Application Of Super Absorbent Polymer In Flood Management

Cellulose-Based Superabsorbent Hydrogels
Application of Super Absorbent Polymers (SAP) in Concrete Construction
Algae Based Polymers, Blends, and Composites
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Cellulose Chemistry and Properties: Fibers, Nanocelluloses and Advanced Materials
Medical Textile Materials
Progress in Intelligent Decision Science
Encyclopedic Dictionary of Polymers
Agricultural Salinity Assessment and Management
Smart Polymers and their Applications
Reclamation of Arid Lands
Encyclopedia of Polymer Applications, 3 Volume Set
Acrylic Polymers in Healthcare
Trace Metals in the Environment
Application of Super Absorbent Polymers (SAP) in Concrete Construction
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Bacteriophages
Agroecology and Strategies for Climate Change
Polymers in Construction
Properties and Applications of Superabsorbent Polymers
Handbook of Fibrous Materials, 2 Volumes
TMS 2022 151st Annual Meeting & Exhibition Supplemental Proceedings
3rd International Conference on the Application of Superabsorbent Polymers (SAP) and Other New Admixtures Towards Smart Concrete
Hydrogels Based on Natural Polymers
Bio-based Superabsorbents
Lignin Utilization Strategies
Micro- and Nanostructured Polymer Systems

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Cellulose-Based Superabsorbent Hydrogels John Wiley & Sons
This book is a good basic guide to the polymers that are used in the construction industry. The types of polymers that can be used are discussed and specific applications are also covered. There is also a very comprehensive section on the health and safety aspects of using polymers in buildings.
Application of Super Absorbent Polymers (SAP) in Concrete Construction Springer
Algae Based Polymers, Blends, and Composites: Chemistry, Biotechnology and Material Sciences offers considerable detail on the origin of algae, extraction of useful metabolites and major compounds from algal bio-mass, and the production and future prospects of sustainable polymers derived from algae, blends of algae, and algae based composites. Characterization methods and processing techniques for algae-based polymers and composites are discussed in detail, enabling researchers to apply the latest techniques to their own work. The conversion of bio-mass into high value chemicals, energy, and

materials has ample financial and ecological importance, particularly in the era of declining petroleum reserves and global warming. Algae are an important source of biomass since they flourish rapidly and can be cultivated almost everywhere. At present the majority of naturally produced algal biomass is an unused resource and normally is left to decompose. Similarly, the use of this enormous underexploited biomass is mainly limited to food consumption and as bio-fertilizer. However, there is an opportunity here for materials scientists to explore its potential as a feedstock for the production of sustainable materials. Provides detailed information on the extraction of useful compounds from algal biomass Highlights the development of a range of polymers, blends, and composites Includes coverage of characterization and processing techniques, enabling research scientists and engineers to apply the information to their own research and development Discusses potential applications and future prospects of algae-based biopolymers, giving the latest insight into the future of these sustainable materials

Algae Based Polymers, Blends, and Composites Springer Science & Business Media
This collection presents papers from the 151st Annual Meeting & Exhibition of The Minerals, Metals & Materials Society.
Modern Superabsorbent Polymer Technology Springer Science & Business Media
This is the state-of-the-art report prepared by the RILEM TC "Application of Super Absorbent Polymers (SAP) in concrete construction". It gives a comprehensive overview of the properties of SAP, specific water absorption and desorption behaviour of SAP in fresh and hardening concrete, effects of the SAP addition on rheological properties of fresh concrete, changes of cement paste microstructure and mechanical properties of concrete. Furthermore, the key advantages of using SAP are described in detail: the ability of this material to act as an internal curing agent to mitigate autogenous shrinkage of high-performance concrete, the possibility to use SAP as an alternative to air-entrainment agents in order to increase the frost resistance of concrete, and finally, the benefit of steering the rheology of

fresh cement-based materials. The final chapter describes the first existing and numerous prospective applications for this new concrete additive.

Cellulose Chemistry and Properties: Fibers, Nanocelluloses and Advanced Materials

Springer

The book defines the differences between synthetic and natural superabsorbent polymers. It describes polymerization techniques, processing strategies and the use and importance of smart SAPs. It also includes SAP design to aid in selection of the best SAP for a specific application. The book is an indispensible resource for any academics and industrials interested in SAPs.

