

Poly Borosiloxanes As Precursors For Carbon Fiber Ceramic

Eventually, you will categorically discover a new experience and completion by spending more cash. yet when? reach you endure that you require to acquire those all needs with having significantly cash? Why dont you attempt to get something basic in the beginning? Thats something that will guide you to understand even more on the subject of the globe, experience, some places, similar to history, amusement, and a lot more?

It is your agreed own grow old to operate reviewing habit. among guides you could enjoy now is **Poly Borosiloxanes As Precursors For Carbon Fiber Ceramic** below.

Encyclopedia of Polymer Science and Engineering, Poly (Phenylene Ether) to Radical Polymerization - Herman F. Mark 1988-09-08

Entirely rewritten, this multi-volume work has been expanded to reflect the vast changes that have occurred in polymer and plastics technology over the past twenty years. There will be seventeen volumes, each containing approximately 850 pages, including about 200 tables and 3,000 literature citations. Over 100 new subjects will be introduced in the new edition. Coverage will include natural and synthetic polymers, plastics, fibers, elastomers, computer topics, and processing.

Engineered Materials Abstracts - 1994-10

Carbide, Nitride and Boride Materials Synthesis and Processing - A.W. Weimer 2012-12-06

Carbide, Nitride and Boride Materials Synthesis and Processing is a major reference text addressing methods for the synthesis of non-oxides. Each chapter has been written by an expert practising in the subject area, affiliated with industry, academia or government research, thus providing a broad perspective of information for the reader. The subject matter ranges from materials properties and applications to methods of synthesis including pre- and post-synthesis processing. Although most of the text is concerned with the synthesis of powders, chapters are included for other materials such as whiskers, platelets, fibres and

coatings. Carbide, Nitride and Boride Materials Synthesis and Processing is a comprehensive overview of the subject and is suitable for practitioners in the industry as well as those looking for an introduction to the field. It will be of interest to chemical, mechanical and ceramic engineers, materials scientists and chemists in both university and industrial environments working on or with refractory carbides, nitrides and borides.

Concise Polymeric Materials Encyclopedia - Joseph C. Salamone 1998-08-28

Concise Polymeric Materials Encyclopedia culls the most used, widely applicable articles from the Polymeric Materials Encyclopedia - more than 1,100 - and presents them to you in a condensed, well-ordered format. Featuring contributions from more than 1,800 scientists from all over the world, the book discusses a vast array of subjects related to the: synthesis, properties, and applications of polymeric materials development of modern catalysts in preparing new or modified polymers modification of existing polymers by chemical and physical processes biologically oriented polymers This comprehensive, easy-to-use resource on modern polymeric materials serves as an invaluable addition to reference collections in the polymer field.

Handbook of Advanced Ceramics and Composites - Yashwant Mahajan 2020-11-26

This handbook presents an authoritative account of the potential of advanced ceramics and composites in strategic applications, including defense, national security, aerospace, and energy security (especially nuclear energy). It highlights how their unique combination of superior properties such as low density, high strength, high elastic modulus, high hardness, high temperature capability, and excellent chemical and environmental stability are optimized in technologies within these fields. The handbook is organized according to application type. It allows readers to learn about strategies that have been used in different fields and to transfer them to their own. The book addresses a wide variety of ceramics and their composites, including PZT ceramics, carbon nanotubes, aerogels, silica radomes, relaxor ferroelectrics, and many others.

Chinese Ceramics Communications - Wei Pan 2010-04-15

Volume is indexed by Thomson Reuters CPCI-S (WoS). This special volume presents the latest advances in the science and technology of high-performance ceramics in China. More than 600 valuable original contributions were sifted, using a strict peer-review process, to yield the more than 229 manuscripts included in this collection. The contributions covered almost all aspects of the field including: functional ceramics, structural ceramics, processing of ceramics and the evaluation of ceramics.

Novel Combustion Concepts for Sustainable Energy Development - Avinash K Agarwal 2014-12-19

This book comprises research studies of novel work on combustion for sustainable energy development. It offers an insight into a few viable novel technologies for improved, efficient and sustainable utilization of combustion-based energy production using both fossil and bio fuels. Special emphasis is placed on micro-scale combustion systems that offer new challenges and opportunities. The book is divided into five sections, with chapters from 3-4 leading experts forming the core of each section. The book should prove useful to a variety of readers, including students, researchers, and professionals.

