R. Aparicio, Instituto de la Grasa (CSIC), Seville, Spain; J. Harwood, Cardiff University, Wales, UK (Eds)

Handbook of Olive Oil
Analysis and Properties

The Handbook of Olive Oil presents an up-to-date view of all aspects of olive oil. It is written from an inter-disciplinary point of view and will be of use in research and development as well as in routine laboratory and process operations.

Features
- New edition reanalyzes the role of lipids and olive oil, in particular, in nutrition and health
- Discusses traceability and adulteration
- Intended as a tutorial on the practical aspects of olive oil

Contents

Fields of interest
Food Science; Nutrition; Analytical Chemistry

Target groups
Professional/practitioner

Product category
Contributed volume

Due July 2013
2nd ed. 2013. XIV, 676 p. 176 illus., 37 in color.
Hardcover
- € (D) 96,29 | € (A) 98,99 | sFr 120,00
- € 89,99 | £81.00
ISBN 978-1-4614-7776-1

P. Bajpai
Bleach Plant Effluents from the Pulp and Paper Industry

This book covers bleach plant effluents, that most polluting effluent from the pulp and paper industry. Disappearance of benthic invertebrates, a high incidence of fish diseases, and mutagenic effects on the aquatic fauna are some of the consequences of the disposal of bleach effluents into surface waters. This book describes environmental impact of bleach plant effluents, environmental regulations, and measures to reduce the pollution load by internal process modification and external treatment of bleach plant effluents.

Features
- Covers emerging technologies in waste water treatment
- Gives detailed practical information
- Cites real-world mill experiences

Contents
Background.- Pulp and Paper making process.- Pulp Bleaching and Bleaching effluents.- Environmental effects on bleach plant effluents.- Strategies used for reducing the generation of pollutants.- External treatments.- Conclusions and future perspectives.- References.

Fields of interest
Textile Engineering; Waste Management/Waste Technology; Industrial Chemistry/Chemical Engineering

Target groups
Professional/practitioner

Product category
Brief

Due June 2013
2013. VI, 124 p. 2 illus. (SpringerBriefs in Applied Sciences and Technology) Softcover
- € (D) 53,49 | € (A) 54,99 | sFr 67,00
- € 49,99 | £44.99
ISBN 978-3-319-00544-7

A. J. Ceulemans, Katholieke Universiteit Leuven, Belgium

Group Theory applied to Chemistry

Chemists are used to the operational definition of symmetry, which crystallographers introduced long before the advent of quantum mechanics. The ball-and-stick models of molecules naturally exhibit the symmetrical properties of macroscopic objects. However, the practitioner of quantum chemistry and molecular modeling is not concerned with balls and sticks, but with subatomic particles: nuclei and electrons. This textbook introduces the subtle metaphors which relate our macroscopic understanding of symmetry to the molecular world. It gradually explains how bodily rotations and reflections, which leave all inter-particle distances unaltered, affect the study of molecular phenomena that depend only on these internal distances. It helps readers to acquire the skills to make use of the mathematical tools of group theory for whatever chemical problems they are confronted with in the course of their own research.

Features
- Takes a mathematical approach to understanding group theory
- Includes exercises
- Goes back to basics
- Takes a didactic approach
- Written for advanced undergraduates and Masters students

Contents
Operations.- Function spaces and matrices.- Groups.- Representations.- What has quantum chemistry got to do with it?.- Interactions.- Spherical symmetry and spins.

Fields of interest
Theoretical and Computational Chemistry; Crystallography; Inorganic Chemistry

Target groups
Graduate

Product category
Graduate/Advanced undergraduate textbook

Due August 2013
2013. X, 146 p. 61 illus., 9 in color. (Theoretical Chemistry and Computational Modelling) Hardcover
- € (D) 74,89 | € (A) 76,99 | sFr 93,50
- € 69,99 | £62.99
ISBN 978-94-007-6862-8

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**Chemistry**

**M. A. Del Nobile, A. Conte**, University of Foggia, Italy

**Packaging for Food Preservation**

The book will be focused on the three most important aspects of food packaging: Modeling, Materials and Packaging Strategies. The modeling section will provide a complete overview of mass transport phenomena in polymers intended for food packaging applications. The materials section will cover the most interesting problem-solving solutions in the field of food packaging, i.e., low environmental impact active films with antimicrobial activity. Lastly, the packaging section will provide an overview of the most recent approaches used to prolong the shelf life of several food products.

