

XIAOHONG CUI

CONTACT INFORMATION	Mary Kay O'Connor Process Safety Center Artie McFerrin Department of Chemical Engineering, Texas A&M University 3122 TAMU, College Station, TX 77843-3122 ☎ Mobile: (979)450-3970 ✉ Email: xhcui.zju@tamu.edu xhcui.zju@gmail.com
OBJECTIVE	Seeking intern/full-time positions in the chemical and energy industry to apply my technical capability and leadership skills in the area of Process Safety Engineering and Reaction Engineering.
EDUCATION	Doctor of Philosophy in Chemical Engineering Expected: Dec 2015 Texas A&M University , College Station, TX Specialization: Process Safety / Reactor Design and Operation Co-advisors: Dr. Benjamin A. Wilhite and Dr. M. Sam Mannan GPA: 3.88/4.0 Bachelor of Science in Control Science and Engineering Jun 2011 Zhejiang University , Hangzhou, China Specialization: Process Control / Automation / Instrumentation GPA: 3.89/4.0
PROFESSIONAL EXPERIENCE	Graduate Research Assistant Dec 2011 – present Mary Kay O'Connor Process Safety Center, Texas A&M University , College Station, TX <u>Dissertation Topic</u> : Safer and More Efficient Reactor Design and Operation for N-Oxidation of Alkylpyridines – From a Perspective of Reactor Modeling and System Analysis <ul style="list-style-type: none">• Reviewed mathematical theories for predicting system steady-state multiplicity and stability• Proposed explicit criteria in terms of reactor design and operation parameters for existence of multiple steady states and/or onset of oscillations• Designed simulation algorithms for screening the parameter space• Implemented the algorithms using MATLAB script to identify design and operation conditions that balance reactor safety and productivity• Designing and assembling experimental apparatus to facilitate validation of simulated reactor steady-state performance and dynamic characteristics <u>Academic Project</u> : Quantitative Risk Analysis (QRA) of Employing Micro-reactor Technology for Continuous Production of Chemicals <ul style="list-style-type: none">• Interpreted process flow sheet and extracted recipe information for both a microchemical pilot plant and a conventional semi-batch process for radical polymerization of methyl methacrylate (MMA)• Developed P&IDs for the pilot plant and the conventional process by utilizing chemical process safety, control and instrumentation knowledge• Studied and compared various methods for hazard identification (HAZID)

Undergraduate Research Assistant
Zhejiang University, Hangzhou, China

Nov 2010 – May 2011

Research Topic: Dynamic Modeling and Control of a Tubular Solid Oxide of Fuel Cell (SOFC)

- Built a first-principles dynamic model of a tubular SOFC unit based upon fluid dynamics, thermodynamics and electrochemistry
- Implemented the nonlinear state-space model in MATLAB Simulink and simulated dynamic responses of SOFC performance indicators to step changes in operation conditions
- Designed a control system based upon parametric sensitivity analysis and validated its capability of rejecting disturbances in operation conditions

Team Leader

Dec 2009 – Dec 2010

Provincial Innovative Research Program for Undergraduates

Project Title: Development of a Novel Flaw Detection System in Paper Industry

- Investigated an alternative method (based upon the breakdown voltage of air between two electrodes) to the conventional CCD photographing method for online detection of discontinuities in paper surface
- Designed and integrated a lab-scale demo system consisting of paper transmitting structure, motors, an Atmel ATmega16 microcontroller, signal processing circuits and a LCD display
- Tested the system performance and compared experimental value of breakdown voltage with its theoretical value calculated from Paschen's Law
- Coordinated among team members and kept track of project progress and budget
- Documented design specifications, test results and expenditure details, and presented project outcome to the program committee

Group Leader

Apr 2010 – Jul 2010

Undergraduate Course (Computer Control Instrumentation) Project

Project Title: Control System Design for a Brewery Process

- Interpreted process flow sheet and identified key process parameters
- Selected appropriate sensors, transmitters and actuators according to process specifications and operation conditions
- Customized a control system based upon Siemens S7 series PLC with proper modules such as CPU, I/O, Fieldbus interface and power supply
- Sketched control cabinet wiring diagram

**PROFESSIONAL
SKILLS**

Spoken and Written Languages: English (Fluent), Chinese (Native)

Modeling: MATLAB, Simulink, Aspen Plus, COMSOL Multiphysics

Programming: C, Assembly, Java, C++

Electronic Design and Simulation: Protel, Pspice

General: Origin, AutoCAD, JMP, MS-Office Suites, L^AT_EX

**HONORS AND
AWARDS**

Best Poster Presentation, Chemical Engineering Graduate Research Symposium Apr 2014

Chemical Engineering Graduate Student Association, Texas A&M University

Meritorious Winner for 2009 Mathematical Contest of Modeling
(Awards ratio: 294 / 1675 = 17.6%)
The Consortium for Mathematics and Its Application in U.S.

Feb 2009

REFERENCES Available Upon Request

WORK Eligible for Practical Training (Visa: F1)
AUTHORIZATION