

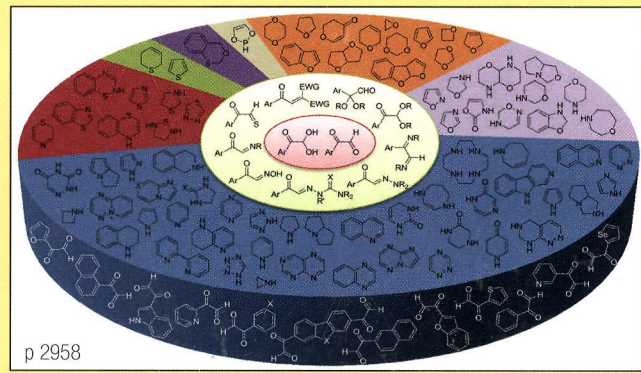
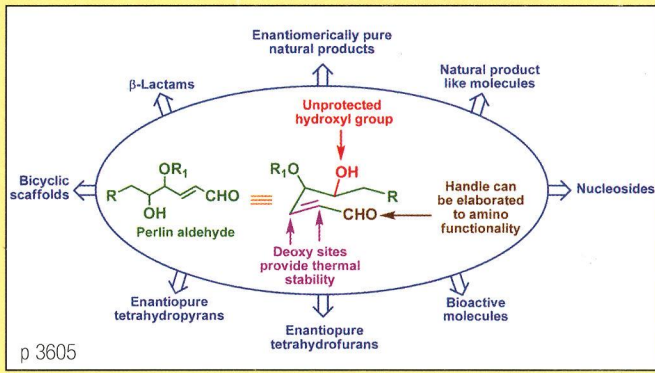
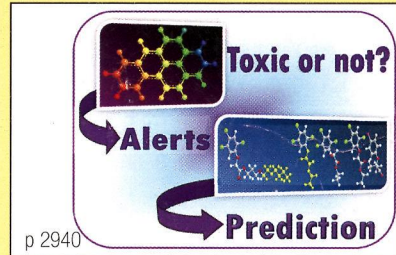
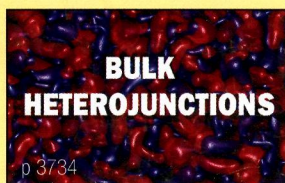
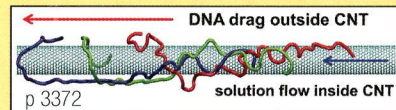
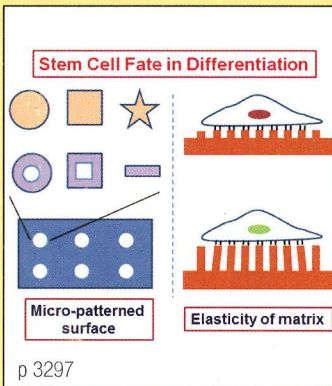
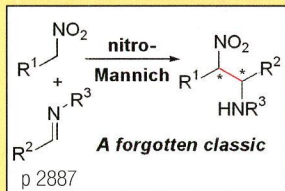
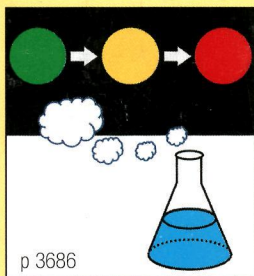
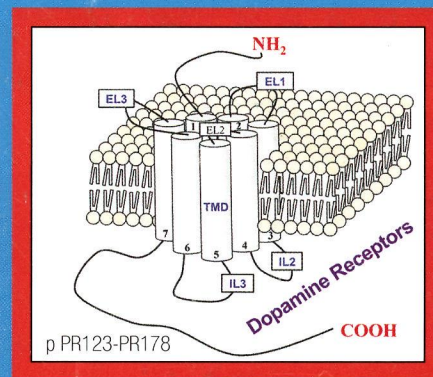
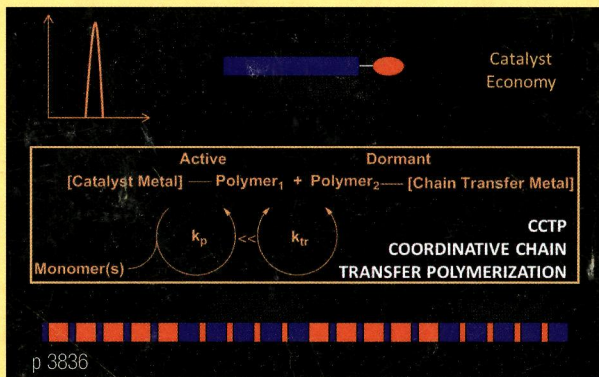
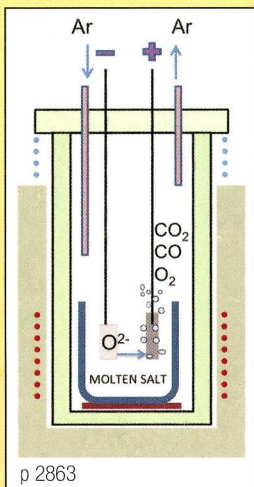
711
C51/2M