Innovative Processing and Manufacturing of Advanced Ceramics

and Composites II - Tatsuki Ohji 2014-02-19

Contains collection of papers from the below symposia held during the 10th Pacific Rim Conference on Ceramic and Glass Technology (PacRim10), June 2-7, 2013, in Coronado, California 2012: Novel, Green, and Strategic Processing and Manufacturing Technologies Polymer Derived Ceramics and Composites Advanced Powder Processing and Manufacturing Technologies Synthesis and Processing of Materials Using Electric Fields/Currents

Polymeric and Nanostructured Materials - Aparna Thankappan 2018-11-20

This volume provides in-depth knowledge and recent research on polymers and nanostructured materials from synthesis to advanced applications. Leading researchers from industry, academia, government, and private research institutions across the globe have contributed to this volume, covering new research on nanocomposites, polymer technology, and electrochemistry.

Polyurethane Polymers: Blends and Interpenetrating Polymer Networks - Sabu Thomas 2017-08-15

Polyurethane Polymers: Blends and Interpenetrating Networks deals with almost all aspects of blends and IPNs formed by polyurethane, including the thermal, mechanical, morphological, and viscoelastic properties of each blend presented in the book. In addition, major applications related to these blends and IPNs are mentioned. Provides an elaborate coverage of the chemistry of polyurethane, including its synthesis and properties Includes available characterization techniques Relates types of polyurethanes to their potential properties Discusses blends options

Fiber Reinforced Composites - Joseph Kuruvilla 2021-03-20

Polymer-based fibre-reinforced composites FRC's have now come out as a major class of structural materials being used or regarded as substituent's for metals in several critical components in space, automotive and other industries (marine, and sports goods) owing to their low density, strength-weight ratio, and fatigue strength. FRC's have several commercial as well as industrial applications ranging from

aircraft, space, automotive, sporting goods, marine, and infrastructure. The above-mentioned applications of FRC's clearly reveal that FRC's have the potential to be used in a broad range of different engineering fields with the added advantages of low density, and resistance to corrosion compared to conventional metallic and ceramic composites. However, for scientists/researchers/R&D's to fabricate FRC's with such potential there should be careful and precise design followed by suitable process development based on properties like mechanical, physical, and thermal that are unique to each application. Hence the last few decades have witnessed considerable research on fibre reinforced composites. Fibre Reinforced Composites: Constituents, Compatibility, Perspectives and Applications presents a widespread all-inclusive review on fibre-reinforced composites ranging from the different types of processing techniques to chemical modification of the fibre surface to enhance the interfacial adhesion between the matrix and fibre and the structure-property relationship. It illustrates how high value composites can be produced by efficient and sustainable processing methods by selecting different constituents [fibres and resins]. Researchers in academia working in composites and accompanying areas [materials characterisation] and industrial manufacturers who need information on composite constituents and how they relate to each other for a certain application will find the book extremely useful when they need to make decisions about materials selection for their products. Focuses on the different types of FRC's that are currently available (e.g. from polymeric matrices to metallic and ceramic matrices, from carbon fibre to different types of natural fibres and from short to long fibre reinforced), their processing techniques, characterization of different properties, and how to improve the interfacial adhesion between an incompatible fibre and matrix and their applications Looks at crisis areas such as how to incorporate incompatible fibres and matrices together (e.g. Non-polar polypropylene matrix is not compatible with that of polar natural fibres and hence suitable surface modifications are required to make them compatible with each other) along with low cost processing methods, low density and high strength Uncovers clarifications to both elementary and

practical problems related to the fabrication of FRCs Schematic representations depicting the interaction between different fibre types and matrices will be provided in some chapters