Medical Textile Materials

Cambridge University Press

Edited by a leading expert in the field with contributions from experienced researchers in fibers and textiles, this handbook reviews the current state of fibrous materials and provides a broad overview of their use in research and development. Volume One focuses on the classes of fibers, their production and characterization, while the second volume concentrates on their applications, including emerging ones in the areas of

energy, environmental science and healthcare. Unparalleled knowledge of high relevance to academia and industry. *Progress in Intelligent Decision Science* Humana Press This reference, in its second edition, contains more than 7,500 polymeric material terms, including the names of chemicals, processes, formulae, and analytical methods that are used frequently in the polymer and engineering fields. In view of the evolving partnership between physical and life sciences, this title includes an appendix of biochemical and microbiological terms (thus offering previously unpublished material, distinct from all competitors.) Each succinct entry offers a broadly accessible definition as well as cross-references to related terms. Where appropriate to enhance clarity further, the volume's definitions may also offer equations, chemical structures, and other figures. The new interactive software facilitates easy access to a large database of chemical structures (2D/3D-view), audio files for pronunciation, polymer science equations and many more. *Encyclopedic Dictionary of Polymers* Elsevier

This book contains the topics of artificial intelligence and deep learning that do have much application in real-life problems. The concept of uncertainty has long been used in applied science, especially decision making and a logical decision must be made in the field of uncertainty or in the real-life environment that is formed and combined with vague concepts and data. The chapters of this book are connected to the new concepts and aspects of decision making with uncertainty. Besides, other chapters are involved with the concept of data mining and decision making under uncertain computations. **Agricultural Salinity Assessment and Management** BoD – Books on Demand This book provides an overview of arid and semi-arid lands conditions, their general characteristics , methods of management, conservation, exploitation and reclamation. It also focuses on how to utilize the potential of arid lands with the minimum manipulation and alteration. Arid and semi-arid areas represent a major part of natural ecosystems not only in Iran, but around the world, and mismanagement and inappropriate exploitation of these areas may lead to further

gradual degradation. As such, an understanding of the characteristics of these areas is vital if they are to be conserved and reclaimed.

Smart Polymers and their Applications Springer

Smart polymers are polymers that respond to different stimuli or changes in the environment. Smart Polymers and their Applications reviews the types, synthesis, properties, and applications of smart polymers. Chapters in part one focus on types of polymers, including temperature-, pH-, photo-, and enzyme-responsive polymers. Shape memory polymers, smart polymer hydrogels, and self-healing polymer systems are also explored. Part two highlights applications of smart polymers, including smart instructive polymer substrates for tissue engineering; smart polymer nanocarriers for drug delivery; the use of smart polymers in medical devices for minimally invasive surgery, diagnosis, and other applications; and smart polymers for bioseparation and other biotechnology applications. Further chapters discuss the use of smart polymers for textile and packaging applications,

and for optical data storage. Smart Polymers and their Applications is a technical resource for chemists, chemical engineers, mechanical engineers, and other professionals in the polymer industry; manufacturers in such sectors as medical, automotive, and aerospace engineering; and academic researchers in polymer science. Reviews the different types of smart polymer, discussing their properties, structure, design, and characterizati on Reviews applications of smart polymers in such areas as biomedical engineering, textiles, and food packaging Reclamation of Arid Lands Woodhead Publishing This book examines the synthetic approaches, properties, applications, and recyclability of bio-based superabsorbe nt polymers (SAP) in depth. It describes and compares bio-based SAPs with petro-based SAPs. Additionally, it explores the structure–prop erty relationships of bio-based SAPs derived from various natural sources. The book covers current and emerging applications in health and hygiene products, agriculture, construction, and other areas. It also explores the recycling and reusing methods available for

