

Curriculum Vitae

Hongbo Du

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EDUCATION

Ph.D. Mechanical Engineering (concentrated in Materials Engineering) --- 2011 Colorado State University, Fort Collins, USA

Master in Engineering --- 2002 Beijing Forestry University, Beijing, China

Bachelor in Engineering ---1999 Beijing Forestry University, Beijing, China

Current work

Studying Nanomaterials applications in CO₂ capture with both experimental and theoretical methods
Studying biofuel applications and energy sustainability

Previous work

Studied biofuel derivation with membrane technologies using both experimental and theoretical methods
Studied salt effects on thermal responsive polymers

PROFESSIONAL AFFILIATIONS

Patent examiner on electronics materials for solid state drives, semiconductors, data storage in years 2002-2006 in the China Patent Office

North American Membrane Society

The American Institute of Chemical Engineers

Lead guest editor of Journal of Chemistry for a specific issue of the applications of theoretical chemistry on green chemistry

Reviewer of the Journal of Chemistry

Reviewer of the Journal of Nanomaterials

Reviewer of Metallurgical and Materials Transactions: Materials for Energy Systems

Reviewer of the Tribology in Industry Journal

Reviewer of the Journal of Materials Engineering and Performance

CONFERENCE PRESENTATIONS

(18), **Hongbo Du**, Melisa Stewart, Raghava R. Kommalapati and Xinhua Shen, Carbon Dioxide Capture Using Polyethylenimine Impregnated Titanate Nanotubes, the 251st ACS National Meeting & Exposition, San Diego, California, March 13-17, 2016.

- (17) Xianghong Qian and **Hongbo Du** “The Effects of Salt on the Free Energy of Thermo-Responsive PNIPAM Transition” 2015 Annual Meeting of the American Institute of Chemical Engineers, Salt Lake City, UT. November 8-13, 2015.
- (16) Jasmine Kaur, John Chau, **Hongbo Du**, Xianghong Qian and Kamalesh K. Sirkar “Organic Solvent Nanofiltration with Novel Polymeric Membranes” 2015 Annual Meeting of the American Institute of Chemical Engineers, Salt Lake City, UT. November 8-13, 2015.
- (15) Zizhao Liu, **Hongbo Du**, S. Ranil Wickramasinghe and Xianghong Qian “Polymeric ligand Affinity Membranes for Protein Separations: Experiments and Simulations”, 2014 Annual Meeting of the American Institute of Chemical Engineers, Atlanta, GA. November 16-21, 2014.
- Xianghong Qian and **Hongbo Du** “The Effects of Salt on the Thermodynamics of Protein Folding”, 2014 Annual Meeting of the American Institute of Chemical Engineers, Atlanta, GA. November 16-21, 2014.
- (14) Xianghong Qian, Guanghui Song, Hongbo Du and S. Ranil Wickramasinghe “Developing Advanced Antifouling Membranes Using Complementary Experimental and Theoretical Methods”, 2014 Annual Meeting of the American Institute of Chemical Engineers, Atlanta, GA. November 16-21, 2014.
- (13) **Hongbo Du** and Xianghong Qian “Investigating Antifouling Properties of Zwitterionic Carboxybetaines from Molecular Dynamics Simulations”, 2014 Annual Meeting of the American Institute of Chemical Engineers, Atlanta, GA. November 16-21, 2014.
- (12) Xiaoquan Sun, **Hongbo Du**, S. Ranil Wickramasinghe and Xianghong Qian “Molecular Dynamics Simulations of Cellulose Interaction With Polymeric Solid Acid”, 2013 Annual Meeting of the American Institute of Chemical Engineers, San Francisco, CA. November 3-8, 2013.
- (11) **Hongbo Du** and Xianghong Qian “The Effects of Salt On the Free Energy Surface for Protein Folding”, 2013 Annual Meeting of the American Institute of Chemical Engineers, San Francisco, CA. November 3-8, 2013.
- (10) **Hongbo Du**, S. Ranil Wickramasinghe and Xianghong Qian “Molecular Dynamics Simulations of Thermoresponsive Poly (N-isopropylacrylamide) and Its Copolymer”, 2012 Annual Meeting of the American Institute of Chemical Engineers, San Pittsburgh, PA. October 28 - November 2, 2012.
- (9) Xianghong Qian and **Hongbo Du** “The Effects of Solvent On Glucose Conversion to 5-Hydroxymethylfurfural”, 2012 Annual Meeting of the American Institute of Chemical Engineers, San Pittsburgh, PA. October 28 - November 2, 2012.
- (8) **Hongbo Du** and Xianghong Qian “Structure and Property of Glucose in DMSO/Water Mixtures From Ab Initio Molecular Dynamics Simulations”, 2012 Annual Meeting of the American Institute of Chemical Engineers, San Pittsburgh, PA. October 28 - November 2, 2012.
- (7) **Hongbo Du**, S. Ranil Wickramasinghe and Xianghong Qian “Molecular Dynamics Simulations of Thermoresponsive Poly (N-isopropylacrylamide) and Its Copolymer”, 2012 Annual Meeting of the American Institute of Chemical Engineers, San Pittsburgh, PA. October 28 - November 2, 2012.
- (6) **Hongbo Du**, S. Ranil Wickramasinghe, Mathias Ulbricht and Xianghong Qian “The Effects of Salt On Lower Critical Solution Temperature Transition of Thermo-Responsive Pnipam-Co-PEGMA Copolymer”, 2011 Annual Meeting of the American Institute of Chemical Engineers. Minneapolis, MN. October 16 - 21, 2011.
- (5) **Hongbo Du** and Xianghong Qian, “The Effects of Acetate Anion on Cellulose Dissolution and Reaction In Imidazolium Ionic Liquids”, 2011 Annual Meeting of the American Institute of Chemical Engineers. Minneapolis, MN. October 16 - 21, 2011.
- (4) **Hongbo Du**, Ranil Wickramasinghe and Xianghong Qian, “The Effects of Salt On LCST of Pnipam”, 2010 Annual Meeting. 2010 Annual Meeting of the American Institute of Chemical Engineers. Salt Lake City, UT. November 7 - 12, 2010.

