

CONTENTS OF VOLUME 68

Issue 1

Papers

- 1 Comprehensive characterisation of cellulose- and lignocellulose-degradation products in aged papers: Capillary zone electrophoresis of low-molar mass organic acids, carbohydrates, and aromatic lignin derivatives
A.-L. DUPONT, C. EGASSE, A. MORIN, F. VASSEUR (France)
- 17 Preparation of sugarcane bagasse cellulosic phthalate using an ionic liquid as reaction medium
C. F. LIU, R. C. SUN, A. P. ZHANG, J. L. REN (People's Republic of China)
- 26 Synthesis of new spherical and hemispherical oligosaccharides with polylysine core scaffold
S. HAN, H. BAIGUDE, K. HATTORI, T. YOSHIDA, T. URYU (Japan)
- 35 The conversion from cellulose I to cellulose II in NaOH mercerization performed in alcohol–water systems: An X-ray powder diffraction study
P. MANSIKKAMÄKI, M. LAHTINEN, K. RISSANEN (Finland)
- 44 Surface-charged chitosan: Preparation and protein adsorption
V. P. HOVEN, V. TANGPASUTHADOL, Y. ANGKITPAIBOON, N. VALLAPA, S. KIATKAMJORNWONG (Thailand)
- 54 Antioxidant activities of different fractions of polysaccharide purified from *Gynostemma pentaphyllum Makino*
Z. WANG, D. LUO (PR China)
- 59 Examination of the validity of the Flory–Huggins solution theory in terms of miscibility in dextran systems
D. Z. ICOZ, J. L. KOKINI (USA)
- 68 Probing the boundaries of miscibility in model carbohydrates consisting of chemically derivatized dextrans using DSC and FTIR spectroscopy
D. Z. ICOZ, J. L. KOKINI (USA)
- 77 Fractionation of extracted Madagascan *Gracilaria corticata* polysaccharides: Structure and properties
H. ANDRIAMANANTOANINA, G. CHAMBAT, M. RINAUDO (Madagascar, France)
- 89 Synthesis and characterization of novel glycopolymers based on ethyl α -hydroxymethylacrylate
R. CUERVO-RODRÍGUEZ, V. BORDEGÉ, M. FERNÁNDEZ-GARCÍA (Spain)
- 95 Polyacrylonitrile-grafted Okra mucilage: A renewable reservoir to polymeric materials
A. MISHRA, S. PAL (India)
- 101 Enzymatic depolymerisation of cellulose
H. PALA, M. MOTA, F. M. GAMA (Portugal)
- 109 Effect of crosslinking monomers on the physico-mechanical and degradation properties of photografted chitosan film
P. HAQUE, A. I. MUSTAFA, M. A. KHAN (Bangladesh)
- 116 Effect of oversulfation on the chemical and biological properties of chondroitin-6-sulfate
A. S. AMARASEKARA, G. OPOKU, X. QIU, V. DOCTOR (USA)

- 122 Effect of *N*-acylation on structure and properties of chitosan fibers
C. Y. CHOI, S. B. KIM, P. K. PAK, D. I. YOO, Y. S. CHUNG (Republic of Korea)
- 128 Effect of mechanical activation on physico-chemical properties and structure of cassava starch
Z.-Q. HUANG, J.-P. LU, X.-H. LI, Z.-F. TONG (China)
- 136 The influence of *O*-formylation on the scale of starch macromolecules association in DMSO and water
T. DIVERS, E. BALNOIS, J.-F. FELLER, J. SPEVACEK, Y. GROHENS (France, Czech Republic)
- 146 Physical properties of starch nanocrystal-reinforced pullulan films
E. KRISTO, C. G. BILIADERIS (Greece)
- 159 New cellulose derivatives composites for electro-optical sensors
I. COSTA, D. FILIP, J. L. FIGUEIRINHAS, M. H. GODINHO (Portugal)
- 166 *In vitro* biocompatibility evaluations of hexanoyl chitosan film
A. NEAMNARK, N. SANCHAVANAKIT, P. PAVASANT, T. BUNAPRASERT, P. SUPAPHOL, R. RUJIRAVANIT (Thailand)
- 173 The role played by the interactions of small molecules with chitosan and their transition temperatures.
Glass-forming liquids: 1,2,3-Propantriol (glycerol)
I. QUIJADA-GARRIDO, V. IGLESIAS-GONZÁLEZ, J. M. MAZÓN-ARECHEDERRA, J. M. BARRALES-RIENDA (Spain)