**Features**
- Discusses new strategies to prolong food shelf life
- Reviews the development of active packaging
- Analyzes the mass transport properties of food packaging

**Contents**
Section I. Shelf life modeling of packaged food.
- Direct Models for Shelf Life Prediction.
- Influence of mass transport properties of films on the shelf-life of packaged food.
- Mechanistic models for shelf-life prediction.
Section II. Low Environmental Impact Active Packaging.
- Different approaches to manufacture active films.
- Biobased packaging materials for controlled release of active compounds.
Section III. New Strategies to Prolong Food Shelf Life.
- Packaging Protection for Liquid Foods.
- Minimally processed food: packaging for quality preservation.
- Innovations in Fresh Dairy Products Packaging.
- Packaging for Preservation of Meat- and Fish-Based Products.

**Fields of interest**
- Food Science; Biochemical Engineering

**Target groups**
- Professional/practitioner

**Product category**
- Monograph

**Due July 2013**

2013. VIII, 210 p. 42 illus., 3 in color. (Food Engineering Series) Hardcover
- **€** (D) 149,79 | **€** (A) 153,99 | **sFr** 186,50
- **€** 139,99 | **£** 126.00

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**A. Escribano Cuesta**, BASF SE., Ludwigshafen, Germany

**New Gold-Catalyzed Reactions and Applications for the Synthesis of Alkaloids**

Ana Escribano Cuesta's thesis presents a detailed study of the inter- and intramolecular reactions of carbonyl compounds with 1,6-enynes using gold (I) complexes. An important part of the work involved streamlining the variables that allow the selective synthesis of different products such as tricyclic compounds, dihydroprans, 1,3-dienes or cyclobutanes. The second chapter highlights the importance and difficulties in synthesizing a cyclobutene subunit and the author includes a detailed description of how the products were prepared. The final chapter outlines the synthesis of lundurines using methodology developed by the author’s research group for intramolecular gold-catalyzed cyclization of indoles with alkynes.

**Features**
- Nominated as an outstanding Ph.D. thesis by the Institute of Chemical Research of Catalonia, ICIQ
- A number of important publications in high profile chemistry journals have derived from this work
- The lundurine products developed in this work show significant in vitro cytotoxicity toward B16 melanoma cells

**Contents**
Introduction.
- General Objectives.
- Gold(I)-Catalyzed Reactions of 1,6-Enynes with Aldehydes:
  - Cycloaddition versus Metathesis-Type Reactions.
- Formation of Cyclobutene Compounds via Gold(I)-Catalyzed Cycloisomerization of 1,n-Enynes.

**Fields of interest**
- Organometallic Chemistry; Catalysis; Organic Chemistry

**Target groups**
- Research

**Product category**
- Monograph

**Due August 2013**

2013. 265 p. 270 illus., 41 in color. (Springer Theses) Hardcover
- **€** (D) 106,99 | **€** (A) 109,99 | **sFr** 133,50
- **€** 99,99 | **£** 90.00
ISBN 978-3-319-00701-4
Nanomedicine: Principles and Perspectives

S. P. Gupta, Meerut Institute of Engineering and Technology, India (Ed)

Hydroxamic Acids: A Unique Family of Chemicals with Multiple Biological Activities

Features
- The first comprehensive compilation of studies on the compound class hydroxamic acids
- Provides a wider scope to those working with hydroxamic acids
- Suitable for researchers in the chemical, pharmaceutical and biological sciences