Glasses and Glass-Ceramics - M.H. Lewis 2013-04-17

The emergence of synthetic ceramics as a prominent class of materials with a unique combination of properties has been an important part of the materials-science scene over the past 20 years. These 'high-technology' ceramics have varied applications in areas utilizing their exceptional mechanical, thermal, optical, magnetic or electronic properties. A notable development of the 1970s was that of 'Si-based' ceramics (Si₃N₄, SiC and 'Sialons') as high-temperature engineering solids. More recently the zirconia-based ceramics have evolved as a class of material with significant improvements in fracture-toughness. In the 1980s we are on the threshold of development of ceramic-matrix composites with the promise of overcoming major limitations in engineering design with 'brittle' ceramics and the development of novel properties unattainable with monolithic micro structures. Throughout this period there have been significant but less well-publicized developments in the field of glass-ceramics and glasses. It is the purpose of this publication to review selected topics within this important area of materials science. A key element in understanding the relation between properties and microstructure is a knowledge of atomic arrangement in ceramic phases. Recent developments in NMR and X-ray absorption spectroscopies have had considerable impact on studies of atomic coordination in glasses and crystalline ceramic materials and are reviewed in Chapters 1 and 2. Glass-ceramics are derived from the parent glasses by controlled crystallization and have properties dictated, in part, by the efficiency of crystal nucleation within the glass volume.

Handbook of sol-gel science and technology. 1. Sol-gel processing
- Sumio Sakka 2005

Since Dr. Dörsch of Germany prepared a glass lens by the sol-gel method around 1970, sol-gel science and technology has continued to develop. Since then this field has seen remarkable technical developments as well as a broadening of the applications of sol-gel science and technology.

There is a growing need for a comprehensive reference that treats both the fundamentals and the applications, and this is the aim of "Handbook of Sol-Gel Science and Technology." The primary purpose of sol-gel science and technology is to produce materials, active and non-active including optical, electronic, chemical, sensor, bio- and structural materials. This means that sol-gel science and technology is related to all kinds of manufacturing industries. Thus Volume 1, "Sol-Gel Processing," is devoted to general aspects of processing. Newly developed materials such as organic-inorganic hybrids, photonic crystals, ferroelectric coatings, photocatalysts will be covered. Topics in this volume include: Volume 2, "Characterization of Sol-Gel Materials and Products," highlights the important fact that useful materials are only produced when characterization is tied to processing. Furthermore, characterization is essential to the understanding of nanostructured materials, and sol-gel technology is a most important technology in this new field. Since nanomaterials display their functional property based on their nano- and micro-structure, "characterization" is very important. Topics found in Volume 2 include: Sol-gel technology is a versatile technology, making it possible to produce a wide variety of materials and to provide existing substances with novel properties. This technology was applied to producing novel materials, for example organic-inorganic hybrids, which are quite difficult to make by other fabricating techniques, and it was also applied to producing materials based on high temperature superconducting oxides. "Applications of Sol-Gel Technology," (Volume 3), will cover applications such as:

Surface Modification of Nanoparticle and Natural Fiber Fillers - Vikas Mittal 2015-05-19

A review of the various methodologies for the surface treatment of different types of inorganic spherical and fibrous fillers, describing ball milling, cationic polymerization, vapor phase grafting, plasma treatment and UV irradiation in detail. In addition, the book connects the resulting composite properties to the modified filler surface properties, thus allowing for a purposeful, application-oriented composite design.

Electrochemical Energy Storage - Jean-Marie Tarascon 2015-02-23

The electrochemical storage of energy has become essential in assisting the development of electrical transport and use of renewable energies. French researchers have played a key role in this domain but Asia is currently the market leader. Not wanting to see history repeat itself, France created the research network on electrochemical energy storage (RS2E) in 2011. This book discusses the launch of RS2E, its stakeholders, objectives, and integrated structure that assures a continuum between basic research, technological research and industries. Here, the authors will cover the technological advances as well as the challenges that must still be resolved in the field of electrochemical storage, taking into account sustainable development and the limited time available to us. Chemical Abstracts - 2002

Book of Abstracts - 2000

Fiber and Whisker Reinforced Ceramics for Structural Applications - David Belitskus 1993-07-19

Examines all important aspects of whisker and fibre reinforced ceramic science and technology, offering a balanced account of developments in the field. The work shows how to improve the strength and stiffness of ceramic composites, at very high temperatures, without brittleness.

Carbohydrate Chemistry - Amelia Pilar Rauter 2016-10-31

With the increase in volume, velocity and variety of information, researchers can find it difficult to keep up to date with the literature in their field. This invaluable volume contains analysed, evaluated and distilled information on the latest in carbohydrate research. The discovery and synthesis of novel carbohydrates and mimetics with diverse applications continues to be a major challenge for carbohydrate chemists. The understanding of the structure and function of carbohydrates and glycoconjugates remains vital in medicine and molecular biology. This volume collates modern carbohydrate research from theory to application and demonstrates the importance of carbohydrates in new lead generation. It is of benefit to any researcher who wishes to learn about the latest developments in the carbohydrate

field.