Short Communications

- 187 Efficient activation of carboxyl polysaccharides for the preparation of conjugates
P. FARKAŠ, S. BYSTRICKÝ (Slovak Republic)
- 191 Cell wall mannan of human pathogen *Candida dubliniensis*
I. LIŽIČÁROVÁ, M. MATULOVÁ, E. MACHOVÁ, P. CAPEK (Slovak Republic)
- 196 Calendar
- 197 Bibliography

Issue 2

Editorial

- 203 40th anniversary of CERMAV
M. RINAUDO, S. PÉREZ (France)

Papers

- 206 Non-starch polysaccharides from different developmental stages of *Pleurotus tuber-regium* inhibited the growth of human acute promyelocytic leukemia HL-60 cells by cell-cycle arrest and/or apoptotic induction
S.-M. WONG, K.-K. WONG, L. C.-M. CHIU, P. C.-K. CHEUNG (PR China)
- 218 Amphiphilic cholesteryl grafted sodium alginate derivative: Synthesis and self-assembly in aqueous solution
L. YANG, B. ZHANG, L. WEN, Q. LIANG, L.-M. ZHANG (PR China)
- 226 Influence of unmodified and modified cycloheptaamylose (β -cyclodextrin) on transition parameters of amylose–lipid complex and functional properties of starch
A. GUNARATNE, H. CORKE (Hong Kong)
- 235 Studying cellulose fiber structure by SEM, XRD, NMR and acid hydrolysis
H. ZHAO, J. H. KWAK, Z. CONRAD ZHANG, H. M. BROWN, B. W. AREY, J. E. HOLLADAY (USA)
- 242 Modification of chitosan by the Maillard reaction using cellulose model compounds
K. UMEMURA, S. KAWAI (Japan)

- 249 Starch in rubbery and glassy states by FTIR spectroscopy
I. CAPRON, P. ROBERT, P. COLONNA, M. BROGLY, V. PLANCHOT (France)
- 260 Conjugation of oligosaccharides to chondroitin oligomer and γ -cyclodextrin
K. WEIKKOLAINEN, O. AITIO, J. NATUNEN, J. HELIN (Finland)
- 270 Behavior of the rheological parameters of exopolysaccharides synthesized by three lactic acid bacteria
N. CANQUIL, M. VILLARROEL, S. BRAVO, M. RUBILAR, C. SHENE (Chile)
- 280 Nanoscale structures of dextran esters
S. HORNIG, T. HEINZE (Germany)
- 287 Recovery of chitosan from aqueous acidic solutions by salting-out. Part 2. Use of salts of organic acids
G. DUPUIS, J.-G. LEHOUX (Canada)
- 295 Recovery of chitosan from aqueous acidic solutions by salting-out: Part 1. Use of inorganic salts
J.-G. LEHOUX, G. DUPUIS (Canada)
- 305 Effect of hydroxypropylation and alkaline treatment in hydroxypropylation on some structural and physicochemical properties of heat-moisture treated wheat, potato and waxy maize starches
A. GUNARATNE, H. CORKE (Hong Kong)
- 314 Influences of granule-associated proteins on physicochemical properties of mungbean and cassava starches
K. ISRAKARN, P. HONGSPRABHAS, P. HONGSPRABHAS (Thailand)
- 323 Structure and bioactivities of a galactose rich extracellular polysaccharide from submergedly cultured *Ganoderma lucidum*
Y.-Q. LI, L. FANG, K.-C. ZHANG (PR China)
- 329 X-ray tomography study of the cellular structure of extruded starches and its relations with expansion phenomenon and foam mechanical properties
P. BABIN, G. DELLA VALLE, R. DENDIEVEL, D. LOURDIN, L. SALVO (France)
- 341 Effect of pectin-based edible emulsion coating on changes in quality of avocado exposed to *Lasiodiplodia theobromae* infection
N. MAFTOONAZAD, H. S. RAMASWAMY, M. MOALEMIYAN, A. C. KUSHALAPPA (Canada)
- 350 Preparation of arabinoxylobiose from rye xylan using family 10 *Aspergillus aculeatus* endo-1,4- β -D-xylanase
H. RANTANEN, L. VIRKKI, P. TUOMAINEN, M. KABEL, H. SCHOLS, M. TENKANEN (Finland, The Netherlands)
- 360 The study of starch nano-unit chains in the gelatinization process
L. PENG, L. ZHONGDONG, J. F. KENNEDY (PR China, UK)
- 367 Synthesis and characterization of chitosan-*g*-poly(acrylic acid)/attapulgit superabsorbent composites
J. ZHANG, Q. WANG, A. WANG (PR China)