water recovery, pressure sensitive adhesives, etc. It discusses the issues behind the sharp increase in research attention, namely the prevailing research hotspots/clusters and suggestions with regard to present studies, works that have been significant and pivotal in the development of SAP research, and the current advances and future directions of research. It also presents the emerging applications of superabsorbent polymers. *Encyclopedia of Polymer Applications, 3 Volume Set* Wiley-VCH Eco-efficient Repair and Rehabilitation of Concrete Infrastructures, Second Edition provides an updated state-of-the-art review on the latest advances in this important research field. The first section is brought fully up-to-date and focuses on deterioration assessment methods. Section two contains brand new chapters on innovative concrete repair and rehabilitation materials including: fly ash-based alkali-activated repair materials for concrete exposed to aggressive environments; repairing concrete structures with alkali-activated metakaolin mortars; concrete with micro encapsulated

self-healing materials; concrete repaired with bacteria; concrete structures repaired with engineered cementitious composites; concrete repaired by electrodepositi on; the assessment of concrete after repair operations and durability of concrete repair. The final section has also been amended to include six new chapters on design, Life-cycle cost analysis and life-cycle assessment. These chapters include maintenance strategies for concrete structures; a comparison of different repair methods; life cycle assessment of the effects of climate change on bridge deterioration; life-cycle-cost benefits of cathodic protection of concrete structures; life-cycle cost analyses for concrete bridges exposed to chlorides and life-cycle analysis of repair of concrete pavements. The book will be an essential reference resource for materials scientists, civil and structural engineers, architects, structural designers and contractors working in the construction industry. Covers the latest research findings on eco-efficient repair and rehabilitation of concrete infrastructures Provides comprehensiv e coverage from damage

detection and assessment, to repair strategies and structural health monitoring Presents a diverse author base that offers insights on construction practice and employed technologies worldwide Includes an entire section on NDT, innovative repair, and rehabilitation materials, as well as case studies on lifecycle cost analysis and lifecycle assessment

Acrylic Polymers in Healthcare John Wiley & Sons Discusses the fundamental aspects of structure-property relationships in superabsorbent polymers, including network modeling and compressibility of ionic gels. Describes methods of preparation and specification of superabsorbents. Presents novel methods of preparation resulting in absorbent polymers with advanced properties.

Examines emerging applications of superabsorbent polymers in the construction, agriculture, food, leisure, and communications industries.

Trace Metals in the Environment Springer Science & Business Media Presenting a unique perspective on state-of-the-art physical gels, this interdisciplinary guide provides a complete, critical analysis of the field and

highlights recent developments. It shows the interconnections between the key aspects of gels, from molecules and structure through to rheological and functional properties, with each chapter focusing on a different class of gel. There is also a final chapter covering innovative systems and applications, providing the information needed to understand current and future practical applications of gels in the pharmaceutical, agricultural, cosmetic, chemical and food industries. Many research teams are involved in the field of gels, including theoreticians, experimentalists and chemical engineers, but this interdisciplinary book collates and rationalises the many different points of view to provide a clear understanding of these complex systems for researchers and graduate students.

Application of Super Absorbent Polymers (SAP) in Concrete Construction

Springer Nature

In recent years, there has been a veritable explosion of research and development in consumer-oriented fields that utilize polymeric materials which absorb large amounts of water. These fields encompass the

preparation, characterization and commercialization of separation systems, pharmaceutical and personal care products such as infant diapers, feminine products, incontinence products and many other related areas. The polymeric materials utilized in these applications are known as absorbent or superabsorbent materials because of their ability to swell rapidly and to retain large volumes of water, urine and other biological fluids.The aim of this book is to introduce the fundamentals of polymer structure and swelling as related to polymers used for these superabsorbent materials. In the field of absorbence, particular attention is given to crosslinked structures which swell to more than fifty times their initial weight in water or electrolytic solutions. The book also provides descriptions of novel applications of superabsorbent materials as well as a detailed analysis of water transport in crosslinked polymers.Absorbent Polymer Technology should be of interest to chemists, polymer scientists, chemical engineers, and industrial scientists working with swellable polymeric systems in personal care, pharmaceutical, agricultural

waste treatment and separation industries.

