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Steeped The Chemistry of Tea

Michelle Francl Bryn Mawr College & Vatican Observatory, USA

Synopsis

Tea is the world's most popular beverage. Brewed from the leaves of the *Camellia sinensis* plant, tea is drunk in countries all over the world, and the chemistry of both the plant and its preparation is fascinating. Beginning with a leaf to cup introduction, this book looks at the molecular makeup of different types of tea, discusses brewing and steeping and the age-old question of when, or even whether, to add milk.

Brief Contents

- A Cup of Chemistry
- Reading the Tea Leaves
- The Drug in the Cup
- The Taste of Zen
- The Agony of the Leaves
- Sugar and Spice
- Earth, Water, Fire and Air

To order

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Bioprospecting of Natural Sources for Cosmeceuticals

Deepika Kathuria Chandigarh University, India Ajay Sharma Chandigarh University, India Meenakshi Verma Chandigarh University, India Gulzar Ahmad Nayik Government Degree College Shopian, India

Synopsis

This book delves into the world of natural sources such as medicinal plants, microbes, fungi, lichens, and algae that have been used for centuries in traditional medicine. These sources are rich in bioactive secondary metabolites that have a wide range of applications in various industries, including cosmetics and personal care products. The book provides a comprehensive guide to the isolation, characterization, and authentication of these metabolites for use in cosmeceuticals. It covers topics such as geographical distribution, extraction of key components, pharmacology, toxicology, and future prospects. This book is a valuable resource for researchers and graduate students in chemistry, botany, biotechnology, microbiology, cosmetology, and the pharmaceutical sciences.

Brief Contents

- Natural Products for Cosmeceuticals
- Natural Products as Cosmeceuticals in Different Countries: A Regulatory Perspective
- Methods of Isolation, Characterisation and Authentication of Essential Oils for Cosmetics
- Toxicity and Allergic Responses of Secondary Metabolites used in Cosmetic Formulation
- The Wonders of Plant Secondary Metabolites as Cosmeceuticals
- Applications of Mushrooms in Cosmeceuticals
- Algal and Microalgal Compounds in Cosmeceuticals
- Cosmetic Applications of Lichens
- Bacteria as a Source of Bioactive Cosmeceuticals
- Marine Natural Products as a Bioresource for Cosmeceuticals
- Cosmeceutical Applications of Clay Minerals
- Nanotechnology for Cosmetics
- USA and Canada





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Neurotransmitters and Toxicology

Kevin Woodward KNW Animal Health Consulting, UK Tim Marrs Edentox Associates. UK

Synopsis

Neurotransmitters are usually considered to be endogenous substances that are released from neurons, act on receptor sites that are typically present on membranes of postsynaptic cells and produce a functional change in the properties of the target cell. They are essential features of the nervous systems of all animals and numerous chemicals can act as neurotransmitters either intentionally (e.g. pesticides) or unintentionally (neurotoxins). The most common forms of neurotoxicity are the death of neurons, degeneration of axons, damage to glial cells and interference with the axonal membrane or neurotransmission. Important neurotoxins are found among pesticides, metals, solvents, natural substances, and industrial chemicals. Environmental chemicals may also contribute to the pathology of neurodevelopmental, neuropsychiatric, and neurodegenerative disorders. Neurotransmitters and Toxicology will be particularly appealing to toxicologists with an interest in neurotoxicology in a variety of sub-disciplines, as well as neurochemists interested in pathology and disease mechanisms associated with neurotoxicants.

Brief Contents

- Introduction
- Cholinergic Neurotransmission
- Cholinergic Neurotransmission and Toxicity Neonicotinoids and Spinosad
- Glutamatergic Neurotransmission and Toxicity: Domoic Acid and Kainic Acid (Glutamic Acid Analogs)
- GABAergic Neurotransmission and Toxicity 1: Organochlorines
- GABAergic Neurotransmission and Toxicity 2: Macrocyclic Lactones
- GABAergic Neurotransmission and Toxicity 3: Isoxazolines
- Monoamine Neurotransmission and Toxicity

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• Cannabinoid Neurotransmission: Neurotoxicity or Neuroprotection

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Field-effect Transistor Biosensors for Rapid Pathogen Detection

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Mohd Firdaus Raih Universiti Kebangsaan, Malaysia

Synopsis

The efficient and rapid detection of the causative agents for highly contagious infectious diseases is a crucial initial step in preventing their spread. The lack of portable and sensitive commercially available detection devices that can be deployed for this task has contributed to uncontrolled escalation that can rapidly evolve into a pandemic such as the global spread of the SARS-CoV-19 virus. This title reviews the current state of the art technology and explores the potential of field-effect transistors (FETs) as a sensing platform in the point-of-care diagnostic devices for pathogen detection by providing a mechanistic overview of how such sensors function. The editors and several leading researchers in this field present the fundamental mechanics of detecting biomolecules via FETs and explore the deployment and usability of the various methods and devices currently available or under development. Useful to pharma industry professionals and sensor developers, the book is an indispensable resource for those working in analytical research, biotechnology industry professionals, and public health agency professionals.

Brief Contents

- The Physics and Operating Principles of Field-effect Transistor-based Biosensors
- Electrolyte-gated FET Biosensors
- Challenges in the Detection of Emerging Novel Pathogens and Evolving Known Pathogens
- Rapid Detection of Microorganisms Based on FET Devices
- Field-effect Transistor Biosensors Based on Nanomaterials for Zoonotic Pathogen Detection
- Field-effect Transistor Biosensors for Rapid SARS-COV-2 Detection
- The Future of Commercializing FET-based Biosensors

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Catalysis Volume 35

James Spivey Louisiana State University, USA Yi-Fan Han East China University of Science and Technology, China Dushyant Shekhawat National Energy Technology Laboratory, USA

Synopsis

Looking at modern approaches to catalysis, this volume reviews the extensive literature published in this area. Chapter highlights include Fenton chemistry, advanced manufacturing in heterogeneous catalysis, membrane reactors for light alkane dehydrogenation and new insights and enhancement of biocatalysts for biomass conversion in the bioproducts industry. Appealing to researchers in academia and industry, the detailed chapters bridge the gap from academic studies in the laboratory to practical applications in industry, not only for the catalysis field, but also for environmental protection. The book will be of great benefit to any researcher wanting a succinct reference on developments in this area now and looking to the future.

Brief Contents

- Advanced manufacturing in heterogeneous catalysis
- Recent advances in nanostructured solid catalysts with controlled
- hydrophilic/hydrophobic balance
- Connection of thermodynamics and kinetics in oxidation catalysis on transition metals and oxides
- Chemical transformations using GaN-based catalysts
- Non-oxidative propane dehydrogenation in membrane reactors
- Catalytic routes for upgrading pyrolysis oil derived from biomass
- New insights and enhancement of biocatalysts for biomass conversion in the bioproducts industry and environmental welfare
- Materials, electrodes, and system design for heterogeneous electro-Fenton remediation

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