Correspondence

- 375 Letter to Editor of “Carbohydrate Polymers” – Comments on a recent paper by Wang and Li
S. B. ROSS-MURPHY (UK)

Book Reviews

- 377 Advances in Chromatography
J. F. KENNEDY, A. KACZMAREK (UK)
- 378 Biodegradable And Sustainable Fibres
J. F. KENNEDY, Z. PARVEEN (UK)
- 379 Calendar
- 380 Bibliography

Issue 3**Papers**

- 387 Effect of high pressure on thermal, structural and osmotic properties of waxy maize and Hylon VII starch blends
W. BŁASZCZAK, J. FORMAL, V. I. KISELEVA, V. P. YURYEV, A. I. SERGEEV, J. SADOWSKA (Poland, Russia)
- 397 Pasting properties and (chemical) fine structure of acetylated yellow pea starch is affected by acetylation reagent type and granule size
J. HUANG, H. A. SCHOLS, Z. JIN, E. SULMANN, A. G. J. VORAGEN (People's Republic of China, The Netherlands)
- 407 Polysaccharides from *Caulerpa racemosa*: Purification and structural features
K. CHATTOPADHYAY, U. ADHIKARI, P. LEROUGE, B. RAY (India, France)
- 416 A strategy to introduce the pH sensitivity to temperature sensitive PNIPAAm hydrogels without weakening the thermosensitivity
X.-D. XU, X.-Z. ZHANG, S.-X. CHENG, R.-X. ZHUO, J. F. KENNEDY (PR China, UK)
- 424 Photocuring of cinnamic carbohydrate esters: Controlling the reaction by monocinnamoylated derivatives
F. ROJAS-MELGAREJO, M. JOSÉ SOLER-ROMERA, P. A. GARCÍA-RUIZ (Spain)
- 433 Composition of clusters and their arrangement in potato amylopectin
E. BERTOFT (Finland)
- 447 Effect of octenylsuccinylation on physicochemical and functional properties of waxy maize and amaranth starches
R. BHOSALE, R. SINGHAL (India)
- 457 O-Succinyl derivative of ι-carrageenan fragments: Synthesis and characterization
Y.-P. JIANG, X.-K. GUO, Y. CHEN (People's Republic of China)
- 465 Potential sources of error in the calorimetric evaluation of amylose content of starches
J. A. CREEK, A. BENESI, J. RUNT, G. R. ZIEGLER (USA)
- 472 A study on the supramolecular structure of inclusion complex of β-cyclodextrin with prazosin hydrochloride
L. LIU, S. ZHU (China)
- 477 Calculation of Mark–Houwink–Sakurada (MHS) equation viscometric constants for chitosan in any solvent–temperature system using experimental reported viscometric constants data
M. R. KASAAI (Iran)
- 489 Determination of lignin content in high-yield kraft pulps using photoacoustic rapid scan Fourier transform infrared spectroscopy
V. Q. DANG, N. K. BHARDWAJ, V. HOANG, K. L. NGUYEN (Australia)
- 495 Phase transition of starch granules observed by microscope under shearless and shear conditions
P. CHEN, L. YU, T. KEALY, L. CHEN, L. LI (PR China, Australia)
- 502 Physicochemical characterization of grifolan: Thixotropic properties and complex formation with Congo Red
C.-F. MAO, M.-C. HSU, W.-H. HWANG (Taiwan)
- 511 Analysis of natural carbohydrate biopolymer-high molecular chitosan and carboxymethyl chitosan by capillary zone electrophoresis
X. FU, L. HUANG, M. ZHAI, W. LI, H. LIU (China)
- 517 Acid gelation of gellan: Effect of final pH and heat treatment conditions
F. YAMAMOTO, R. L. CUNHA (Brazil)
- 528 Prediction of permeation fluxes of small volatile components through starch-based films
E. HABEYCH, A. J. VAN DER GOOT, R. BOOM (The Netherlands)
- 537 Blocked isocyanates as coupling agents for cellulose-based composites
J. GIRONÈS, M. T. B. PIMENTA, F. VILASECA, A. J. F. DE CARVALHO, P. MUTJÉ, A. A. S. CURVELO (Spain, Brazil)

