

## EDUCATION

### **Ph.D. in Agricultural and Biological Engineering, 08/2007-08/2011**

Department of Agricultural and Biological Engineering,

*Pennsylvania State University, University Park, PA, USA*

Advisor: Dr. Jeffrey Catchmark (Biological Engineering), Dr. Erwin Vogler (Material Science)

Areas: cellulose-based hydrogel for biomedical application

### **Master-II in Macromolecular Physical Chemistry, 09/2003-07/2004**

Département de chimie (Department of Chemistry),

*Université Joseph Fourier-Grenoble I, Grenoble, France*

*Centre de Recherches sur les Macromolécules Végétales (CERMAV-CNRS), Grenoble, France*

Advisor: Dr. Jean-Luc Putaux

Areas: Synthesis and characterization of amylose V-type single crystals for sustainable delivery system

### **Master in Processing Engineering of Agricultural Products, 09/2000-07/2003**

Graduate School and Institute of Agricultural Product Qualities,

*Chinese Academy of Agricultural Sciences, Beijing, China*

Advisor: Prof. Tao Zhang

Areas: Synthesis and characterization of thermoplastic starch-based composites

### **Bachelor in Chemistry (Food Chemistry and Engineering), 09/1996-07/2000**

College of Food Technology, *Huazhong Agricultural University, Wuhan, China*

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## RESEARCH AND PROFESSIONAL EXPERIENCE

- 1. Research Assistant Professor**, Texas Tech University, Lubbock, Texas, USA, 12/2015 – Present  
Fiber & Biopolymer Research Institute  
Department of Plant and Soil Sciences
  - 2. Postdoctoral Research Associate**, Texas Tech University, Lubbock, Texas, USA, 09/2014 – 11/2015  
Fiber & Biopolymer Research Institute  
Department of Plant and Soil Sciences
  - 3. Associate Research Fellow**, Chinese Academy of Sciences, Shenzhen, China, 10/2012 – 08/2014  
Center for Human Tissues and Organs Degeneration  
Institute of Biomedicine and Biotechnology  
Shenzhen Institutes of Advanced Technology
  - 4. Biomaterials Engineer**, Trellis Earth Products, Inc., Wilsonville, OR, USA, 08/2011 – 08/2012  
Research and Development Division
  - 5. College Lecturer**, Wuhan Bioengineering Institute, Wuhan, China, 02/2005 – 07/2007  
Department of Bioengineering
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## PUBLICATIONS

### Peer-reviewed papers

1. **Hu Y**, Zhu Y-J, Zhou X, Ruan C-S, Pan H-B and Catchmark JM. Bioabsorbable cellulose composites prepared by an improved mineral-binding process for bone defect repair. *J. Mater. Chem. B*, In press.
2. C-S. Ruan, **Hu Y**, Hu N, Dou S-H, Pan H-B and Wang Y-L. 2014. Piperazine-based polyurethane-ureas with controllable degradation as potential bone scaffolds. *Polymer*, 55, 1020-1027.
3. Ruan C-S, **Hu Y**, Jiang L-X, Cai Q-Q, Pan H-B and Wang H-Y. Study on the tunable degradation of piperazine-based polyurethane ureas. *J. Appl. Polym. Sci.* 2014, 131: 40527.
4. **Hu Y\*** (Corresponding author), Catchmark JM, Zhou X, Wang J-H, Zhu Y-J, Liang N-Y. Engineering of porous bacterial cellulose towards human fibroblasts in-growth for tissue engineering. *J Mater Res.* 2014, 29: 2682-2693.
5. **Hu Y**, Catchmark JM, Vogler EA. Factors impacting the formation of sphere-like bacterial cellulose particles and their biocompatibility for human osteoblast growth. *Biomacromolecules* 2013, 14: 3444-3452.
6. **Hu Y**; Catchmark JM. Integration of cellulases into bacterial cellulose: toward bioabsorbable cellulose composites. *J Biomed Mater Res B.* 2011, 97B: 114-123.
7. **Hu Y**, Catchmark JM. In-vitro biodegradability and mechanical properties of bioabsorbable bacterial cellulose incorporating cellulase enzymes. *Acta Biomater.* 2011, 7: 2835-2845.
8. **Hu Y**, Catchmark JM. Formation and characterization of spherelike bacterial cellulose particles produced by *Acetobacter xylinum* JCM 9730 strain. *Biomacromolecules.* 2010, 11: 1727–1734.
9. **Hu Y**, Catchmark JM. Influence of 1-methylcyclopropene (1-MCP) on the production of bacterial cellulose biosynthesized by *Acetobacter xylinum* under the agitated culture. *Lett Appl Microbiol.* 2010, 51: 109-113.
10. Putaux JL, Cardoso MB, Dupeyre D, Morin M, Nulac A, **Hu Y**. Single crystals of V-amylose inclusion complexes. *Macromol. Symp.* 2008, 273: 1–8.
11. **Hu Y**, Li Y-J, Xu T-H. Study on the effect of starch granule size on the cross-linking of starch. *Machinery For Cereals Oil and Food Processing* 2006, 7: 88~91.
12. Lu Y, Li Y-J, **Hu Y**, Zhang Z-Y. Removal of phytic acid from dehulled double-low rapeseed cake. *China Oil and Fats* 2007, 32: 22-26.
13. **Hu Y**, Zhang T, Kang W-Y, Yuan X-M. Studies on the new processing technology of enzymatic treated sweet potato comfit. *Bull. Agr. Sci. Technol.* 2003, 01: 24-25.
14. **Hu Y**, Li S-Y. Processing technology of meat products and the critical controlled points in the processing. *Agr. Eng. Technol. Agr. Prod. Proc.* 2007, 3: 20-25.
15. **Hu Y**, Xiao X, Chu X-J, Cao W. Application of HACCP in the circulation of pasteurized milk. *Agr. Eng. Technol. Agr. Prod. Proc.* 2007, 9: 12-16.
16. Li Y-J, **Hu Y**. Present situation of Chinese rice deep-processing and products, *Machinery for Cereals Oil and Food Processing* 2006, 01: 14-16.
17. Lu Y, Li Y-J, Huang J, **Hu Y**, Zhang Z. Classification, production process and nutritional value of Chinese liquor. *Agri. Eng. Technol.* 2007, 2: 21-24.
18. He H, Xie B-J, Sun J, **Hu Y**. Studies on the enzymolysis and the free radicals scavenging activities of water extract for *Ganoderma Luciderm*. *Food and Fermentation Industry* 2001, 6: 11-15.

