FINDING CHEMISTRY INFORMATION

Lisa Dunn, Head of Reference
x3687
ldunn@mines.edu
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A Manual for the Chemical Analysis of Metals: (MNL 25)
(ASTM International, 1966)

Acido-Basic Catalysis, Volume 1 - Application to Refining and Petrochemistry
(Editions Technip, 2006)

Acido-Basic Catalysis, Volume 2 - Application to Refining and Petrochemistry
(Editions Technip, 2006)

Acoustic Wave Sensors - Theory, Design, and Physico-Chemical Applications
(Elsevier, 1997)

Adsorption by Carbons - Novel Carbon Adsorbents
Handbook of Biodegradable Polymers (2nd Edition)
By Bastioli, Catia (2014)

This Second Edition is a complete guide to the subject of biodegradable polymers and is ideal for those new to the subject or those wanting to supplement their existing knowledge.

Handbook of Biodegradable Polymers
By Bastioli, Catia (2005)

This book covers the mechanisms of degradation in various environments, by both biological and non-biological means, and the methods for measuring biodegradation.

biodegradable polymer
from Dictionary of Pharmacology and Allied Topics (1998)

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Appendix 13.1 Overview of environmental life cycle comparisons for biodegradable polymers included in this review

Table 13.10 LCA studies for starch polymer pellets and films

<table>
<thead>
<tr>
<th>Biodegradable product</th>
<th>CARBOTECH, 1996 (pellets and films)</th>
<th>Fraunhofer ISI, 1999 (pellets)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reference</td>
<td>LDPE pellets</td>
<td>PE pellets</td>
</tr>
<tr>
<td></td>
<td>LDPE film</td>
<td></td>
</tr>
<tr>
<td>Region/time</td>
<td>Switzerland 1990s</td>
<td>Germany, mid. 1990s</td>
</tr>
<tr>
<td>Exceptions</td>
<td>- Germany for the production of petrochemical plastics</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Partly Europe for electricity generation (for manufacturing processes outside Switzerland)</td>
<td></td>
</tr>
<tr>
<td>System boundaries</td>
<td>All process steps included</td>
<td>All process steps included</td>
</tr>
<tr>
<td>Production</td>
<td>Use of pesticides taken into account</td>
<td>Excluded</td>
</tr>
<tr>
<td>Use phase</td>
<td>Excluded</td>
<td>Excluded</td>
</tr>
<tr>
<td>Waste management</td>
<td>MSWI plants: No credits for co-production electricity/heat</td>
<td>Included</td>
</tr>
</tbody>
</table>
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biodegradable polymers
Sept 2014 -- 6,639 hits
Sept 2015 -- 7,138 hits
1. Preparation of poly-ε-caprolactone nanoparticles by double emulsion solvent evaporation technique for ocular delivery

By Satish, K. V.; Kumar, G. S.; Jayaveera, K. N.

Poly-ε-caprolactone (PCL) is a biocompatible member of the polyester family of biodegradable polymers. PCL has long been a popular choice for drug delivery applications, since it is already FDA-approved for use in the human body as drug delivery device, suture or adhesion barrier. It is being investigated as a scaffold for tissue repair via tissue engineering. Hydrophobic and hydrophilic drugs are encapsulated in PCL particles via single or double-emulsion technique. Briefly, the drug is dissolved with polymer or emulsified with polymer in an org. phase that is then emulsified with the aqu...

2. Evaluation of the effect of reprocessing on the structure and properties of low density polyethylene/thermoplastic starch blends

By Toffenni, John M.; Pluck, Rose H.; Gomes, Rodrigo L.
From Carbohydrate Polymers (2015), Ahead of Print. | Language: English, Database: CAPLUS

The great quantity of synthetic plastic discarded inappropriately in the environment is forcing the search for materials that can be reprocessable and biodegradable. Blends between synthetic polymers and natural and biodegradable polymers can be good candidates of such novel materials because they can combine processability with biodegradability and the use of renewable raw materials. However, traditional polymers usually present high levels of recyclability and use the well-established recycling infrastructure that can eventually be affected by the introduction of systems contg. natural polymers....

