

Volume 105, 25 May 2014

ISSN 0144-8617



Editors

J.F. Kennedy

J.R. Mitchell

Associate Editors

R.A.A. Muzzarelli

M.A. Coimbra

K.J. Edgar

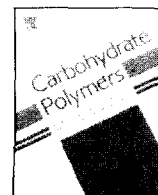
R.C. SUN

# Carbohydrate Polymers

SCIENTIFIC AND TECHNOLOGICAL ASPECTS OF  
INDUSTRIALLY IMPORTANT POLYSACCHARIDES

Available online at [www.sciencedirect.com](http://www.sciencedirect.com)

**ScienceDirect**



Vol. 105, 25 May 2014

## CONTENTS

(Abstracted/indexed in: BIOSIS (Biological Abstracts); Chemical Abstracts; Current Contents/Agriculture, Biology, Environmental Sciences; Engineering Index; Food Science and Technology Abstracts; Polymer Contents; Process and Chemical Engineering; Science Citation Index; SciSearch; Theoretical Chemical Engineering). Also covered in the abstract and citation database SCOPUS®. Full text available on ScienceDirect®.

- 1 Synthesis of ZnO/Zn nano photocatalyst using modified polysaccharides for photodegradation of dyes  
S.-T. LIN, M. THIRUMAVALAVAN, T.-Y. JIANG, J.-F. LEE (Taiwan)
- 10 Physical properties of inulin and inulin-orange juice: Physical characterization and technological application  
M.Z. SAAVEDRA-LEOS, C. LEYVA-PORRAS, E. MARTÍNEZ-GUERRA, S.A. PÉREZ-GARCÍA, J.A. AGUILAR-MARTÍNEZ, C. ÁLVAREZ-SALAS (Mexico)
- 20 Inhibition of inflammatory injury by polysaccharides from *Bupleurum chinense* through antagonizing P-selectin  
H. TONG, D. TIAN, T. LI, B. WANG, G. JIANG, X. SUN (China)
- 26 Isolation, characterization and antioxidant activity of polysaccharide from *Schisandra sphenanthera*  
T. ZHAO, G. MAO, W. FENG, R. MAO, X. GU, T. LI, Q. LI, Y. BAO, L. YANG, X. WU (China)
- 34 Physicochemical properties of starches and proteins in alkali-treated mungbean and cassava starch granules  
K. ISRAKARN, N. NA NAKORNPANOM, P. HONGSPRABHAS (Thailand)
- 41 Mechanical properties, biocompatibility, and biodegradation of cross-linked cellulose acetate-reinforced polyester composites  
C.-S. WU (ROC)
- 49 Pullulan-complexed  $\alpha$ -amylase and glucosidase in alginate beads: Enhanced entrapment and stability  
S.B. JADHAV, R.S. SINGHAL (India)
- 57 Application of maltodextrin and gum Arabic in microencapsulation of saffron petal's anthocyanins and evaluating their storage stability and color  
K. MAHDAVEE KHAZAEI, S.M. JAFARI, M. GHORBANI, A. HEMMATI KAKHKI (Iran)
- 63 In situ cross-linked polysaccharide hydrogel as extracellular matrix mimics for antibiotics delivery  
Y. ZHAO, X. ZHANG, Y. WANG, Z. WU, J. AN, Z. LU, L. MEI, C. LI (China)
- 70 Synthesis and properties of PDMS/montmorillonite-cetyltrimethylammonium bromide-heparin films  
NA MENG, N.-L. ZHOU (China)
- 75 Study of production and pyrolysis characteristics of sweet orange flavor- $\beta$ -cyclodextrin inclusion complex  
G. ZHU, Z. XIAO, R. ZHOU, Y. ZHU (PR China)
- 81 Non-formaldehyde, crease resistant agent for cotton fabrics based on an organic-inorganic hybrid material  
C. SCHRAMM, B. RINDERER, R. TESSADRI (Austria)
- 90 Thermoplasticization of euglenoid  $\beta$ -1,3-glucans by mixed esterification  
M. SHIBAKAMI, G. TSUBOUCHI, M. HAYASHI (Japan)
- 97 Carrageenan: A natural seaweed polysaccharide and its applications  
V.D. PRAJAPATI, P.M. MAHERIYA, G.K. JANI, H.K. SOLANKI (India)
- 113 *Sargassum fusiforme* polysaccharide activates nuclear factor kappa-B (NF- $\kappa$ B) and induces cytokine production via Toll-like receptors  
X. CHEN, G. YU, S. FAN, M. BIAN, H. MA, J. LU, L. JIN (China)
- 121 Characterization and antioxidant activities of degraded polysaccharides from *Poria cocos sclerotium*  
J. TANG, J. NIE, D. LI, W. ZHU, S. ZHANG, F. MA, Q. SUN, J. SONG, Y. ZHENG, P. CHEN (China)
- 127 Characterization of a water-soluble polysaccharide from *Boletus edulis* and its antitumor and immunomodulatory activities on renal cancer in mice  
D. WANG, S.-Q. SUN, W.-Z. WU, S.-L. YANG, J.-M. TAN (China)
- 135 Synthesis and characterization of a novel semi-IPN hydrogel based on Salecan and poly(N,N-dimethylacrylamide-co-2-hydroxyethyl methacrylate)  
X. HU, L. FENG, W. WEI, A. XIE, S. WANG, J. ZHANG, W. DONG (China)
- 145 Effects of light wavelengths on extracellular and capsular polysaccharide production by *Nostoc flagelliforme*  
P.-P. HAN, Y. SUN, S.-R. JIA, C. ZHONG, Z.-L. TAN (PR China)
- 152 Structure of a homofructosan from *Saussurea costus* and anti-complementary activity of its sulfated derivatives  
H. FAN, F. LIU (China), S.W.A. BLIGH (UK), S. SHI, S. WANG (China)