## Patents

19. **Hu Y**, Pan H-B, Zhou X, Wang J-H. Preparation and application of injectable microparticulate hydrogel as a drug carrier. *CN patent 201310293440.6*.
20. **Hu Y**, Pan H-B; Zhou X. Application and preparation of bioactive materials for bone defect repair. *CN patent 201310196824.6*.
21. **Hu Y**, Gao N-S, Lv X-Q, Pan H-B. Bacterial cellulose hydrogel composite. *CN patent 2012105670231*.
22. **Hu Y**. High biomass content biodegradable thermoplastic matrix for food contact service items. *US patent 20130008823*.
23. **Hu Y**. Ultrahigh biomass content multi-layer extruded thermoplastics sheet. *US Appl. No. 61/505.786*, 2011.
24. Catchmark JM, Fugmann B, **Hu Y**. Degradable biomolecule compositions. *US patent 20100172889*.
25. Zhang T, Yuan X-M, Hu Y. The processing technology of starch-based ingredient of thermoplastic biodegradable material, *CN patent 01109459.1*.

## Conference proceedings

26. **Hu Y**, Abidi N. Two-stage separation and alignment of cellulose nanocrystals. *ACS 2015 Annual Meeting, March 22-26, Denver, CO*.
  27. Acharya S, Hu Y, Abidi N. Effective dissolution of cellulose for making electrically-responsive films. *ACS 2015 Annual Meeting, March 22-26, Denver, CO*.
  28. **Hu Y**, Zhou X, Haobo Pan. A bioassembled hydrogel as a bioabsorbable carrier of hydroxyapatite potentially for bone defect repair. *WACBE 2013 Annual Meeting, Aug 5-8, Beijing, China*.
  29. **Hu Y**, Zhou X, Catchmark JM. Engineering of porous bacterial cellulose towards human fibroblasts in-growth for skin tissue engineering. *2013 International Conference on Regenerative Biomedical Materials, June 2-4, Wuhan, China*.
  30. **Hu Y**, Catchmark JM. Structural improvement of porous bacterial cellulose as a promising tissue nano-scaffold for cartilage tissue engineering. *2013 USTBME The HKUST International Conference on Biomedical Engineering, Jan 10-12, Hong Kong*.
  31. **Hu Y**, Catchmark JM. Hydroxyapatite functionalized bioabsorbable hydrogel derived from bacterial cellulose microspherical particles potentially for bone-type tissue regeneration. *2011 SFB Annual Meeting, April 13-16, 2011, Orlando, FL*.
  32. **Hu Y**, Catchmark JM. Hydroxyapatite functionalized bioabsorbable bacterial cellulose potentially for bone-type tissue regeneration. *2011 IBE Annual Meeting, March 3-5, 2011, Atlanta, GA*.
  33. **Hu Y**, Catchmark JM. In-vitro biodegradability of bioabsorbable bacterial cellulose used for wound healing and tissue regeneration. *10th NJ Symposium from Materials Design to Scaffolds to Tissue Regeneration, October 27-28, 2010 New Brunswick, NJ*.
  34. **Hu Y**, Catchmark JM. Incorporation of cellulosic degrading enzymes into bacterial cellulose for controlled degradation in wound care applications. *ASABE 2010 Annual Meeting, June 20-23, Pittsburgh, PA*.
  35. **Hu Y**, Catchmark JM. Studies on sphere-like bacterial cellulose produced by *Acetobacter xylinum* under agitated culture. *ASABE 2010 Annual Meeting, June 20-23, Pittsburgh, PA*.
  36. **Hu Y**, Izmirliloglu G; Mears-Leiner D; Rusadi E. Mathematic modeling of rennin production by *Mucor miehei*. *ASABE 2010 Annual Meeting, June 20-23, Pittsburgh, PA*.
  37. **Hu Y**, Catchmark JM. Effect of freeze-drying behavior on the density and structure of bacterial cellulosic films by different acidic and alkaline treatments. *ASABE 2009 Annual Meeting, June 21-24, Reno, NV*.
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## PROFESSIONAL SOCIETIES

American Chemical Society (ACS)

Society for Biomaterials (SFB)

American Society for Testing and Materials (ASTM)

American Society of Agricultural and Biological Engineers (ASABE)

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## OTHERS

- **Editor** of the Journal of Fiber Bioengineering and Informatics
  - **Reviewer:** Cellulose, Carbohydrate Polymers, International Journal of Biological Macromolecules, Smart Materials and Structures, Biomedical Materials, Journal of Biomedical Materials Research B – Applied Biomaterials, Applied Surface Science, AATCC Review, Journal of Applied Biomaterials – Functional Materials.
  - Engineering Intern in **US Professional Engineer (#: 85968EI)** in *Chemical Engineering*.
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