- (3) **Hongbo Du**, Ji-Lai Li, Ranil Wickramasinghe and Xianghong Qian “Molecular Dynamics Investigation of the Effects of Ionic Strength On LCST of Poly (N-isopropylacrylamide)”, 2009 Annual Meeting of the American Institute of Chemical Engineers, Nashville, TN. November 8 - 13, 2009.
- (2) **Hongbo Du**, Ji-Lai Li, Ranil Wickramasinghe and Xianghong Qian, “Molecular Dynamics Investigation of the Effects of Ionic Strength and pH on LCST of Poly(nisopropylacrylamide)”, 2009 Annual meeting of North American Membrane Society, Charleston, SC. June 20-24, 2009.
- (1) **Hongbo Du**, Haitao Dong, Ranil Wickramasinghe, Scott Husson and Xianghong Qian “The Effects of Substitution and Degree of Polymerization on the Pka Values of Polymeric Polystyrene Sulfonic Acids”, 2008 Annual Meeting. Philadelphia, PA. November 16-21, 2008.

PUBLICATIONS (Citation numbers checked with Google Scholar: 316)

- (14) Du, H; Kommalapati, R; and Huque, Z. Assessment of Bioethanol Applications on Transportation Vehicles in Houston. *Journal of Fundamentals of Renewable Energy and Applications*. 2016 (Accepted)
- (13) **Du, H.**; Qian, X. The hydration properties of carboxybetaine zwitterion brushes. *Journal of Computational Chemistry*. Article first published online: 31 OCT 2015 | DOI: 10.1002/jcc.24234
- (12) Liu, Z.; **Du, H.** ; Wickramasinghe, R.; Qian, X. Membrane Surface Engineering for Protein Separations: Experiments and Simulations. *Langmuir*, 2014, *30* (35), p.10651–10660 (Cited by 2)
- (11) Himstedt, H. H.; **Du, H.** ; Marshall, K. M.; Williams, S. E.; Qian, X.; Wickramasinghe, S. R. pH Responsive Nanofiltration Membranes for Sugar Separations. *Industrial & Engineering Chemistry Research*. 2013, *52*, p.9259-9269. (Cited by 11)
- (10) **Du, H.**; Wickramasinghe, R.; Qian, X.. Specificity in Cationic Interaction with Poly(N-isopropylacrylamide). *Journal of Physical Chemistry B*. 2013, *117*, p.5090-5101. (Cited by 11)
- (9) **Du, H.**; Qian, X. The interactions between Salt Ions and Thermo-Response Poly(N-Isopropylacrylamide). Book chapter in the book “Responsive Membranes and Materials”, 2013, ISBN: 978-0-470-97430-8.
- (8) **Du, H.**; Qian, X.. The Effects of Acetate Anion on Cellulose Dissolution and Reaction in Imidazolium Ionic Liquids. *Carbohydrate Research*. 2011, *346*, p.1985-1990. (Cited by 21)
- (7) **Du, H.**; Qian, X.. Molecular Dynamics Simulations of PNIPAM-co-PEGMA Copolymer Hydrophilic to Hydrophobic Transition in NaCl Solution. *Journal of Polymer Science Part B: Polymer Physics*. 2011, *49*, p.1112-1122. (Cited by 12)
- (6) **Du, H.**; Wickramasinghe, R.; Qian, X.. Effects of Salt on the Lower Critical Solution Temperature of Poly(N-Isopropylacrylamide). *Journal of Physical Chemistry B*. 2010, *114*, p.16594–16604. (Cited by 70)
- (5) Zhang, Y.; **Du, H.**; Qian, X.; Chen, E.. Ionic Liquid-Water Mixtures: Enhanced-Kw for Efficient Cellulosic Biomass Conversion. *Energy & Fuels*, 2010, *24*, p.2410–2417. (Cited by 119)
- (4) Dong, H. T.; **Du, H.**; Wickramasinghe, R.; Qian, X.. The Effects of Chemical Substitution and Polymerization on the pK(a) Values of Sulfonic Acids. *Journal of Physical Chemistry B* 2009, *113*, p.14094-14101. (Cited by 17)
- (3) Dong, H.; **Du, H.**; Qian, X.. Prediction of pK(a) Values for Oligo-methacrylic Acids Using Combined Classical and Quantum Approaches. *Journal of Physical Chemistry B*, 2009, *113*, p.12857-12859. (Cited by 16)
- (2) Dong, H.; **Du, H.**; Qian, X.. Theoretical Prediction of pK(a) Values for Methacrylic Acid Oligomers Using Combined Quantum Mechanical and Continuum Solvation Methods. *Journal of Physical Chemistry A*, *112*, 2008, p.12687-12694. (Cited by 37)
- (1) Sa C.; **Du, H.**; Zhang, B.; Wang, G. Detection of Veneer Moisture Content by Surface-circle-shaped Resistance. *Forestry Studies in China (English Version)* 2003, *5*(4), p.41-44.