Synthesis and Processing of Ceramics--scientific Issues - 1992

Polymer Derived Ceramics - Paolo Colombo 2010

This book presents the foundations of the science of polymer derived ceramics, enriched with many descriptions of applications. Written by a team of selected researchers, the text is a systematic, comprehensive introduction to all phases of polymer derived ceramics from synthesis strategies through properties measurement, and applications. New material is given on the nanolevel structure of PDCs, and it is shown how nano-sized modifications can alter and improve the properties of polymer derived ceramics, including high chemical durability, oxidation resistance, luminescence, and piezo-resistivity. Groundbreaking work is also described on novel precursors such as stoichiometric SiC, BN, and SiBCN ceramics. In terms of technology, this volume explains how PDCs are fabricated and how these novel materials are used in membranes, filters, MEMS, fibers, and micro-components. This book covers: synthesis, structure, properties and applications; strategies for characterizing and synthesizing PDCs; and, original research on pre-ceramic PDC precursors.

Physics Briefs - 1987

The Chemistry of Metal Alkoxides - N.Y. Turova 2006-05-20

This book is devoted to general questions of the chemistry of metal alkoxides - including physiochemical properties, structure, specific features of single groups of alkoxides, theoretical principles of their use, and major applications of this method in the preparation of functional materials.

Silicon-Based Polymers and Materials - Jerzy J. Chruściel 2022-03-07

Silicon based materials and polymers are made of silicon containing polymers, mainly macromolecular siloxanes (silicones). This book covers the different kinds of siliconbased polymers: silicones, silsesquioxanes (POSS), and silicon-based copolymers. Other silicon containig polymers: polycarbosilanes, polysilazanes, siloxane-organic copolymers, silicon

derived high-tech ceramics: silicon carbide and oxycarbide, silicon nitride, etc. have also a very important practical meaning and a hudge number of practical applications. These materials make up products in a variety of industries and products, including technical and medical applicatons. Polycrystalline silicon is the basic material for large scale photovoltaic (PV) applications as solar cells. Technical applications of crystalline (c-Si) and amorphous (a-Si) silicon (fully inorganic materials), silicon nanowires are still quickly growing, especially in the fi eld of microelectronics, optoelectronics, photonics. and photovoltaics, catalysts, and different electronic devices (e.g. sensors, thermoelectric devices). This book is ideal for researchers and as such covers the industrial perspective of using each class of silicon based materials. Discusses silanes, silane coupling agents (SCA), silica, silicates, silane modified fillers, silsesquioxanes, silicones, and other silicon polymers and copolymers for practical applications as polymeric materials and very useful ingredients in materials science.

Silicon-based Structural Ceramics - Brian W. Sheldon 1994

The International Plastics Flammability Handbook - Jurgen Troitzsch 1990-01

Innovative Processing and Manufacturing of Advanced Ceramics and Composites II - Tatsuki Ohji 2014-02-03

Contains collection of papers from the below symposia held during the 10th Pacific Rim Conference on Ceramic and Glass Technology (PacRim10), June 2-7, 2013, in Coronado, California 2012: Novel, Green, and Strategic Processing and Manufacturing Technologies Polymer Derived Ceramics and Composites Advanced Powder Processing and Manufacturing Technologies Synthesis and Processing of Materials Using Electric Fields/Currents

Aerospace Materials and Material Technologies - N. Eswara Prasad 2016-11-11

This book is a comprehensive compilation of chapters on materials (both established and evolving) and material technologies that are important

for aerospace systems. It considers aerospace materials in three Parts. Part I covers Metallic Materials (Mg, Al, Al-Li, Ti, aero steels, Ni, intermetallics, bronzes and Nb alloys); Part II deals with Composites (GLARE, PMCs, CMCs and Carbon based CMCs); and Part III considers Special Materials. This compilation has ensured that no important aerospace material system is ignored. Emphasis is laid in each chapter on the underlying scientific principles as well as basic and fundamental mechanisms leading to processing, characterization, property evaluation and applications. This book will be useful to students, researchers and professionals working in the domain of aerospace materials.