CHEMICAL REVIEWS

MAY 2013

VOLUME 113 NUMBER 5

pubs.acs.org/CR



CHEMICAL REVIEWS

May 8, 2013

Volume 113, Issue 5

Pages 2863-3858

Order Print Issue

Perennial Reviews

Update 1 of: Recent Progress in Development of Dopamine Receptor Subtype-Selective Agents: Potential Therapeutics for Neurological and Psychiatric Disorders

NaYe, John L. Neumeier, Ross J. Baldessarini, XuechuZhen, and Ao Zhang

pp PR123–PR178

Publication Date (Web): March 7, 2013 (Review)

DOI: 10.1021/cr300113a

Reviews

DC Voltammetry of Electro-deoxidation of Solid Oxides

A.M. Abdelkader, K. Tripuraneni Kilby, A. Cox, and D. J. Fray

pp 2863–2886

Publication Date (Web): January 22, 2013 (Review)

DOI: 10.1021/cr200305x

 Section:

Electrochemistry

Nitro-Mannich Reaction

Adam Noble and James C. Anderson

pp 2887–2939

Publication Date (Web): March 5, 2013 (Review)

DOI: 10.1021/cr300272t

 Section:

Amino Acids, Peptides, and Proteins

Nongenotoxic Carcinogenicity of Chemicals: Mechanisms of Action and Early Recognition through a New Set of Structural Alerts

Romualdo Benigni, Cecilia Bossa, and Olga Tcheremenskaia

pp 2940–2957

Publication Date (Web): March 8, 2013 (Review)

DOI: 10.1021/cr300206t

 Section:

Toxicology

Arylglyoxals in Synthesis of Heterocyclic Compounds

Bagher Eftekhari-Sis, Maryam Zirak, and Ali Akbari

pp 2958–3043

Publication Date (Web): January 25, 2013 (Review)

DOI: 10.1021/cr300176g

 Section:

Heterocyclic Compounds (More than One Hetero Atom)

Molecular Engineering of Guanine-Rich Sequences: Z-DNA, DNA Triplexes, and G-Quadruplexes

Osman Doluca, Jamie M. Withers, and Vyacheslav V. Filichev

pp 3044–3083

Publication Date (Web): February 7, 2013 (Review)

DOI: 10.1021/cr300225q

 Section:

General Biochemistry

Transition Metal-Mediated Synthesis of Monocyclic Aromatic Heterocycles

Anton V. Gulevich, Alexander S. Dudnik, Natalia Chernyak, and Vladimir Gevorgyan

pp 3084–3213

Publication Date (Web): January 10, 2013 (Review)

DOI: 10.1021/cr300333u

 Section:

Organometallic and Organometalloidal Compounds

Exploring Living Multicellular Organisms, Organs, and Tissues Using Microfluidic Systems

Venkatragavalu Sivagnanam and Martin A. M. Gijs

pp 3214–3247

Publication Date (Web): February 20, 2013 (Review)

DOI: 10.1021/cr200432q

 Section:

Biochemical Methods

Chiral Iron Catalysts for Asymmetric Synthesis

Kovuru Gopalaiah

pp 3248–3296

Publication Date (Web): March 5, 2013 (Review)

DOI: 10.1021/cr300236r

 Section:

Organometallic and Organometalloidal Compounds

Physical Cues of Biomaterials Guide Stem Cell Differentiation Fate

Akon Higuchi, Qing-Dong Ling, Yung Chang, Shih-Tien Hsu, and Akihiro Umezawa

pp 3297–3328

Publication Date (Web): February 7, 2013 (Review)

DOI: 10.1021/cr300426x

 Section:

Pharmaceuticals

Journey Describing Applications of Oxone in Synthetic Chemistry

Hidayat Hussain, Ivan R. Green, and Ishtiaq Ahmed

pp 3329–3371

Publication Date (Web): March 1, 2013 (Review)

DOI: 10.1021/cr3004373

 Section:

General Organic Chemistry

Material Drag Phenomena in Nanotubes

Petr Král and Boyang Wang

pp 3372–3390

Publication Date (Web): February 14, 2013 (Review)

DOI: 10.1021/cr200244h

 Section:

General Physical Chemistry

Big Signals from Small Particles: Regulation of Cell Signaling Pathways by Nanoparticles