- 161 Synthesis of curdian derivatives regioselectively modified at C-6: O-(N)-Acyated 6-amino-6-deoxycurdian  
R. ZHANG, K.J. EDGAR (USA)
- 169 Purification, characterization and promoting effect on wound healing of an exopolysaccharide from *Lachnum* YM405  
Y. HE, M. YE, Z. DU, H. WANG, Y. WU, L. YANG (China)
- 177 Influence of polysaccharides on the rheology and stabilization of  $\alpha$ -pinene emulsions  
M<sup>a</sup>.C. GARCÍA, M<sup>a</sup>.C. ALFARO, N. CALERO, J. MUÑOZ (Spain)
- 184 Superporous thermo-responsive hydrogels by combination of cellulose fibers and aligned micropores  
K.S. HALAKE, J. LEE (South Korea)
- 193 Optimization of the preparation of pectin from *Aloe* using a Box-Behnken design  
L. GENG, W. ZHOU, X. QU, W. CHEN, Y. LI, C. LIU, J. SUN, X. YU, H. WANG, Z. ZHANG, J. LI, L. WANG (China)
- 200 Optimization of medium composition for exopolysaccharide production by *Phellinus nigricans*  
Z. WANG, Y. QUAN, F. ZHOU (China)
- 207 Thermoset nanocomposites from two-component waterborne polyurethanes and cellulose whiskers  
G.-M. WU, J. CHEN, S.-P. HUO, G.-F. LIU, Z.-W. KONG (China)
- 214 Investigation of the scaling law on gelation of oppositely charged nanocrystalline cellulose and polyelectrolyte  
A. LU (CANADA AND CHINA), Y. WANG, Y. BOLUK (Canada)
- 222 Optimization of physical and mechanical properties for chitosan-nanocellulose biocomposites  
D. DEHNAD, Z. EMAM-DJOMEH, H. MIRZAEI, S.-M. JAFARI, S. DADASHI (Iran)
- 229 Variational iteration method for Bratu-like equation arising in electrospinning  
J.-H. HE, H.-Y. KONG, R.-X. CHEN, M.-S. HU, Q.-L. CHEN (China)
- 231 Study on the antithrombotic activity of *Umbilicaria esculenta* polysaccharide  
Y. WANG, J. SHAO, S. YAO, S. ZHANG, J. YAN, H. WANG, Y. CHEN (China)
- 237 Phase diagram, solubility limit and hydrodynamic properties of cellulose in binary solvents with ionic liquid  
K.A. LE, C. RUDAZ, T. BUDTOVA (France)
- 244 Glass transitions and physical aging of cassava starch - Corn oil blends  
A. PÉREZ, A.J. SANDOVAL, A. COVA (Venezuela), A.J. MÜLLER (Venezuela and Spain)
- 253 Transglutaminase-catalyzed grafting collagen on chitosan and its characterization  
L. FAN, H. WU, X. ZHOU, M. PENG, J. TONG, W. XIE, S. LIU (China)