3. Performance and environmental impact of biodegradable polymers as agricultural mulching films

By Touchaleaume, Francois; Martin-Clovis, Luis; Angellier-Coussy, Helene; Chevillard, Anne; Cesar, Guy; Gontard, Nathalie; Gastaldi, Emmanuelle
From Chemosphere (2015), Ahead of Print. | Language: English, Database: CAPLUS

In the aim of resolving environmental key issues such as irreversible soil pollution by non-biodegradable and non-
Anatomy of a Citation

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Author(s)
Year
Source—Title of Journal, Conference Proceedings, etc.; volume, issue, doc number, page numbers…
WEB OF SCIENCE
biodegradable polymers
Biodegradable block copolymers as injectable drug-delivery systems

By: Jeong, B; Bae, YH; Lee, DS; Kim, SW

NATURE
Volume: 388 Issue: 6645 Pages: 860-862
Published: AUG 28 1997

Abstract
Polymers that display a physicochemical response to stimuli are widely explored as potential drug-delivery systems (1-4). Stimuli studied to date include chemical substances and changes in temperature, pH and electric field. Homopolymers or copolymers of N-isopropylacrylamide (5,6) and poly(ethylene oxide)-poly(propylene oxide)-poly(ethylene oxide) (known as poloxamers) (7) are typical examples of thermosensitive polymers, but their use in drug delivery is problematic because they are toxic and nonbiodegradable. Biodegradable polymers used for drug delivery to date have mostly been in the form of injectable microspheres or implant systems, which require complicated fabrication processes using organic solvents (8). Such systems have the disadvantage that the use of organic solvents can cause denaturation when protein drugs are to be encapsulated. Furthermore, the solid form requires surgical insertion, which often results in tissue irritation and damage. Here we report the synthesis of a thermosensitive, biodegradable hydrogel consisting of blocks of poly(ethylene oxide) and poly(L-lactic acid). Aqueous solutions of these copolymers exhibit temperature-dependent reversible gel-sol transitions. The hydrogel can be loaded with bioactive molecules in an aqueous phase at an elevated

Sept 2014 – Cited 1,141 times
Sept 2015 – Cited 1,246 times
Basic Search

knauss d*
1. Poly(2,6-dimethyl-1,4-phenylene oxide)-b-poly(vinylbenzyltrimethylammonium) Diblock Copolymers for Highly Conductive Anion Exchange Membranes
   By: Yang, Yating; Knauß, Daniel M.
   MACROMOLECULES Volume: 48 Issue: 13 Pages: 4471-4480 Published: JUL 14 2015

2. Durability and Performance of Polystyrene-b-Poly(vinylbenzyl trimethylammonium) Diblock Copolymer and Equivalent Blend Anion Exchange Membranes
   By: Vandiver, Melissa A.; Caire, Benjamin R.; Poskin, Zach; et al.
   JOURNAL OF APPLIED POLYMER SCIENCE Volume: 132 Issue: 10 Article Number: 41596 Published: MAR 10 2015

3. Poly(2,6-dimethyl-1,4-phenylene oxide) Blended with Poly(vinylbenzyl chloride)-b-polystyrene for the Formation of Anion Exchange Membranes
   By: Li, Yifan; Jackson, Aaron C.; Beyer, Frederick L.; et al.
   MACROMOLECULES Volume: 47 Issue: 19 Pages: 6757-6767 Published: OCT 14 2014

4. Robust and dynamic polymer membranes for anion transport
   By: Herrin, Andrew; Knauß, Daniel; Liberatore, Matthew; et al.
   Conference: 248th National Meeting of the American Chemical Society (ACS)
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1. CHARM HADRON PROPERTIES IN 400 GEV/C PP INTERACTIONS
By: AGUILAR-BENITEZ, M. ALLISON, WM; BAILLY, JL, et al.
ZEITSCHRIFT FUR PHYSIK C-PARTICLES AND FIELDS Volume: 40 Issue: 3 Pages: 321-345
Published: 1988
biodegradable polymers
Biodegradable Polymers
Roy, Ipsita

