



From the SPE Book Bag

NOVEMBER 2007

Semiconducting Polymers: Chemistry, Physics and Engineering, 2nd Edition, Two-Volume Set

Edited by Georges Hadziioannou & George G. Malliaras

768 pages, published 2007

This two-volume handbook describes the various approaches to doped and undoped semiconducting polymers taken with the aim to provide vital understanding of how to control the properties of these fascinating organic materials. Prominent researchers from the fields of synthetic chemistry, physical chemistry, engineering, computational chemistry, theoretical physics, and applied physics cover all aspects from compounds to devices.

<http://www.4spe.org/training/products/0706.php>

Self-Doped Conducting Polymers

Michael S. Freund, Bhavana A. Deore

338 pages, published 2007

The purpose of this book is to cover the rapidly developing area of self-doped conducting polymers, with the goal of describing the wide range of approaches that have been developed to synthesize, characterize and utilize them. As an up-to-date, detailed overview of developments in the field, this book will be invaluable to researchers in academic, government and laboratories worldwide.

<http://www.4spe.org/training/products/0710.php>

OCTOBER 2007

Polymers & Light: Fundamentals and Technical Applications

author: Wolfram Schnabel

396 pages, published 2007

Polymers and Light deals with the various topics that are related to the effect of light on polymers - whether it concerns the changes of physical or chemical properties occurring with the polymer being under the action of light or the variation light might undergo when it passes through a polymer sheet. Due to its multidisciplinary character, the book addresses, on an advanced level, researchers, engineers and students of various fields.

<http://www.4spe.org/training/products/0712.php>

Polymer Fiber Optics: Materials, Physics, and Applications

by Mark G. Kuzyk

399 pages, published 2006

This straightforward text examines the scientific principles, characterization techniques, and fabrication methods used to design and produce high quality optical fibers. It focuses on the fundamental concepts that will continue to be useful in future applications, including photomechanical actuation, electro-optic fibers, and smart materials. It also covers the history and physics of polymer fibers; scientific basis and practical considerations for characterization techniques; and processing protocols and fabrication techniques. The author provides ample figures, diagrams, and photographs to illustrate fiber structures, experimental setup, fabrication apparatus, and theoretical calculations.

<http://www.4spe.org/training/products/0723.php>

SEPTEMBER 2007

Polymer Testing

Editors: Wolfgang Grellmann, Sabine Seidler

680 pages, published 2007

In order to determine the true performance envelope of a plastic material, a comprehensive understanding of plastics behavior, such as its mechanical, thermal, electrical, rheological, physical and chemical properties, as well as environmental resistance, is necessary. This book provides a material science focused insight into modern polymer testing through discussion of test methods for various properties of plastics, related to different material types and forms, with reference to national, international and application/industry specific test methods in a practical, easy-to-understand manner.

<http://www.4spe.org/training/products/0739.php>

Mobilizing Minds

By: Lowell L.L. Bryan, Claudia L.I. Joyce

300 pages, published 2007

The profit is in your people. If you're not mobilizing minds, you're not leveraging your organization's single greatest asset. It is imperative for corporations to put the same energy used for new products and processes into organizational design. Based on a decade of exclusive research, Lowell Bryan and Claudia Joyce of McKinsey & Company have concluded: Your workforce is the key to growth in the 21st century. By tapping into underutilized talents, knowledge, and skills, you can earn tens of thousands of additional dollars per employee, and manage the interdepartmental complexities and barriers that prevent real achievements and profits. Innovative principles enable corporations to:

- Manage complexity, bureaucracy, and redundancy
- Use hierarchical authority to strengthen the authority of key managers and drive performance
- Deliver operating earnings while implementing wealth-creation strategies
- Allow formal networks, talent, and knowledge marketplaces to work in a large company
- Motivate and reward wealth-creating behavior
- Pursue organizational design as a corporate strategy
- Increase worker satisfaction

<http://www.4spe.org/training/products/0733.php>

AUGUST 2007

Surface Treatment of Materials for Adhesion Bonding

Author: Sina Ebnesajjad

200 pages, published 2006

Surface preparation principles and techniques for plastics, thermosets, elastomers, and metals bonding. With emphasis on the practical, this book draws together in a single source technical principles of surface science and surface treatments technologies of plastics, elastomers, and metals. It is both a reference and a guide for engineers, scientists, practitioners of surface treatment, researchers, students, and others involved in materials adhesion and processing.

<http://www.4spe.org/training/products/0721.php>

The New Manager's Handbook – 24 Lessons for Mastering Your New Role

Author: Morey Stettner

108 pages, published 2006

The tools and knowledge you need to manage like a veteran from day one. From employees to bosses, a manager's job is filled with challenges that have to be met quickly and effectively. *The New Manager's Handbook* explains the rules of the game for anyone new to the ranks. You will get invaluable tips for teaming with employees and inspiring breakthrough performance.