- 544 Synthesis, characterization and drug delivery behaviors of new PCP polymeric micelles
D.-Z. LIU, J.-H. HSIEH, X.-C. FAN, J.-D. YANG, T.-W. CHUNG (Taiwan)
- 555 Iodine catalyzed esterification of cellulose using reduced levels of solvent
A. BISWAS, G. SELLING, M. APPELL, K. K. WOODS, J. L. WILLETT, C. M. BUCHANAN (USA)
- 561 The effect of cross-linking of chitosan microspheres with genipin on protein release
Y. YUAN, B. M. CHESNUTT, G. UTTURKAR, W. O. HAGGARD, Y. YANG, J. L. ONG, J. D. BUMGARDNER (USA)
- 568 Recrystallization of waxy maize starch during manufacturing of starch microspheres for drug delivery: Optimization by experimental design
L. ELFSTRAND, A.-C. ELIASSON, M. JÖNSSON, M. RESLOW, B. THELIN, M. WAHLGREN (Sweden, Denmark)
- 577 Molar mass and rheological characterisation of an exopolysaccharide from *Pediococcus damnosus* 2.6
A. M. LAMBO-FODJE, M. LEEMAN, K.-G. WAHLUND, M. NYMAN, R. ÖSTE, H. LARSSON (Sweden)

Review

- 587 Non-digestible oligosaccharides: A review
S. I. MUSSATTO, I. M. MANCILHA (Brazil)

Short Communications

- 598 Hydration energy of the 1,4-bonds of chitosan and their breakdown by ultrasonic treatment
H. LIU, Y.-M. DU, J. F. KENNEDY (China, UK)
- 601 Isolation and structural characterization of hemicelluloses from palm of *Phoenix dactylifera* L.
A. BENDAHO, A. DUFRESNE, H. KADDAMI, Y. HABIBI (France)

Book Reviews

- 609 An Introduction to Medicinal Chemistry
J. F. KENNEDY, V. PELL (UK)
- 609 Biophysical and Structural Aspects of Bioenergetics
J. F. KENNEDY, V. PELL (UK)
- 611 Bibliography
- 612 Calendar

Issue 4

Papers

- 617 Development of chitosan sponges for buccal administration of insulin
A. PORTERO, D. TEIJEIRO-OSORIO, M. J. ALONSO, C. REMUÑÁN-LÓPEZ (Spain)
- 626 Synthesis and characterization of hydroxypropyl methylcellulose and ethyl acrylate graft copolymers
L. WANG, W. DONG, Y. XU (China)
- 637 On the effect of surface active agents and their structure on the temperature-induced changes of normal and waxy wheat starch in aqueous suspension. Part II: A confocal laser scanning microscopy study
I. MIRA, V. KURTIS VILLWOCK, K. PERSSON (Sweden)
- 647 The combined effects of black oxidising table olive process and ripening on the cell wall polysaccharides of olive pulp
I. MAFRA, A. S. BARROS, M. A. COIMBRA (Portugal)

