Nan ZHANG

Gender: Female **Date of birth:** Jan, 1989

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Education

Tsinghua University	**Chemical Engineering**	Ph.D. Candidate, GPA **91.7/100**，rank **2/98**	2010-2015
Tsinghua University	**Economics, second Major**	B.S., **excellent thesis** (Economics division), **10/152**	2007-2010
Tsinghua University	**Chemical Engineering**	B.S., **excellent thesis** (Ch. E. division), **5/118**; **outstanding graduate**, **5%**	2006-2010

Research/Project

- **Bifurcation control and nonlinear analysis of complex chemical systems** **Aug. 2012- Dec. 2013**
  - -Process simulation and optimization of Controlled/Living Radical Polymerization including NMRP and ATRP
  - -Local stabilization of Hopf bifurcation based on eigenstructure assignment/restructuring
  - -Eliminate unfavorable oscillation/introducing desired artificial bifurcation points in nonlinear control systems
- **CFD simulation of cracking furnace** **Sep. 2010- Nov. 2012**
  - -Using Computational Fluid Dynamics and the platform of ANSYS Fluent to simulate plant-level cracking furnace
  - -CFD Simulation of Propane Cracking Tube Using Detailed Radical Kinetic Mechanism
  - -Effectiveness of twisted slices: CFD simulation of cracking tube with internal twisted slices
- **Pricing strategy and quality control in market of contact lens** **Nov. 2009 - Apr. 2010**
  - -Provide strategies for entrant (Johnson & Johnson) with vertical product differentiation
  - -Based on industry organization theory and behavioral economics; excellent thesis

Work Experience

- **University of Pennsylvania, Philadelphia** **Research associate** **Nov. 2012- Nov. 2013**
  - -Modelling of CLRP (Controlled/Living Radical Polymerization) processes
  - -Operating Strategies to yield highly controlled micro-structure, polydispersity, and superior mechanical properties
  - -Model simplification based on Computational Singular Perturbation theory
- **Jingzhou Bureau of High-tech Zone, Hubei** **Student intern** **June 2012- Aug. 2012**
  - -Submitted the report "intellectual property management of micro-business" based on data analysis to the Goverment
  - -Interviewed and visited more than 80 High-tech enterprises in Jingzhou High-tech Zone
  - -Selected as the representative of the Dept. of Ch. E. and awarded as First prize of social practice, Tsinghua Univ.

Extra Curriculum Activites

Secretary of the Party branch, Chem. 5, Dept. of Ch.E.,	Oct. 2010- May. 2011
Secretary of the League branch, Chem. 61, Dept. of Ch.E.,	Sep. 2009- Nov. 2012
Investigation of low-rent housing system in Hong Kong,	Jul. 2009- Aug. 2009
Investigation of industrial restructuring in Pearl River Delta,	Jul. 2008- Aug. 2008
Office administrator of the Youth League Committee, Dept. of Ch.E.,	May. 2007- May. 2008
Voluntary teaching in Zhongcheng High School, Wenshui, Shanxi,	Jul. 2007- Aug. 2007

Awards

- Chinese Scholarship Council (CSC) Scholarship（2013）
- First-class Scholarship of Social Practices, Tsinghua Univ.（2012, **20/800**）
- First-class Scholarship of Dow Chemicals（2011, **2/98**）
- Outstanding Thesis of Dept. of Ch.E., Tsinghua Univ.（2010, **5/18**）
- Outstanding Graduates of Tsinghua Univ.（2010, **5%**）
- First-Class Scholarship of Petro China（2008, **5/18**）
- First-Class Scholarship of Mitsui Chemicals（2007, **2/118**）
- First Prize in the National High School Mathematics Competition（**2006**）

Publications

1. **Zhang, N.,** Qiu, T., Chen, BZ. CFD simulation of propane cracking tube using detailed radical kinetic mechanism. *Chinese Journal of Chemical Engineering*, 2013, 21(12): 1319-1331 (Featured on cover)
2. **Zhang, N.,** Chen, BZ., Qiu, T. CFD simulation of cracking tube with internal twisted slices. *Computer Aided Chemical Engineering*, 2012, 31: 905-909
3. **Zhang, N.,** Seider, WD., Chen, BZ. Nonlinear dynamics and hopf bifurcation in controlled/"living" radical polymerization of styrene. (217ap) In: *AIChE Annual meeting*, 2013, San Francisco
4. Wang, HZ., **Zhang, N.**, Qiu, T ., Zhao, JS., He, XR., Chen, BZ. Optimization of a continuous fermentation process producing 1,3-propane diol with Hopf singularity and unstable operating points as constraints. *Chemical Engineering Science*, (just accepted)
5. Wang, HZ., **Zhang, N.,** Qiu, T ., Zhao, JS., He, XR., Chen, BZ. A process design framework for considering the stability of steady state operating points and Hopf singularity points in chemical processes. *Chemical Engineering Science*, 2013, 99(9): 252-264
6. Wang, HZ., **Zhang, N.**, Qiu, T ., Zhao, JS., He, XR., Chen, BZ. Analysis of Hopf Points for a Zymomonas mobilis Continuous Fermentation Process Producing Ethanol. *Industrial & Engineering Chemistry Research*, 2013, 52: 1645-1655
7. Yuan, ZH., **Zhang, N.,** Qiu, T ., Chen, BZ., Zhao, JS. Systematic Controllability Analysis for Chemical Processes. *AIChE Journal*. 2013, 58: 3096-3109