Contents
- Chemistry of Hydroxamic Acids
- Theoretical Studies on Hydroxamic Acids
- Hydroxamic Acids as Carbonic Anhydrase Inhibitors
- Structure-Activity Relationships of Hydroxamic Acids
- Matrix Metalloproteinase Inhibitors
- Hydroxamic Acid Derivatives as Anticancer Agents
- Hydroxamic Acids as Histone Deacetylase Inhibitors
- Quantitative Structure-Activity Relationship Studies on Hydroxamic Acids
- Action as Histone Deacetylase Inhibitors
- Hydroxamic Acids as Carbonucleotide Reductase Inhibitors
- Hydroxamic Acids as Inhibitors of Urease in the Treatment of Helicobacter pylori Infections
- Therapeutic Potential of Hydroxamic Acids for Microbial Diseases
- Hydroxamic Acids as Chelating Mineral Collectors

Features
- The first textbook focusing on fundamentals and applications of acid-base diagrams
- In-depth yet simple presentation
- Full-color diagrams throughout
- Learning features such as boxed results and a collection of formulae

Contents
- The math behind the pH-logci diagrams
- Constructing pH-logci diagrams
- The application of pH-logci diagrams for graphical estimation of the pH of solutions and for the derivation of simplified equations
- The use of pH-logci diagrams for the construction of titration diagrams
- Titration errors

Fields of interest
- Analytical Chemistry; Biochemistry, general; Environmental Chemistry

Target groups
- Upper undergraduate

Product category
- Undergraduate textbook

Due July 2013

2013. 600 p. 65 illus., 25 in color. (Nanostructure Science and Technology) Hardcover
- * € (D) 106,95 | € (A) 109,95 | sFr 137,00
- approx. € 99,95 | £86.50
ISBN 978-3-642-37901-7

Due June 2013

2013. IX, 399 p. 366 illus., 27 in color. Hardcover
- * € (D) 139,09 | € (A) 142,99 | sFr 173,50
- € 129,99 | £117.00
ISBN 978-3-642-38110-2

Due July 2013

Original German edition Säure-Base-Diagramme published by Spektrum

2013. XII, 140 p. 104 illus., 78 in color. Hardcover
- * € (D) 48,14 | € (A) 49,49 | sFr 60,00
- € 44,99 | £40.99
ISBN 978-3-642-37901-7
Light-Sensitive Polymeric Nanoparticles Based on Photo-Cleavable Chromophores

The triggered release of functional compounds from such polymeric carriers as micelles, nanoparticles or nanogels is a rapidly developing and highly versatile concept which is expected to be one of the key approaches to future therapeutics. In his thesis, Daniel Klinger highlights the approach of stimuli-responsive microgels for such applications and discusses why especially light as a trigger has an outstanding position amongst the family of conventional stimuli. Based on these considerations, the author focuses on the design, synthesis and characterization of novel photosensitive microgels and nanoparticles as potential materials for the loading and light-triggered release/accessibility of functional compounds.

Features
- Nominated as an outstanding Ph.D. thesis by the Max-Planck Institute for Polymer Research
- Describes a versatile method for controlling the properties of light-responsive microgels and nanoparticles through molecular design of the respective building blocks
- Demonstrates the effective synergy between different disciplines and forms the basis for a number of publications in internationally renowned journals

Contents
Introduction.- Motivation.- Theoretical Part.- Outline.- Results and Discussion.- Conclusion and Outlook.- Experimental Part.

Fields of interest
Polymer Sciences; Nanotechnology; Nanoscale Science and Technology

Target groups
Research

Product category
Monograph

Due July 2013

2013. 268 p. 129 illus., 21 in color. (Springer Theses) Hardcover
- approx. € (D) 106,99 | € (A) 109,99 | sFr 133,50
- approx. € 99,99 | £90.00
ISBN 978-3-319-00445-7

Toward Dual and Targeted Cancer Therapy with Novel Phthalocyanine-based Photosensitizers

Janet Lau’s thesis describes her studies into the use of phthalocyanine-based photosensitizers in combined chemo- and photodynamic therapy (PDT) and targeted PDT.

