

全国中文核心期刊
中国科技核心期刊
中国农业核心期刊
RCCSE中国核心学术期刊
中国科学引文数据库 (CSCD) 期刊
CAB International 收录期刊
美国《生物学文摘》收录期刊
美国《化学文摘》(CA) 收录期刊

首页 (/) 期刊介绍 (/Corp/10.aspx) 编委会 投稿须知 期刊订阅 (/Corp/3600.aspx) 广告合作 (/Corp/5006.aspx) 联系我们 (/Corp/50.aspx) 返回主站 (http://www.haasep.cn/)

«上一篇 (DArticle.aspx?type=view&id=201504026)
下一篇 (DArticle.aspx?type=view&id=201504028)



PDF下载 (pdfdown.aspx?Sid=201504027)

+分享
(http://www.jiathis.com/share?uid=1541069)



微信公众号: 大豆科学

[1]张翠,徐晶,白绘宇.SPI/HA/CMC三元复合膜的制备及其性能研究[J].大豆科学,2015,34(04):690-694.[doi:10.11861/j.issn.1000-9841.2015.04.0690]
ZHANG Cui,XU Jing,BAI Hui-yu.Preparation and Study of SPI/HA/CMC Ternary Composite Film[J].Soybean Science,2015,34(04):690-694.[doi:10.11861/j.issn.1000-9841.2015.04.0690]

点击复制

SPI/HA/CMC三元复合膜的制备及其性能研究

《大豆科学》 [ISSN:1000-9841 /CN:23-1227/S] 卷: 第34卷 期数: 2015年04期 页码: 690-694 栏目: 出版日期: 2015-08-25

Title: Preparation and Study of SPI/HA/CMC Ternary Composite Film

作者: 张翠¹ (KeySearch.aspx?type=Name&Sel=张翠); 徐晶² (KeySearch.aspx?type=Name&Sel=徐晶); 白绘宇³ (KeySearch.aspx?type=Name&Sel=白绘宇)

1. 上海工会管理职业学院, 上海 200000; ?
2. 国家知识产权局专利局专利审查协作江苏中心, 江苏 苏州 215000;
3. 江南大学 化学与材料工程学院, 江苏 无锡 214122

Author(s): ZHANG Cui¹ (KeySearch.aspx?type=Name&Sel=ZHANG Cui); XU Jing² (KeySearch.aspx?type=Name&Sel=XU Jing); BAI Hui-yu³ (KeySearch.aspx?type=Name&Sel=BAI Hui-yu)

1. Shanghai Trade Union Polytechnic, Shanghai 200000, China;?
2. Patent Examination Cooperation Jiangsu Center of the Patent Office, State Intellectual Property Office, Suzhou 215011, China;?
3. School of Chemical and Material Engineering, Jiangnan University, Wuxi 214122, China

关键词: 大豆分离蛋白(SPI) (KeySearch.aspx?type=Keyword&Sel=大豆分离蛋白(SPI)); 透明质酸(HA) (KeySearch.aspx?type=Keyword&Sel=透明质酸(HA)); 羧甲基纤维素钠(CMC) (KeySearch.aspx?type=Keyword&Sel=羧甲基纤维素钠(CMC)); 复合膜 (KeySearch.aspx?type=Keyword&Sel=复合膜)

Keywords: Isolated soybean protein(SPI) (KeySearch.aspx?type=Keyword&Sel=Isolated soybean protein(SPI)); Hyaluronic acid(HA) (KeySearch.aspx?type=Keyword&Sel=Hyaluronic acid(HA)); Sodium carboxymethyl cellulose(CMC) (KeySearch.aspx?type=Keyword&Sel=Sodium carboxymethyl cellulose(CMC)); Composite film (KeySearch.aspx?type=Keyword&Sel=Composite film)

DOI: 10.11861/j.issn.1000-9841.2015.04.0690 (http://dx.doi.org/10.11861/j.issn.1000-9841.2015.04.0690)