- 260 Chemical characterization, antioxidant and antitumor activity of sulfated polysaccharide from *Sargassum homeri*  
P. SHAO, X. CHEN, P. SUN (PR China)
- 270 Synthesis of poly(2-(2-methoxyethoxy)ethyl methacrylate) hydrogel using starch-based nanosphere cross-linkers  
C. LIU, Y. TAN, K. XU, Y. LI, C. LU, P. WANG (PR China)
- 276 Structure and biological activities of a pectic polysaccharide from *Mosla chinensis* Maxim. cv. Jiangxiangru  
J.-E. LI (China and Canada), S.W. CUI (Canada), S.-P. NIE, M.-Y. XIE (China)
- 285 Hybrid HPMC nanocomposites containing bacterial cellulose nanocrystals and silver nanoparticles  
J. GEORGE, R. KUMAR, V.A. SAJEEVKUMAR, K.V. RAMANA, R. RAJAMANICKAM, V. ABHISHEK, S. NADANASABAPATHY, SIDDARAMAIAH (India)
- 293 Extraction optimization and antinociceptive activity of (1→3)- $\beta$ -D-glucan from *Rhodotorula mucilaginosa*  
G.L. VALASQUES JUNIOR, F.O. DE LIMA, E.F. BOFFO, J.D.G. SANTOS, B.C. DA SILVA, S.A. DE ASSIS (Brazil)
- 300 Properties and catalytic activity of magnetic and acidic ionic liquids: Experimental and molecular simulation  
C. ZHOU (China and Japan), X. YU, H. MA, X. HUANG, H. ZHANG, J. JIN (China)
- 308 Chain conformation and anti-tumor activity of derivatives of polysaccharide from *Rhizoma Panacis Japonici*  
C. CHEN, W. WU, X. XU, L. ZHANG, Y. LIU, K. WANG (China)
- 317 Extraction by three processes of arabinoxylans from wheat bran and characterization of the fractions obtained  
M. AGUEDO, C. FOUGNIES, M. DERMIENCE, A. RICHEL (Belgium)
- 325 Galactomannan with novel structure produced by the coral endophytic fungus *Aspergillus ochraceus*  
S. GUO, W. MAO, M. YAN, C. ZHAO, N. LI, J. SHAN, C. LIN, X. LIU, T. GUO, T. GUO, S. WANG (People's Republic of China)
- 334 Characterization of an antiproliferative exopolysaccharide (LHEPS-2) from *Lactobacillus helveticus* MB2-1  
W. LI, J. JI, W. TANG, X. RUI, X. CHEN, M. JIANG, M. DONG (PR China)
- 341 Preparation, structure, and digestibility of crystalline A- and B-type aggregates from debranched waxy starches  
L. CAI, Y.-C. SHI (USA)
- 351 Preparation and characteristics of sodium alginate/Na<sup>+</sup>rectorite-g-itaconic acid/acrylamide hydrogel films  
L. YANG, X. MA, N. GUO, Y. ZHANG (PR China)