Absorbent Polymer Technology

Elsevier

A thorough, up-to-date examination of the science and practical application of superabsorbent polymers. Modern Superabsorbent Polymer Technology takes a comprehensive look at the structure, properties, and uses of superabsorbent polymers. Prepared by editors with over 20 years of experience in the field, it offers a unified approach to polymer science technologies and examines the key interrelationships between structure, properties, behavior, and applications. This book draws on the best and most relevant scientific papers from academia and industry, as well as numerous patents and patent applications. The result is a compact, centralized source of information on superabsorbent polymers that no polymer or chemical engineer will want to be without. Discusses synthetic chemistry and the effects of synthesis on the structure of superabsorbent polymers * Describes and compares industrial practices of the major manufacturers of superabsorbent polymers * Features analytical methods for evaluation of the properties

and behavior of superabsorbent polymers * Explores structural and property relationships of crosslinked super-absorbent polymers * Surveys new superabsorbent polymer forms and types-including fibers, foams, and biodegradable superabsorbents * Covers current and emerging applications in personal care products, horticulture, construction, and other areas.

Hydrogels
Springer Nature
This volume presents selected papers from IACMAG Symposium,The major themes covered in this conference are Earthquake Engineering, Ground Improvement and Constitutive Modelling. This volume will be of interest to researchers and practitioners in geotechnical and geomechanical engineering.

Application of Superabsorbent Polymers (SAP) in Concrete Construction
Springer Nature
This book focuses on the recent trends in micro- and nano-structured polymer systems, particularly natural polymers, biopolymers, biomaterials, and their composites, blends, and IPNs. This valuable volume covers the occurrence, synthesis, isolation, production,

properties and applications, modification, as well as the relevant analysis techniques to reveal the structures and properties of polymer systems. Biobased polymer blends and composites occupy a unique position in the dynamic world of new biomaterials. The growing need for lubricious coatings and surfaces in medical devices—an outcome of the move from invasive to noninvasive medicines and procedures—is playing a major role in the advancement of biomaterials technology. Natural polymers have attained their cutting-edge technology through various platforms, and this book presents a multitude of information about them. Topics include biopolymer–synthetic systems, nanomaterial–polymer structures, multi-characterization techniques, polymer blends and composites, polymer gels and polyelectrolytes, and many other interesting aspects of interests to researchers. This book will be valuable to scientists, physicians, pharmacists, engineers, and other specialists in a variety of disciplines, both academic and industrial. *Advances in Computer Methods and Geomechanics* Scientific Publishers This book

expands on the previous volumes with new chapters exploring emerging themes and methodologies in bacterial virus research. The chapters in this book are divided into 4 parts and cover topics such as: iron chloride flocculation of bacteriophages from seawater; encapsulation of Listeria phage A511 by alginate; examining genome termini of bacteriophage through high-throughput sequencing; genome sequencing of dsDNA-containing bacteriophages directly from a single plaque; characterizing bacteriophages by biology, taxonomy, and genome analysis; phage genome annotation using the RAST pipeline; and the use of RP4::mini-Mu for gene transfer. Written in the highly successful Methods in Molecular Biology series format, chapters include introductions to their respective topics, lists of the necessary materials and reagents, step-by-step, readily reproducible laboratory protocols, and tips on troubleshooting and avoiding known pitfalls. Cutting edge and authoritative, Bacteriophages: Methods and Protocols, Volume III is a valuable resource for both established and novice phage scientists. *Physical Gels from*

Biological and Synthetic Polymers
Springer Science & Business Media
The book gathers the peer-reviewed contributions presented at the 3rd International Conference on Application of Superabsorbent Polymers (SAP) and Other New Admixtures towards Smart Concrete, held in Skukuza, South Africa, on November 25-27, 2019. It features papers focusing on the behavior of SAP in concrete (in particular the absorption behavior) as well as the effect of SAP on fresh and hardened concrete properties. It also covers topics such as other modern admixtures, in particular rheology-modifying admixtures, including the recently emerging field of bio- or waste-derived admixtures. The conference builds on the experience and summarizes the activities of the RILEM Technical Committee 260-RSC "Recommendations for Use of Superabsorbent Polymers in Concrete Construction" and addresses other prominent research activities in the field of concrete admixtures.