Features
- Nominated as an outstanding Ph.D. thesis by the The Chinese University of Hong Kong, People’s Republic of China
- Explores different approaches to develop phthalocyanine-based photosensitizers toward dual and targeted photodynamic therapy (PDT), with a view to improving their specific delivery to cancerous tissues and efficiency in PDT
- Provides the grounding and stimulates further exploration in the development of smart and efficient photosensitizers for dual and targeted PDT

Contents

Fields of interest
Physical Chemistry; Medicinal Chemistry; Cancer Research

Target groups
Research

Product category
Monograph

Sustainability of Biofuel Production from Oil Palm Biomass

Features
- Elaborates the thermodynamic feasibility which describes the quality and quantity of energy and materials used in the production of biofuels
- Describes the sustainability assessment of all the production processes involved in biofuel production from oil palm biomass beginning from feedstock cultivation to waste management
- Addresses sustainable utilization of oil palm wastes as a means of adding economic, environmental and social values to the oil palm biomass

Contents

Fields of interest
Biochemical Engineering; Waste Management/Waste Technology; Energy Policy, Economics and Management

Target groups
Research

Product category
Monograph

Due July 2013

2013. 235 p. 137 illus., 39 in color. (Springer Theses) Hardcover
- € (D) 106,99 | € (A) 109,99 | sFr 133,50
- € 99,99 | £90.00
ISBN 978-3-319-00707-6

2014. XXII, 444 p. 68 illus., 5 in color. (Green Energy and Technology) Hardcover
- € (D) 139,09 | € (A) 142,99 | sFr 173,50
- € 129,99 | £117.00
S. Mangani, University of Siena, Italy (Ed)

Disruption of Protein-Protein Interfaces

In Search of New Inhibitors

“Disruption of Protein-Protein Interfaces” reviews the latest developments and future perspectives in drug discovery at protein–protein interfaces. The authors detail experimental and computational tools to tackle the subject and highlight the contribution of the Italian research community to the field. Evidence shows that blocking or modulating protein–protein interactions might lead to the development of useful new drugs. Consequently, in recent years great effort has been dedicated to unveiling the molecular details of protein–protein interfaces by structural techniques e.g. X-ray diffraction, NMR spectroscopy.

Features
► Provides an overview of the present state and future perspectives of drug discovery at protein–protein interfaces
► Gives details of both computational and experimental tools used in the field
► Gives positive examples of drug-like molecules effective in interacting at protein–protein interfaces

Contents
Drug discovery by targeting protein-protein interactions.- Protein-Protein Interaction Inhibitors: case studies on small molecules and natural compounds.- Disrupting Protein-Protein Interfaces using GRID Molecular Interaction Fields.- NMR as a tool to target protein–protein interactions.- Protein–protein interactions in the solid state
The troubles of crystallizing of protein–protein complexes.- Fluorescence observables and enzyme kinetics in the investigation of PPI modulation by small molecules Detection, mechanistic insight, functional consequences.

Field of interest
Organic Chemistry

Target groups
Research

Product category
Monograph

P. L. Marek, Technical University of Darmstadt, Germany

Biomimetic Dye Aggregate Solar Cells

This thesis describes a new approach to the construction of solar cells. Following nature’s example, this approach has the goal to find a biomimetic self-assembling dye, whose aggregates can mimic the natural light-harvesting system of special photosynthetic active bacteria. The thesis investigates methods to control the self-assembly such that suitable dye aggregates are formed with high internal order and size-confinement. The dye aggregates can be implemented into a new type of solar cells, designed to combine the advantages of hybrid solar cells and solid-state dye-sensitized solar cells (ss-DSCs): dye aggregate solar cells (DASCs). This book describes the construction and first tests of a prototype for DASCs on the basis of the investigated dye aggregates.