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Available from 1996 volume: 65 issue: 1
Biodegradable Polymers

Ipsita Roy

This ‘In Focus’ of the Journal of Chemical Technology & Biotechnology brings together selected papers in the topical area of Biodegradable Polymers. Biodegradable Polymers is an emerging area of science crucial in the current situation with depleting fossil residues and increasing environmental burden caused by non-degradable polymers. These polymers are set to solve both these problems by providing a renewable resource for degradable green polymers with minimal environmental repercussions. In addition, due to their biodegradability and biocompatibility, some of these polymers are also useful for new emerging medical applications. These applications have also been discussed in some of the articles presented in this ‘In Focus’.

The first review article by Akaroyne et al., discusses the new family of biodegradable polymers, polyhydroxyalkanoates, reviewing in detail their properties, applications and most importantly strategies for reducing the cost of production of these polymers. The strategies reviewed include different types of fermentations and use of various waste materials. This is followed by three mini reviews. The mini review written by Grabow et al. covers the highly relevant area of degradable stents for vascular regimens.

This ‘In Focus’ concludes with two technical notes. The first by Wang et al. describes a novel method of transforming biodegradable polymer producing bacteria with either plasmid DNA or linear DNA. This method can be used to understand the function of various genes involved in polymer biosynthesis, a way forward towards production of novel biodegradable polymers. The final technical note by Sato et al. is about a unique technique to develop an ultra-thin hydrophobic layer on highly oriented pyrolytic graphite, a hydrophobic surface, using two different classes of polyhydroxyalkanoate synthases. Such a controlled method of surface functionalisation can have varied applications.

I wish to thank Dr Peter Hambleton, Biotechnology Editor of the Journal, for his invaluable assistance in preparing this ‘In Focus’. Special thanks are due to Peter Creason, Assistant Editor, who put everything together. I am also indebted to all the reviewers who helped in reviewing the articles for this ‘In Focus’ on ‘Biodegradable Polymers’.

Ipsita Roy
University of Westminster, UK
GOOGLE SCHOLAR
Stand on the shoulders of giants
Biofibres, biodegradable polymers and biocomposites: an overview
AK Mohanty, M Misra... - ... materials and Engineering, 2000 - Wiley Online Library
Abstract Recently the critical discussion about the preservation of natural resources and recycling has led to the renewed interest concerning biomaterials with the focus on renewable raw materials. Because of increasing environmental consciousness and ...
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Placebo-controlled trial of safety and efficacy of intraoperative controlled delivery by biodegradable polymers of chemotherapy for recurrent gliomas
H Brem, S Piantadosi, PC Burger, M Walker, R Selker... - The Lancet, 1995 - Elsevier
Chemotherapy for brain tumours has been limited because of difficulty in achieving adequate exposure to the tumour without systemic toxicity. We have developed a method for local sustained release of chemotherapeutic agents by their incorporation into ...
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A review of biodegradable polymers: uses, current developments in the synthesis and characterization of biodegradable polyesters, blends of biodegradable polymers ...
H Amin, A Amin, B Tighe - Polymer international, 1996 - Wiley Online Library
Abstract This review considers the uses of biodegradable polymers in terms of their relevance within current plastic waste management of packaging materials, biomedical applications and other uses; research papers and patents are catalogued. The chemical ...
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Synthetic biodegradable polymers as orthopedic devices
JC Middleton, AJ Tipton - Biomaterials, 2000 - Elsevier
Polymer scientists, working closely with those in the device and medical fields, have made tremendous advances over the past 30 years in the use of synthetic materials in the body. In this article we will focus on properties of biodegradable polymers which make them ideally ...
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Biodegradable polymers for the environment
RA Gross, B Kalra - Science, 2002 - sciencemag.org
Abstract Biodegradable polymers are designed to degrade upon disposal by the action of
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