<http://www.4spe.org/training/products/0736.php>

JULY 2007

Polymer Chemistry: Properties and Applications

Authors: Allison Calhoun, Andrew Peacock

350 pages, published 2006

A comprehensive introduction to the study of polymers that is useful for undergraduates in the areas of physical sciences and engineering, and for industry professionals new to the field of polymers. Special emphasis is given to the characteristics that set polymers apart from small molecules.

<http://www.4spe.org/training/products/0731.php>

The Chemical Industry and Globalization

Editor: Roger F. Jones

200 pages, published 2007

NEW

This book discusses common misperceptions about employment in manufacturing and R&D, analyzes what future business changes to expect within the industry, and the role of the financial community in the industry's current wave of consolidations and divestitures. The business climate inside China is reviewed extensively, with particular note of future trends. The author does not gloss over the problems of doing business in China but explains how to deal with them. Also included is a chapter on the pharmaceutical industry and the rise of Asian pharmaceutical companies.

<http://www.4spe.org/training/products/0714.php>

JUNE 2007

Semiconducting Polymers: Chemistry, Physics and Engineering, 2nd edition -
two volume set

Editors: Georges Hadziioannou & George G. Malliaras
768 pages, published 2007

NEW

Two volumes provide an overview of semiconducting polymers and their numerous uses, such as printed circuitry, flexible electronics, displays and photovoltaic applications. Prominent researchers from various disciplines cover all aspects of this field, including the synthesis of novel materials, their structure and morphology, their electronics properties, and their device physics and engineering.

This thoroughly revised and enlarged second edition brings readers up-to-date on cutting edge research in this field and is of interest to polymer chemists, materials scientists, physicists and device engineers.

<http://www.4spe.org/training/products/0706.php>

Polymeric Foams: Science and Technology

Authors: Shau-Tarng Lee, Chul B. Park, N.S. Ramesh
220 pages, published 2006

Polymeric Foams provides comprehensive coverage of fundamentals, technologies, applications, and recent developments. The authors first outline the basic principles and fundamental foaming mechanisms, covering thermodynamics, kinetics, and the basics of blowing agents and foam formation. Foaming technologies and product applications then become the focus, with explanations of structure-property relationships, processing methods, and general types of foams. The book concludes with chapters on recent developments in composite and biodegradable foams that illustrate how to tailor processing to meet application needs.

<http://www.4spe.org/training/products/0724.php>

MAY 2007

Encyclopedia of Polymer Science and Technology, Concise, 3rd Ed.

Editor: Herman F. Mark

1462 pages, published 2007

Provides key information from the complete, twelve-volume Mark's Encyclopedia in an affordable, condensed format. Completely revised and updated, this user-friendly desk reference offers quick access to all areas of polymer science, including important advances in nanotechnology, imaging and analytical techniques, controlled polymer architecture, biomimetics, and more, all in one volume.

<http://www.4spe.org/training/products/0707.php>

Reviews in Computational Chemistry, Volume 23

Editors: Kenneth B. Lipkowitz, Thomas R. Cundari, Donald B. Boyd

484 pages, published 2007

This volume, like those prior to it, features chapters by experts in various fields of computational chemistry. Volume 23 covers linear scaling methods for quantum chemistry, variational transition state theory, coarse grain modeling of polymers, support vector machines, conical intersections, analysis of information content using Shannon Entropy, and historical insights into how computing evolved in the pharmaceutical industry.

<http://www.4spe.org/training/products/0708.php>

APRIL 2007

Polymers in Drug Delivery

Edited by Ijeoma F. Uchegbu and Andreas G. Schatzlein

280 pages, published 2006

While *Polymers in Drug Delivery* offers much new insight for the veteran specialist, this work has been compiled with the non-specialist in mind. It includes contributions from many of the world's leading drug delivery specialists, yet avoids jargon and presents background information that initiates the next generation of scientists into the amazing work going on at the frontiers of this rapidly evolving science.

<http://www.4spe.org/training/products/0720.php>

Conjugated Polymers: Processing and Applications

Edited by Terje A. Skotheim and John Reynolds

656 pages, published 2006

Many significant fundamental concepts and practical applications have developed since the publication of the best-selling second edition of the *Handbook of Conducting Polymers*. Now divided into two books, the third edition continues to retain the excellent expertise of the editors and world-renowned contributors while providing superior coverage of the recent advances in polymer processing and applications, particularly in conductivity, nonlinear optics, and light emission.

Conjugated Polymers: Processing and Applications, the second of two volumes, picks up where the first volume ended. Following the essential scientific information found in the first installment, this book explores the ways in which polymers are useful in industrial and commercial applications. These application developments have already led to marketable products.