Features
► Nominated by the Technical University of Darmstadt (Germany) as an outstanding PhD thesis
► Exploits new ways to self-assembling dye aggregates for solar cells
► Develops a new solar cell prototype on the basis of the dye aggregates: dye aggregate solar cells (DASCs)

Contents

Fields of interest
Nanochemistry; Energy Harvesting; Optical and Electronic Materials

Target groups
Research

Product category
Monograph

S. Martini, Utah State University, Logan, UT, USA

Sonocrystallization of Fats

Sonocrystallization of Fats will summarize the latest research efforts and discoveries in the relatively new area of sonocrystallization of edible lipids. Ultrasound has been used extensively in the past to induce the crystallization of molecules. Until recently, however, very little work has been done using power ultrasound to induce the crystallization of edible lipids and understand how the phenomena applies in these systems. Power ultrasound is used in fats to induce their crystallization and to generate small crystals, which ultimately result in a harder material. Since the elimination of trans-fats from food products, novel processing technologies have been sought to improve the functional properties of low saturated, no-trans lipids. Power ultrasound can be used as a new processing condition to modify the crystallization of fats and tailor their functional properties to specific food uses. This Springer Brief will describe recent research performed in the area of sonocrystallization of fats and the possible application in the food industry. An overview of ultrasound theories will be presented at the beginning of the book followed by a brief description of the uses of power ultrasound in the food industry. Description of recent research in the area of fat sonocrystallization and detailed information regarding the experimental conditions used, such as type of equipment and ultrasound settings, will be presented.

Contents

Fields of interest
Food Science; Lipidology; Biochemical Engineering

Target groups
Research

Product category
Brief
Nanostructured Palladium Electrochemistry Fundamentals and Applications

This book describes in detail the electrochemical deposition and electrochemical features of nanostructured palladium, outlining the advantageous use of the nanotechnology with which the preparation of these films occurs. The text specifically addresses the use of nanotechnology to intensively investigate the hydrogen electrode reaction and the permeation process of hydrogen into bulk material. Using this approach, the studies presented will provide a standard and profound knowledge about the palladium hydrogen (deuterium) electrochemistry as a fundamental basis for common science, and will increase the reader’s understanding of Low Energy Nuclear Reactions.

Features
- Discusses the considerably controversial science of Low Energy Nuclear Reaction in great detail
- Outlines the advantageous use of the nanotechnology with which preparation of nanostructured palladium occurs
- Provides readers with through explanation of what occurs inside the Palladium bulk metal lattice and how it works as a catalyst

Contents

Fields of interest
Electrochemistry; Catalysis; Surfaces and Interfaces, Thin Films

Target groups
Research

Product category
Monograph

Due July 2013
2012. Approx. 300 p. 50 illus. (Nanostructure Science and Technology) Hardcover
- approx. * € (D) 139,05 | € (A) 142,95 | sFr 186,50
- approx. € 129,95 | £117.00

Development of Novel Anti-HIV Pyrimidobenzothiazine Derivatives

The author successfully developed novel anti-HIV PD 404182 derivatives that exhibited submicromolar inhibitory activity against both HIV-1 and HIV-2. His thesis is in three parts. The first part expounds efficient methods for the synthesis of tricyclic heterocycles related to PD 404182 based on the sp2-carbon–heteroatom bond formations. Starting from arene or haloarene, C-O, C-N, or C-S bonds were formed by simply changing the reactants. These synthetic methods provide powerful approaches for the divergent preparation of pyrimido-benzoxazine, -quinazoline, or -benzothiazine derivatives. The second part explains SAR studies of PD 404182 for the development of anti-HIV agents.

Features
- Nominated by Kyoto University as an outstanding Ph.D. thesis
- Divergent synthetic methods that enable efficient structure–activity relationship studies
- Development of more potent derivatives based on extensive structure–activity relationship studies

Contents

Fields of interest
Organic Chemistry; Pharmaceutical Sciences/ Technology; Medicinal Chemistry

Target groups
Research

Product category
Ph.D. Thesis

Due August 2013
2013. 100 p. 51 illus., 3 in color. (Springer Theses) Hardcover
- approx. * € (D) 106,99 | € (A) 109,99 | sFr 133,50
- approx. € 99,99 | £90.00
ISBN 978-4-431-54444-9

Direct Observation of Crystalline State Reactions Structures of Metastable Intermediates

This book focuses on chemical reactions in the crystalline state. Because the reactions cover a variety of fields in inorganic and organic chemistry, with more than 300 references, the book is an indispensable resource for inorganic, organic, and physical chemists and graduate students. The crystalline state reaction is a new category of solid state reaction, in which a reaction occurs with retention of the single crystal form. The whole reaction process can be observed directly by X-ray and neutron diffractions. Not only the structures of metastable intermediates, such as radicals, carbenes, and nitrenes, but also the metastable species of photochromic compounds and unstable photo-excited structures are shown with colored figures of the molecular structures.