Springer Handbook of Nanomaterials - Robert Vajtai 2013-08-20

The Springer Handbook of Nanomaterials covers the description of materials which have dimension on the "nanoscale". The description of the nanomaterials in this Handbook follows the thorough but concise explanation of the synergy of structure, properties, processing and applications of the given material. The Handbook mainly describes materials in their solid phase; exceptions might be e.g. small sized liquid aerosols or gas bubbles in liquids. The materials are organized by their dimensionality. Zero dimensional structures collect clusters, nanoparticles and quantum dots, one dimensional are nanowires and nanotubes, while two dimensional are represented by thin films and surfaces. The chapters in these larger topics are written on a specific materials and dimensionality combination, e.g. ceramic nanowires. Chapters are authored by well-established and well-known scientists of the particular field. They have measurable part of publications and an important role in establishing new knowledge of the particular field.

2000 International Chemical Congress of Pacific Basin Societies - 2000

The Non-halogenated Flame Retardant Handbook - Alexander B. Morgan 2014-04-07

Due to the emphasis on replacing halogenated flame retardants with alternate technologies, this handbook contains in one place all of the current commercial non-halogenated flame retardant technologies, as

well as experimental systems near commercialization. This book focuses on non-halogenated flame retardants in a holistic but practical manner. It starts with an overview of the regulations and customer perceptions driving non-halogenated flame retardant selection over older halogenated technologies. It then moves into separate chapters covering the known major classes of non-halogenated flame retardants. These chapters are written by known experts in those specific chemistries who are also industrial experts in how to apply that technology to polymers for fire safety needs. The handbook concludes with some of the newer technologies in place that are either niche performers or may be commercial in the near future. Future trends in flame retardancy are also discussed. The Non-Halogenated Flame Retardant Handbook book takes a practical approach to addressing the narrow subject of non-halogenated flame retardancy. This includes more emphasis on flame retardant selection for specific plastics, practical considerations in flame retardant material design, and what the strengths and limits of these various technologies are. Previous flame retardant material science books have covered non-halogenated flame retardants, but they focus more on how they work rather than how to use them.

B Boron Compounds - Anton Meller 2013-03-09

The present issue, Volume 3a of "Boron Compounds" 4th Supplement of the Gmelin Hand book, presents the description of boron nitride and a part of other boron compounds containing nitrogen. Volume 3 b (to be published Later) will complete the presentation of the boron-nitrogen compounds and will also cover boron compounds containing fluorine. Due to technical circumstances, Volume 1 (systems with hydrogen) and Volume 2 (systems with oxygen) of this particular supplement will be published subsequently, whereas Volume 4 (boron compounds containing Cl, Br, I, S, Se, and Te, as well as a section containing carboranes) has already been published. ALL volumes of the 4th Supplement will be augmented by a formula index. The IUPAC nomenclature is generally adhered to; occasional abbreviations for compounds are explained in the text. A positive sign for the chemical shifts of the NMR signals indicates a 1-13 downfield shift from the references, usually internal (CH) Si for 6

H and 6 C and external 3 4 11 (C H h0-BF for 6 B, others being specified. 2 5 3 In contrast to more recent publications but remaining consistent with the previous volumes of the Boron Series, the iminoborane structure is written as B=N and not as B=N. In fact, the real electronic structure is more realistically symbolized by B=N, but it seems reasonable to avoid =NR in accordance with the commonly accepted "iminoborane" nomenclature.

High Temperature Ceramic Matrix Composites - R. Naslain 1993

Ceramic Abstracts - 2000

Precursor-Derived Ceramics - Joachim Bill 2008-07-11

The production of high-purity ceramic materials from low-molecular weight, inorganic or organoelement precursors is a topic of increasing relevance within materials science. With this emerging technology it is possible to precisely tailor the properties of the ceramic material which enables new high-temperature or electronic applications. Every materials scientist and engineer involved in the research and development of new high-performance ceramic materials will find these results - presented at a recent workshop of the Max-Planck-Gesellschaft - of great importance for his own work.