- 658 Application of xyloglucan to improve the gluten membrane on breadmaking
T. MAEDA, H. YAMASHITA, N. MORITA (Japan)
- 665 On the effect of surface active agents and their structure on the temperature-induced changes of normal and waxy wheat starch in aqueous suspension. Part I. Pasting and calorimetric studies
I. MIRA, K. PERSSON, V. K. VILLWOCK (Sweden)
- 679 Physical, chemical and microscopic characterization of a new starch from chayote (*Sechium edule*) tuber and its comparison with potato and maize starches
J. JIMÉNEZ-HERNÁNDEZ, J. A. SALAZAR-MONTOYA, E. G. RAMOS-RAMÍREZ (Mexico)
- 687 Anticancer activities of a chemically sulfated polysaccharide obtained from *Grifola frondosa* and its combination with 5-Fluorouracil against human gastric carcinoma cells
B. J. SHI, X.-H. NIE, L.-Z. CHEN, Y.-L. LIU, W.-Y. TAO (China)
- 693 O-Carboxymethylchitosan-based novel gatifloxacin delivery system
A. ZHU, W. JIN, L. YUAN, G. YANG, H. YU, H. WU (PR China)
- 701 AFM studies on gelation mechanism of xanthan gum hydrogels
M. IJIMA, M. SHINOZAKI, T. HATAKEYAMA, M. TAKAHASHI, H. HATAKEYAMA (Japan)
- 708 Rheological study of interactions between non-ionic surfactants and polysaccharide thickeners used in textile printing
R. FIJAN, S. OSTAR-TURK, R. LAPASIN (Slovenia, Italy)
- 718 Enhanced film forming and film properties of amylopectin using micro-fibrillated cellulose
A. LÓPEZ-RUBIO, J. M. LAGARON, M. ANKERFORS, T. LINDSTRÖM, D. NORDQVIST, A. MATTOZZI, M. S. HEDENQVIST (Spain, Sweden)
- 728 Molecular structure and dielectric properties studies of chitin and its treated by acid, base and hypochlorite
R. SEOUDI, A. M. A. NADA (Egypt)
- 734 Synthesis and aggregates of cellulose-based hydrophobically associating polymer
Y. WEI, F. CHENG (PR China)
- 740 Preparation and physicochemical properties of a novel hydroxyapatite/chitosan–silk fibroin composite
L. WANG, C. LI (PR China)
- 746 Production of chitin from red crab shell waste by successive fermentation with *Lactobacillus paracasei* KCTC-3074 and *Serratia marcescens* FS-3
W. J. JUNG, G. H. JO, J. H. KUK, Y. J. KIM, K. T. OH, R. D. PARK (Republic of Korea)
- 751 Optimization of conditions for production of sago starch-based foam
B. PIMPA, K. MUHAMMAD, Z. GHAZALI, K. HASHIM, M. A. HASSAN, D. M. HASHIM (Thailand, Malaysia)
- 761 Study on the heterogeneous degradation of chitosan with hydrogen peroxide under the catalysis of phosphotungstic acid
Q. Z. HUANG, S. M. WANG, J. F. HUANG, L. H. ZHUO, Y. C. GUO (China)
- 766 Fabrication and structural characterization of the Langmuir–Blodgett films from a new chitosan derivative containing cinnamate chromophores
Y. WU, K. HISADA, S. MAEDA, T. SASAKI, K. SAKURAI (Japan)
- 773 Synthesis and characterization of starch-modified polyurethane
M. BARIKANI, M. MOHAMMADI (Islamic Republic of Iran)
- 781 A series of novel chitosan derivatives: Synthesis, characterization and micellar solubilization of paclitaxel
Z. YAO, C. ZHANG, Q. PING, L. YU (PR China, USA)

Short Communication

- 793 Starch phosphorus content in potato (*Solanum tuberosum* L.) cultivars and its effect on other starch properties
T. NODA, N. S. KOTTEARACHCHI, S. TSUDA, M. MORI, S. TAKIGAWA, C. MATSUURA-ENDO, S.-J. KIM, N. HASHIMOTO, H. YAMAUCHI (Japan)

Review

- 797 Introduction to ion trap mass spectrometry: Application to the structural characterization of plant oligosaccharides
L. E. MATAMOROS FERNÁNDEZ (Canada)

Book Reviews

- 808 Gums and stabilizers for the food industry 13
J. F. KENNEDY, K. BUNKO (UK)
- 809 Natural fibers, biopolymers, and biocomposites
K. BUNKO, J. F. KENNEDY (UK)
- 810 Calendar