Features
- Direct observation of various pathways of a molecule in the different environment
- More than 200 figures and tables clearly showing the structures of the intermediates
- More than 300 references in the field of the crystalline state reactions

Contents

Fields of interest
Physical Chemistry; Crystallography; Organic Chemistry

Target groups
Research

Product category
Monograph

Due September 2013
2014. 200 p. 180 illus., 60 in color. Hardcover
- approx. * € (D) 106,95 | € (A) 109,95 | sFr 133,50
- approx. € 99,95 | £90.00
Structure and Bonding


Volume 151

S. Zhang, Chinese Academy of Sciences, Beijing, China (Ed)

Structures and Interactions of Ionic Liquids

Contents

Structures, Bonding and Hydrogen Bonds, by Kun Dong, Qian Wang, Xingmei Lu, Suojiang Zhang
Aggregation in System of Ionic Liquids, by Jianji Wang, Huiyong Wang
Dissolution of Biomass Using Ionic Liquids, by Hui Wang, Gabriela Gura, Robin D.

Features

► This series presents critical reviews of the present position and future trends in modern chemical research concerned with chemical structure and bonding ► Short and concise reports, each written by the world’s renowned experts ► Still valid and useful after 5 or 10 years ► More information as well as the electronic version of the whole content available at: springerlink.com

Topics in Heterocyclic Chemistry


Volume 33

R. Paolesse, University of Rome Tor Vergata, Italy (Ed)

Synthesis and Modifications of Porphyrinoids

The McMurry Reaction in Porphyrinoid Chemistry, by Kevin M. Smith
Meso-tetraarylporphyrins: synthetic strategies and reactivity profiles based on nitro/amino substituents, by Maria da Graça Neves
Functionalization of corroles, by José Cavaleiro
Degradation pathways for porphyrinoids, by Jacek Wojaczynski
Synthetic routes to porphyrinoids, by Sara Nardis
Recent developments of non covalent porphyrin assemblies, by Donato Monti

Features

► Heterocyclic chemistry is the biggest branch of chemistry covering two-thirds of the chemical literature ► The series covers hot topics of frontier research summarized by reputed scientists in the field ► Our review series is topic related Online version available on SpringerLink.com

Contents

The McMurry Reaction in Porphyrinoid Chemistry, by Kevin M. Smith
Meso-tetraarylporphyrins: synthetic strategies and reactivity profiles based on nitro/amino substituents, by Maria da Graça Neves
Functionalization of corroles, by José Cavaleiro
Degradation pathways for porphyrinoids, by Jacek Wojaczynski
Synthetic routes to porphyrinoids, by Sara Nardis
Recent developments of non covalent porphyrin assemblies.

Field of interest

Inorganic Chemistry

Target groups

Research

Product category

Reviews
**Polymer Blends Handbook**

**Contents**

**Fields of interest**
Polymer Sciences; Soft and Granular Matter, Complex Fluids and Microfluidics; Characterization and Evaluation of Materials 

**Target groups**
Research 

**Product category**
Handbook 

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**László Zechmeister**

His Life and Pioneering Work in Chromatography

László Zechmeister was one of the pioneers in chromatography. He recognized the potential of the chromatographic method and made extensive use of it for his research about natural products. In 1938 he founded the book series “Progress in the Chemistry of Organic Natural Products” which includes review articles on contemporary research by masters in their fields of expertise. This text casts light on his life and his pioneering role in chromatography and provides more detailed insight on the book series.

**Fields of interest**
Chromatography; Organic Chemistry; History of Science 

**Target groups**
Research 

**Product category**
Brief 

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**Advances in Food Process Engineering Research and Applications**

**Contents**

**Fields of interest**
Food Science; Biochemical Engineering; Biochemistry, general 

**Target groups**
Professional/practitioner 

**Product category**
Contributed volume