文献标志码: A

摘要: 以甘油为增塑剂,通过溶液共混法制备大豆分离蛋白/透明质酸/羧甲基纤维素钠三元复合膜,并采用SEM、UV-Vis、拉伸试验等手段对其微结构和性能进行了研究。结果表明:当SPI含量在40%~50%时,复合膜的力学强度最大,SPI的引入能够提高复合膜表面的疏水性,同时透光率也会降低。当SPI含量较低时,水蒸气透过率较低,当SPI含量超过50%时,水蒸气透过率显著增加。该复合膜以天然高分子为基质,具备良好的力学性能、耐水性、阻隔性,有望应用于食品包装领域。

Abstract: Isolated soybean protein(SPI)/hyaluronic acid(HA)/sodium carboxymethyl cellulose(CMC) ternary composite film was prepared by solution blending, with glycerol as the plasticizer, and the microstructure and properties of the film were studied by SEM, UV-Vis, Tensile Test and so on. The results showed that film had highest tensile strength(TS) when the content of SPI was 40%~50%. Addition of SPI could improve the hydrophobicity of the film, simultaneously reduce the light transmittance. When the content of SPI was low, the water vapor transmission rate was low, and when the SPI content was over 50%, the water vapor transmission rate increased significantly. Such film based on natural polymers had good mechanical property, water resistance and good barrier could be potentially applicable in food packaging.

参考文献/References:

- [1] 汪释翔,张俐娜.天然高分子材料研究进展 [J]. 高分子通报, 2008 (7): 66-76(Wang Y X, Zhang L N. Recent developments of materials in natural polymers [J]. Polymer Bulletin, 2008 (7): 66-76)
- [2] KEUM IL Jang K I, Lee H G. Stability of Chitosan nanoparticles for L. ascorbic acid during heat treatment in aqueous solution [J]. Journal of Agricultural and Food Chemistry, 2008, 56:1936-1941
- [3] Zhang C, Ding Y, Qi N P, et al. Novel chitosan-derived nanomaterials and their micelle-forming properties [J]. Journal of Agricultural and Food Chemistry, 2006, 54:8409-8416
- [4] 冯守爱,林宝凤,梁兴泉.壳聚糖保鲜膜的研究进展 [J]. 高分子通报, 2004 (12):68-72(Feng S A, Lin B F, Liang X Q. Research development of chitosan film in food preservation [J]. Polymer Bulletin, 2004 (12):68-72)
- [5] 廖萍,姜鹏,白绘宇,等.大豆分离蛋白与明胶蛋白复合膜的制备与性能研究 [J]. 功能材料, 2009 (2):291-294(Liao P, Jiang P, Bai H Y, et al. Preparation and physical properties of soy protein isolate and gelatin composite films [J]. Journal of Functional Materials, 2009(2):291-294)
- [6] Monedero F M, Fabra M J, Talens P, et al. Effect of oleic acid-beeswax mixtures on mechanical, optical and water barrier properties of soy protein isolate based films [J]. Journal of Food Engineering, 2009, 91:509-515
- [7] 白绘宇,徐晶,屈海军,等.大豆蛋白光敏接枝物SPI-g.P(VM-co.AMPS)的合成及溶液行为研究 [J]. 大豆科学, 2011(6):475-479(Bai H Y, Xu J, Qu H J, et al. Synthesis and solution behavior of photo-sensitive graft copolymers based on soy protein isolate [J]. Soybean Science, 2011(6):475-479)
- [8] Guerrero P, Retegi A, Gabilondo N, et al. Mechanical and thermal properties of soy protein film processed by casting and compression [J]. Journal of Food Engineering, 2010, 100:145-151

[9] Xu J, Bai H Y, Wang M, et al. Properties of hyaluronan/PVA-SbQ composite films processed by casting [J]. *Polymers and Polymer Composites*,2013(1):55-60

备注/Memo 第一作者简介: 张翠 (1986-), 女, 硕士, 助教, 主要从事食品科学教学与研究。E-mail:zcu.529@163.com。

更新日期/Last Update: 2015-09-01

版权所有 © 2012 黑龙江省农科院信息中心
黑ICP备11000329号-2