Jens Rauch, Walter Kolch, Sophie Laurent, and Morteza Mahmoudi

pp 3391–3406

Publication Date (Web): February 21, 2013 (Review)

DOI: 10.1021/cr3002627

 Section:

General Biochemistry

Graphene: Promises, Facts, Opportunities, and Challenges in Nanomedicine

Hong Ying Mao, Sophie Laurent, Wei Chen, Omid Akhavan, Mohammad Imani, Ali Akbar Ashkarran, and Morteza Mahmoudi

pp 3407–3424

Publication Date (Web): March 1, 2013 (Review)

DOI: 10.1021/cr300335p

 Section:

Pharmaceuticals

β -Rhombohedral Boron: At the Crossroads of the Chemistry of Boron and the Physics of Frustration

Tadashi Ogitsu, Eric Schwegler, and Giulia Galli

pp 3425–3449

Publication Date (Web): March 8, 2013 (Review)

DOI: 10.1021/cr300356t

 Section:

General Physical Chemistry

Metalloantimalarials

Paloma F. Salas, Christoph Herrmann, and Chris Orvig

pp 3450–3492

Publication Date (Web): February 21, 2013 (Review)

DOI: 10.1021/cr3001252

 Section:

Pharmacology

Conjugated Nitrodienes. Synthesis and Reactivity

Roberto Ballini, Noelia Araújo, María V. Gil, Emilio Román, and José A. Serrano

pp 3493–3515

Publication Date (Web): January 11, 2013 (Review)

DOI: 10.1021/cr2002195

 Section:

General Organic Chemistry

The Lipophilic Bullet Hits the Targets: Medicinal Chemistry of Adamantane Derivatives

Lukas Wanka, Khalid Iqbal, and Peter R. Schreiner

pp 3516–3604

Publication Date (Web): February 25, 2013 (Review)

DOI: 10.1021/cr100264t

 Section:

Pharmacology

Glycal-Derived δ -Hydroxy α,β -Unsaturated Aldehydes (Perlin Aldehydes): Versatile Building Blocks in Organic Synthesis

L. Vijaya Raghava Reddy, Vikas Kumar, Ram Sagar, and Arun K. Shaw

pp 3605–3631

Publication Date (Web): February 18, 2013 (Review)

DOI: 10.1021/cr200016m

 Section:

Carbohydrates

Halogenated Organic Molecules of Rhodospirillum rubrum Origin: Chemistry and Biology

Bin-Gui Wang, James B. Gloer, Nai-Yun Ji, and Jian-Chun Zhao

pp 3632–3685

Publication Date (Web): March 1, 2013 (Review)

DOI: 10.1021/cr9002215

 Section:

Microbial, Algal, and Fungal Biochemistry

Vapochromism in Organometallic and Coordination Complexes: Chemical Sensors for Volatile Organic Compounds

Oliver S. Wenger

pp 3686–3733

Publication Date (Web): January 14, 2013 (Review)

DOI: 10.1021/cr300396p

 Section:

Organic Analytical Chemistry

Controlling the Morphology and Performance of Bulk Heterojunctions in Solar Cells. Lessons Learned from the Benchmark Poly(3-hexylthiophene):[6,6]-Phenyl-C₆₁-butyric Acid Methyl Ester System

Minh Trung Dang, Lionel Hirsch, Guillaume Wantz, and James D. Wuest

pp 3734–3765

Publication Date (Web): January 24, 2013 (Review)

DOI: 10.1021/cr300005u

 Section:

Electrochemical, Radiational, and Thermal Energy Technology

Graphene-Like Two-Dimensional Materials

Mingsheng Xu, Tao Liang, Minmin Shi, and Hongzheng Chen

pp 3766–3798

Publication Date (Web): January 3, 2013 (Review)

DOI: 10.1021/cr300263a

 Section:

Transgenic Biosynthesis of Polyunsaturated Fatty Acids: A Sustainable Biochemical Engineering Approach for Making Essential Fatty Acids in Plants and Animals

Jingjing Jiao and Yu Zhang

pp 3799–3814

Publication Date (Web): February 19, 2013 (Review)

DOI: 10.1021/cr300007p

 Section:

Plant Biochemistry

Health and Ecosystem Risks of Graphene

Xiangang Hu and Qixing Zhou

pp 3815–3835

Publication Date (Web): January 17, 2013 (Review)

DOI: 10.1021/cr300045n

 Section:

Toxicology

Coordinative Chain Transfer Polymerization

Andreia Valente, André Mortreux, Marc Visseaux, and Philippe Zinck

pp 3836–3857

Publication Date (Web): February 7, 2013 (Review)

DOI: 10.1021/cr300289z

 Section:

Chemistry of Synthetic High Polymers