



Dr. Haisong Wang, Professor

He received his MSc degree from the China National Pulp and Paper Research Institute in 2004 and got his PhD degree from the Tianjin University of Science and Technology, in 2008. From September 2004 to December 2006, he worked in Tianjin Jinzheng Technology Paper Co., Ltd. as vice minister and institute director. From January 2007 to January 2008, he was delegated to Oji Paper Co., Ltd. in Japan for further study. He joined in Biomass Pretreatment Engineering group in Qingdao Institute of Bioenergy and Bioprocess Technology, CAS, in 2008, and conducted his visiting scholar at the University of Wisconsin - Madison from 2010 to 2011. He has been working in the College of Light Industry and Chemical Engineering of Dalian Polytechnic University from 2016. His research interest was pretreatment, fractionation, and effective conversion of lignocelluloses. He has participated in several projects supported by technology innovation foundation of enterprise, Natural Science Foundation of China, international cooperation project with Shell, Boing and P&G, significant projects of Shandong province and Qingdao city. He has published over 60 papers in leading peer-reviewed journals, including *Chemical Communications*, *Journal of Materials Chemistry*, *Bioresource Technology* as well as *Biotechnology* for biofuels and holds 12 patents.

1 Research Areas

- 1) Biomass pretreatment and fractionation for biofuel production;
- 2) Chemical Modification of Fiber from lignocellulosic biomass;
- 3) High-value co-products development from hemicellulose and lignin.
- 4) Specialty materials and functional materials based on natural fiber.

2 Major Active Research Projects

- 1) The degradation mechanism and selectivity tuning of carbohydrate during oxygen-alkali pretreatment of lignocellulose, Natural Science Foundation of China (2017-2021)
- 2) The study on the ultrastructural changes of lignocellulose and the mechanism of the promotion of enzymatic hydrolysis after BIVIS pretreatment with acidic/alkaline media, Natural Science Foundation of China (2013-2017)
- 3) The study on the restraining of carbohydrate degradation and mechanism of alkaline pretreatment of lignocellulose, Natural Science Foundation of China (2012-2016)
- 4) The Application of BIVIS Machine in the Pretreatment of Lignocellulosic Biomass (No. SSR149), Shell Research Foundation. (2009.10-2014.10)
- 5) Modified alkali pretreatment for enzymatic saccharification of ligno-celluloses, international cooperation project of P&G. (2012.6-2014.6)
- 6) Pretreatment of lignocellulosic biomass for jet fuel production, international cooperation project of the Boeing company(2014.10-2015.10)
- 7) Characterization and Modification of Wheat Straw Lignin for Value-Added Conversion, A joint research project between QIBEBT and NCSU under the Umbrella of the Biomass to Biochemical and Biomaterial Consortium (201-2016)

- 8) Pretreatment of lignocellulosic biomass for jet fuel production, The Boeing Company(2014-2015)
- 9) Studies on the Key Technologies of Fermentable Sugar Production Processes Using Lignocellulosic Feedstock, National High Technology Research and Development Program of China (863 Program) (2012-2016)
- 10) Key technology for Preparation of high range water reducing agent of cement from papermaking black liquor, Chinese Academy of Sciences

3 Publications

- 1) Huan Liu, Bo Pang, Jinghui Zhou, Ying Han, Jie Lu, Haiming Li* and **Haisong Wang***. Comparative study of pretreated corn stover for sugar production using cotton pulping black liquor (CPBL) instead of sodium hydroxide, *Industrial Crops and Products*,2016,84: 97-103 (SCI 一区, IF=3.208)
- 2) Yuedong Zhang, Guang Yu, Bin Li, Xindong Mu, Hui Peng*, **Haisong Wang***, Hemicellulose isolation, characterization, and the production of xylo-oligosaccharides from the wastewater of a viscose fiber mill, *Carbohydrate Polymers*, 2016(141):238-243 (SCI 二区, IF=3.916)
- 3) Huan Liu, Bo Pang, **Haisong Wang***, Haiming Li, Jie Lu, and MeihongNiu*, Optimization of Alkaline Sulfite Pretreatment and Comparative Study with Sodium Hydroxide Pretreatment for Improving Enzymatic Digestibility of Corn Stover, *Journal of Agricultural and Food Chemistry*,2015, 63 (12): 3229–3234(SCI 一区, IF=3.107)
- 4) Hongling Gao, Haitang Liu, Bo Pang, Guang Yu, Yuedong Zhang, **Haisong Wang***, XingdongMu.Production of furfural from waste aqueous hemicellulose solution of hardwood over ZSM-5 zeolite, *Bioresource Technology*, 2014, 172: 453-456 (SCI 一区, IF=5.039)
- 5) Huanfei Xu, Bin Li,Xindong Mu, Guang Yu, Chao Liu, Yuedong Zhang,**Haisong Wang***. Quantitative characterization of the impact of pulp refining on enzymatic saccharification of the alkaline pretreated corn stover, *Bioresource Technology*,2014, 169:19-26 (SCI 一区, IF=5.039)
- 6) Xiaolin Luo, Jing Liu,**Haisong Wang***, Liulian Huang, Lihui Chen*, Comparison of hot-water extraction and steam treatment for production of high purity-grade dissolving pulp from green bamboo, *Cellulose*,2014,3 (21): 1445-1457(SCI 一区, IF=3.033)
- 7) Chao Liu, Evert van der Heide, **Haisong Wang***, Bin Li, Guang Yu, Xindong Mu*,Alkaline twin-screw extrusion pretreatmentfor fermentable sugar production , *Biotechnology for biofuels*, 2013, 6:97 (SCI 一区, IF=6.221)
- 8) Zhen Liu, **Haisong Wang***, Chao Liu, Yijun Jiang, Guang Yu, Xindong Mu* and Xiaoyan Wang, “Magnetic cellulose-chitosan hydrogels prepared from ionic liquids as reusable adsorbent for removal of heavy metal ions”, *Chemical Communications*, 2012, 48 (59), 7350 – 7352(封面文章) (SCI 二区, IF=6.718)
- 9) Zhen Liu, **Haisong Wang***, Bin Li, Chao Liu, Yijun Jiang, Guang Yu, and Xindong Mu*, “Biocompatible magnetic cellulose-chitosan hybrid gel microspheres reconstituted from ionic liquids for enzyme immobilization”, *Journal of Materials Chemistry*, 2012, 22 (30), 15085-15091 (SCI 一区, IF=6.629)
- 10) **王海松***, 牟新东. 急成長する中国山東省のセシ工業と環境資源対策, *紙パルプ技術タイムス*,2010,6 (53) :36-45 (EI 刊源)

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