Ceramic Nanocomposites - Rajat Banerjee 2013-07-31

Ceramic nanocomposites have been found to have improved hardness, strength, toughness and creep resistance compared to conventional ceramic matrix composites. Ceramic nanocomposites reviews the structure and properties of these nanocomposites as well as manufacturing and applications. Part one looks at the properties of different ceramic nanocomposites, including thermal shock resistance, flame retardancy, magnetic and optical properties as well as failure mechanisms. Part two deals with the different types of ceramic nanocomposites, including the use of ceramic particles in metal matrix composites, carbon nanotube-reinforced glass-ceramic matrix composites, high temperature superconducting ceramic nanocomposites and ceramic particle nanofluids. Part three details the processing of

nanocomposites, including the mechanochemical synthesis of metallic-ceramic composite powders, sintering of ultrafine and nanosized ceramic and metallic particles and the surface treatment of carbon nanotubes using plasma technology. Part four explores the applications of ceramic nanocomposites in such areas as energy production and the biomedical field. With its distinguished editors and international team of expert contributors, Ceramic nanocomposites is a technical guide for professionals requiring knowledge of ceramic nanocomposites, and will also offer a deeper understanding of the subject for researchers and engineers within any field dealing with these materials. Reviews the structure and properties of ceramic nanocomposites as well as their manufacturing and applications Examines properties of different ceramic nanocomposites, as well as failure mechanisms Details the processing of nanocomposites and explores the applications of ceramic nanocomposites in areas such as energy production and the biomedical field

Advanced and Emerging Polybenzoxazine Science and Technology - Hatsuo Ishida 2017-01-18

Advanced and Emerging Polybenzoxazine Science and Technology introduces advanced topics of benzoxazine resins and polybenzoxazines as presented through the collaboration of leading experts in the benzoxazine community, representing the authoritative introduction to the subjects. Broad topics covered include the recent development and improved understanding of the subjects, including low temperature cure, aerogels and carbon aerogels, smart chemistry in fire retarding materials and coatings, metal containing benzoxazines, rational design of advanced properties, and materials from natural renew. In the past twenty years, the number of papers on polybenzoxazine has continuously increased at an exponential rate. During the past three years, the number of papers published is more than the previous 17 years combined. The material is now part of only a few successfully commercialized polymers in the past 35 years. Therefore, interest in this material in both academia and industry is very strong. Includes the latest advancements in benzoxazine chemistry Describes advanced materials, such as aerogels, carbons,

smart coatings, nanofibers, and shape memory materials Includes additional characterization data and techniques, such as FT-IR, Raman, NMR, DSC, and TGA analyses

Ceramic Matrix Composites - Walter Krenkel 2008-09-08

Covering an important material class for modern applications in the aerospace, automotive, energy production and creation sectors, this handbook and reference contains comprehensive data tables and field reports on successfully developed prototypes. The editor and authors are internationally renowned experts from NASA, EADS, DLR, Porsche, MT Aerospace, as well as universities and institutions in the USA, Europe and Japan, and they provide here a comprehensive overview of current R & D with an application-oriented emphasis.

Inorganic Polymers - James E. Mark 2005-04-21

Polymer chemistry and technology form one of the major areas of molecular and materials science. This field impinges on nearly every aspect of modern life, from electronics technology, to medicine, to the wide range of fibers, films, elastomers, and structural materials on which everyone depends. Although most of these polymers are organic materials, attention is being focused increasingly toward polymers that contain inorganic elements as well as organic components. The goal of *Inorganic Polymers* is to provide a broad overview of inorganic polymers

in a way that will be useful to both the uninitiated and those already working in this field. There are numerous reasons for being interested in inorganic polymers. One is the simple need to know how structure affects the properties of a polymer, particularly outside the well-plowed area of organic materials. Another is the bridge that inorganic polymers provide between polymer science and ceramics. More and more chemistry is being used in the preparation of ceramics of carefully controlled structure, and inorganic polymers are increasingly important precursor materials in such approaches. This new edition begins with a brief introductory chapter. That is followed with a discussion of the characteristics and characterization of polymers, with examples taken from the field. Other chapters in the book detail the synthesis, reaction chemistry, molecular structure, and uses of polyphosphazenes, polysiloxanes, and polysilanes. The coverage in the second edition has been updated and expanded significantly to cover advances and interesting trends since the first edition appeared. Three new chapters have been added, focusing on ferrocene-based polymers, other phosphorous-containing polymers, and boron-containing polymers; inorganic-organic hybrid composites; and preceramic inorganic polymers.

Encyclopedia of Industrial Chemical Analysis - Foster Dee Snell 1972