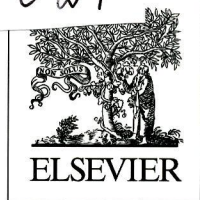


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# Carbohydrate Polymers

SCIENTIFIC AND TECHNOLOGICAL ASPECTS OF  
INDUSTRIALLY IMPORTANT POLYSACCHARIDES

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# Carbohydrate Polymers

## Volume 95, Issue 2, Pages 615-784 (20 June 2013)

### ***Antitumor activity of a polysaccharide from *Pleurotus eryngii* on mice bearing renal cancer***

Original Research Article

Pages 615-620

Zengyue Yang, Jian Xu, Qiang Fu, Xiaoliang Fu, Tao Shu, Yunpeng Bi, Bin Song

### ***Thermal characterization and detailed kinetic analysis of Cassava starch thermo-oxidative degradation***

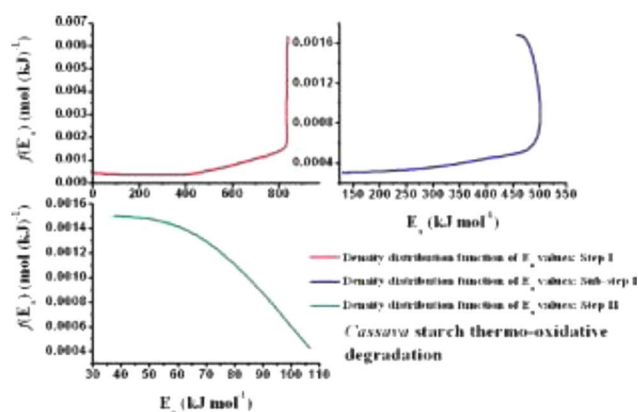
Original Research Article

Pages 621-629

Bojan Janković

#### ***Graphical abstract***

It can be observed a very similar shape of distributions for Step I and Sub-step I, representing one reaction unit. The probability of process realization increases for Step I and Sub-step I, going to singularity. In contrast, the probability of process realization continuously decreases in case of Step II.



### ***Highly stretchable nanoalginate based polyurethane elastomers***

Original Research Article

Pages 630-636

Hamed Daemi, Mehdi Barikani, Mohammad Barmar

### ***Associating and rheological behaviors of fluorinated cationic guar gum in aqueous solutions***

Original Research Article

Pages 637-643

Chen Wang, Xiaorui Li, Biao Du, Peizhi Li, Haibin Li

#### ***Highlights***

► Fluorinated reactive monomer (FAM) was successfully synthesized based on diisocyanate. ► Fluorinated cationic guar gum (FCGG) was prepared via modifying cationic guar gum with FAM. ► FCGG solution had unique associating and rheological behaviors. ► The relaxation time of FCGG solution increased significantly compared with cationic guar gum. ► FCGG solution possessed much better heat resistance.

### ***Optimizing conditions of polysaccharide extraction from Shiitake mushroom using response surface methodology and its regulating lipid metabolism***

Original Research Article

Pages 644-648

Min Zhu, Ping Nie, YongKang Liang, Bing Wang

### ***Phase composition and interface of starch-gelatin blends studied by synchrotron FTIR micro-spectroscopy***

Original Research Article

Pages 649-653

Nuozi Zhang, Xingxun Liu, Long Yu, Robert Shanks, Eustathios Petinaks, Hongsheng Liu

### ***Dry powder preparation of inulin fructotransferase from *Arthrobacter aureus* SK 8.001 fermented liquor***

Pages 654-656

Hua Hang, Yungao Li, Meng Zhao, Bo Jiang, Ming Miao, Wanmeng Mu, Tao Zhang

#### ***Highlights***

► IFTase powder preparation from fermented liquor was founded. ► IFTase powder (10.2 g) was obtained and specific activity was 16.4 U/mg. ► The method is easy to scale up DFA III preparation.

### ***A robust and universal NMR method for the compositional analysis of polysaccharides***

Original Research Article

Pages 657-663

Adriana Carvalho de Souza, Tim Rietkerk, Coralie G.M. Selin, Peter P. Lankhorst

#### ***Highlights***

► Robust quantification of polysaccharides based on sulfuric acid hydrolysis. ► NMR identification and accurate quantification of polysaccharides. ► Application from biomass to glycoproteins.

### ***Thermoplastic starch films reinforced with talc nanoparticles***

Original Research Article

Pages 664-674

Luciana Castillo, Olivia López, Cintia López, Noemí Zaritzky, M. Alejandra García, Silvia Barbosa, Marcelo Villar

***Cellulase immobilization onto the reversibly soluble methacrylate copolymer for denim washing***

Original Research Article

Pages 675-680

Yuanyuan Yu, Jiugang Yuan, Qiang Wang, Xuerong Fan, Xiaoyan Ni, Ping Wang, Li Cui

***Comparative study of processing methods for starch/gelatin films***

Original Research Article

Pages 681-689

Farayde M. Fakhouri, Daryne Costa, Fábio Yamashita, Silvia M. Martelli, Rodolfo C. Jesus, Katlen Alganer, Fernanda P. Collares-Queiroz, Lucia H. Innocentini-Mei