<http://www.4spe.org/training/products/0716.php>

MARCH 2007

Handbook of Adhesives and Sealants, Second Edition

Author: Edward M. Petrie

800 pages, published 2007

NEW

The Handbook of Adhesives and Sealants will provide a fundamental knowledge base of materials and processes as well as reasons why they work and (more importantly) why they don't work. To the more experienced reader, the breadth and thoroughness of the Handbook will provide a way to reduce time spent on trial and error development or on searching for the optimal recommended process. For the academic, the Handbook will connect the important theories regarding surface science, polymeric materials, and mechanics with practical products and applications of commercial significance. This edition includes major new sections on radiation curable adhesive, biological and naturally occurring adhesives, inorganic adhesives, role of bulk properties of the adhesive, non-destructive testing, and industrial application methods. A completely new chapter is devoted to adhesives used in various industries such as automobile, electrical / electronic, construction, packaging, aerospace, household do-it-yourself, and medical.

<http://www.4spe.org/training/products/0704.php>

Injection Mold Design – Interactive Tutorial

By Bob Dealey

published 2007

NEW

A newly developed CD technical tool for learning the fundamentals of the injection mold design process from your computer in a self-paced environment. The interactive CD utilizes animated illustrations of the design process to achieve the best results from a mold design. Everything you need to know, from nomenclature to sampling the mold, is contained on the highly illustrated CD.

Contents: All included on one 3-inch CD; nomenclature of types of molds, mold items, molding machine and mold actions, mold flow analysis, steps in the mold design process, venting, gating, parting line selection, machining of the core, mold finishes, material selection, number of cavities, mold cooling, ejection methods, mold assembly, sampling and approval of the mold are included in the major sections.

<http://www.4spe.org/training/products/0703.php>

FEBRUARY 2007

Handbook of Plastics Testing and Failure Analysis, 3rd edition

Author: Vishu Shah

654 pages, published 2007

Complete resource on testing plastic for everyone involved in the plastics industry. It presents a major compilation of the basic knowledge of testing plastics in an easy-to-read, easy-to-use format. Individual chapters cover the basic concepts of testing, including the purpose of specifications and standards.

<http://www.spe.org/training/products/0701.php>

Complete Part Design Handbook: Injection Molding of Thermoplastics

Author: E. Alfredo Campo

1200 pages, published 2006

An all inclusive reference guide to plastic part design is compiled with the product designer in mind, who is looking for more detailed information on plastic resins, the rules and geometries underlying their use in product design, and the advantages and limitations of their use in industrial applications

<http://www.4spe.org/training/products/0702.php>

JANUARY 2007

Plastics Pocket Power – Extrusion Blow Molding

Author: Michael Thielen

128 pages, spiral bound, published 2001

The Plastics Pocket Power Series was developed with the plastics processor in mind. This small 3"x5" book is a practical reference tool that contains all the pertinent data plastics processors need to overcome day-to-day challenges. This powerful tool will provide you with an overview of extrusion blow molding technology: from equipment and fundamentals to process details and design guidelines, plus troubleshooting!

<http://www.4spe.org/training/products/0237.php>

Plastics Pocket Power – Aging and Chemical Resistance

Author: C. Bonten, R. Berlich

128 pages, spiral bound, published 2001

The Plastics Pocket Power Series was developed with the plastics processor in mind. This small 3"x5" book is a practical reference tool that contains all of the pertinent data plastics processors need to overcome day-to-day challenges. This powerful tool provides you with an overview of the different interacting aging mechanisms and their influence on plastic parts and their properties. The unique table of chemical resistance delivers information on how the major plastic materials hold up to chemical influences: from acetic acid to zinc chlorides.

<http://www.4spe.org/training/products/0236.php>

DECEMBER 2006

Pocket Specs for Injection Molding, 7th Edition
IDES, 2006, 960 pages

Pocket Specs for Injection Molding provides you with a compact guide for the injection molding of thermoplastic and thermoset materials. Data are provided for thousands of individual grades of molding materials from 260 manufacturers. The data provided in the tables are intended to give you the basic information for determining regrind levels, material drying temperatures and times, and initial machine settings for injection pressure, barrel heats, and mold temperature. Additional physical property data include specific gravity, shrink data, melt flow, and processing temperature ranges.

Precision Injection Molding: Process, Materials and Applications
By Dr. Wimberger-Friedl & Dr. Greener
Hanser Gardner, 2006, 350 pages

This volume examines precision injection molding from different perspectives, covering materials, process, mold and machine aspects, with special emphasis on factors affecting the dimensional integrity and stability of the molded components. It attempts to combine theoretical modeling and application oriented approaches and present the current state of understanding of this complex and critical manufacturing technology. Special topics covered include: mechanisms of dimensional instability of molded plastics, models for prediction of warpage and shrinkage, crystallization phenomena in injection molding, process control, optical disc molding, micro-molding and micro-structure replication for microfluidics.