISBN-13: 9781843391272

September 2006 · 480 pages · Hardback

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## Journal of Water & Climate Change

Editors: Charles Ainger, The University of Cambridge, UK, Justin Brookes, The University of Adelaide, Australia, Carol Howe, UNESCO-IHE Delft, The Netherlands, John W. Norton, Jr, MWH Americas, Inc., USA and Geoffrey Schladow, University of California, Davis, USA

The **Journal of Water and Climate Change** publishes refereed research and practitioner papers on all aspects of water science, technology, management and innovation in response to climate change. The journal's scope includes but is not limited to articles relating climate change to:

- Hydrology
- Inland and coastal waters, including both surface and ground waters
- Limnology
- Glacial science
- Aquatic ecosystems, including both native and invasive species
- Waterborne disease
- Extreme events (floods, rainstorms, droughts)
- Predictive modelling of water resources
- Paleo-studies of water quality and ecosystem state
- All aspects of water management including accounting, water supply, water and wastewater treatment, water reuse and demand management
- Energy and nutrient recovery in sewage treatment
- Greenhouse gas emissions from impoundments
- Greenhouse gas emitting technologies for water and wastewater treatment
- Carbon accounting in the water sector
- Targets and strategies for carbon emissions reduction
- Policy and practice of adaptation and mitigation of climate change in the water sector
- Organisational change to deal with climate change

ISSN: 2040-2244; vol.2, 4 issues, 2011 · Institutional rate (print & online access): £421 / US\$623 / €527

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## About the Series Editor

Prof. Dr. Ir. Piet Lens is widely known for his groundbreaking work in the field of environmental biotechnology, with a special focus on sulfur and metal removal and recovery. He has authored or co-authored over 175 scientific publications and eight books. Besides innovative research, he is also a leader in capacity-building, organising study-days, conferences, summer schools and short courses.

Prof. Lens trained in Environmental Sanitation, then obtained his Ph.D. in Environmental Engineering at the University Gent (Belgium). He was on the faculty as Associate Professor at the Wageningen University (The Netherlands) and became in 2007 Professor Environmental Biotechnology and head of the Pollution Prevention and Control core at UNESCO-INE, Delft (The Netherlands).

Prof. Lens is also founding Editor-in-Chief of the Springer journal, *Reviews in Environmental Science and Bio/Technology*. Prof. Lens's honors include the IWA Publishing Award (2002) and a prestigious Marie Curie Excellence Grant (2004).

## An invitation to authors to contribute to the IET Series:

The Integrated Environmental Technology book series is open to new titles within the scope of the series. Ideas or proposals for new book volumes are welcome and can be discussed with the series editor or publisher. Please contact Maggie Smith at [msmith@iwap.co.uk](mailto:msmith@iwap.co.uk), if you would like to contribute to the series.

## Join IWA and receive great discounts on all IWA publications... together with many other benefits!

The International Water Association (IWA) is a global network of water professionals, spanning the continuum between research and practice and covering all facets of the water cycle. Through IWA, members collaborate to lead the development of effective and sustainable approaches to water resources management, drinking-water, wastewater and stormwater management, in areas throughout the world, creating value and driving the advancement of both the science and best practice of water management.

By joining IWA, you become part of the world's leading-edge network of water professionals, a fellowship of like-minded water sector specialists operating at the heart of innovation in both research and practice. The full spectrum of professionals are represented, including engineers from all fields, scientists from many disciplines, economists, accountants, social scientists, and managers and leaders among those professions.

Benefits of membership:

- Connect to IWA's global network of professionals and to multi-level collaboration within the network, including the member community portions of IWA's website.
- Collaborate through different member-led initiatives and groups.
- Benefit from access to privileged information - IWA publishes eight of the world's leading journals on water and wastewater research and has a variety of focussed book-series.
- Exchange knowledge in biennial congresses, leading-edge conferences on water technology and sustainable urban water management and 40 + speciality conferences throughout the year.
- Save money - gain discounts on all IWA publications and conference registration fees.
- Free subscription to Water21, IWA's bi-monthly member magazine.

For more information on how to join IWA, please call: +44 20 7654 5500; email: [members@iwahq.org](mailto:members@iwahq.org) or visit: [www.iwahq.org](http://www.iwahq.org)

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