***Enzyme catalyzed cross-linking of spruce galactoglucomannan improves its applicability in barrier films***

Original Research Article

Pages 690-696

Petri Oinonen, Dimitri Areskogh, Gunnar Henriksson

***Unexplored possibilities of all-polysaccharide composites***

Review Article

Pages 697-715

Ivan Šimkovic

***Coelectrospinning of chitosan/alginate fibers by dual-jet system for modulating material surfaces***

Original Research Article

Pages 716-727

Wei-Wen Hu, Hsing-Ning Yu

***Cellulose nanobiocomposites with reinforcement of boron nitride: Study of thermal, oxygen barrier and chemical resistant properties***

Original Research Article

Pages 728-732

Sarat K. Swain, Satyabrata Dash, Chandini Behera, Sudhir K. Kisku, Lingaraj Behera

***Preparation and characterization of inclusion complexes formed between baicalein and cyclodextrins***

Original Research Article

Pages 733-739

Qiuna Zhou, Xiaohui Wei, Wei Dou, Guixin Chou, Zhengtao Wang

***Highlights***

► 1:1 complex of baicalein (Ba) with (2,6-di-O-methyl)- $\beta$ -cyclodextrin (DM- $\beta$ -CD) was prepared and characterized. ► By complexation with CDs, the water solubility of Ba was improved. ► The highest value of the stability constant was for Ba/DM- $\beta$ -CD inclusion complex. ► By complexation with DM- $\beta$ -CD, the stability and dissolution rate of Ba were enhanced.

### ***Biological and physicochemical properties of two polysaccharides from the mycelia of Grifola umbellata***

Original Research Article

Pages 740-745

Yunpeng Bi, Ye Miao, Yan Han, Jian Xu, Qing Wang

### ***Characterization and optimization of production of exopolysaccharide from Chlamydomonas reinhardtii***

Original Research Article

Pages 746-752

Amit Bafana

#### ***Highlights***

► EPS was purified from *C. reinhardtii* RAC, which was isolated from Palampur, India. ► The production of EPS was optimized using Plackett–Burman design and RSM. ► EPS had high molecular weight and sheet-like surfaces. ► GC–MS analysis showed that EPS was a heteropolysaccharide with 7 different sugars. ► EPS displayed strong antioxidant ability *in vitro*.

### ***Amylopectin grafted with poly (acrylic acid): Development and application of a high performance flocculant***

Original Research Article

Pages 753-759

Amit Kumar Sarkar, N.R. Mandre, A.B. Panda, Sagar Pal

### ***Hydrogel, aerogel and film of cellulose nanofibrils functionalized with silver nanoparticles***

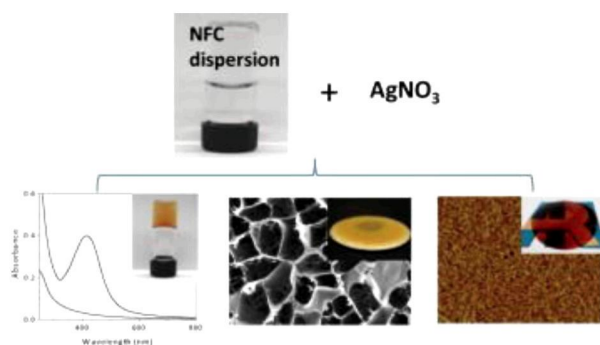
Original Research Article

Pages 760-767

Hong Dong, James F. Snyder, Dat T. Tran, Julia L. Leadore

#### ***Graphical abstract***





## ***Multifunctional finishing of cotton fabrics with 3,3',4,4'-benzophenone tetracarboxylic dianhydride: Reaction mechanism***

Original Research Article

Pages 768-772

Aiqin Hou, Gang Sun

### ***Highlights***

► BPTCD was successfully used in cotton fabric to get multifunction, water as medium. ► The dianhydride groups of BPTCD were hydrolyzed to tetracarboxylic acid groups. ► The mechanism of BPTCA reacting with hydroxyl of cellulose was revealed. ► BPTCA could directly react with hydroxyl on cellulose with sodium hypophosphite.

## ***Effect of cellulose whisker content on the properties of poly(ethylene-co-vinyl acetate)/cellulose composites***

Original Research Article

Pages 773-779

Silviya Elanthikkal, Unnikrishnan Gopalakrishnanpanicker, Soney Varghese, James T. Guthrie, Tania Francis

### ***Highlights***

► Banana plant fibre waste as the source of cellulose whiskers. ► Preparation and characterization of poly(ethylene-co-vinyl acetate) [EVA]/cellulose whisker composites. ► Development of EVA/cellulose whisker composites – without using any compatibilizer. ► Superior thermal and mechanical properties. ► Comparison of the results of mechanical testing with theoretical modelling.

## ***Dipsacus asperoides polysaccharide induces apoptosis in osteosarcoma cells by modulating the PI3K/Akt pathway***

Original Research Article

Pages 780-784

Jun Chen, Dong Yao, Huixin Yuan, Shaojun Zhang, Jinhong Tian, Wenjing Guo, Weizhi Liang, Huiyuan Li, Yong Zhang

## ***Editorial Board***

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