

Monir Ahammad

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CAREER SUMMARY

- ◆ Three years of collaborative research experience between industry and academia in the field of process safety engineering which includes expertise in Process Hazard Analysis (PHA) techniques, OSHA Process Safety Management (PSM), Safe Operational Procedure Development, Facility Siting and Consequence Analysis, Risk Assessment etc.
- ◆ Computational Fluid Dynamics (CFD) research experience in the field of multiphase systems.
- ◆ Experimental and theoretical research experience of cryogenic boiling and process control.
- ◆ Three years of experience as chemical engineering lecturer and member of testing and consultancy bureau.

EDUCATION

PhD Candidate, Chemical Engineering Texas A&M University, College Station, TX <i>Research: LNG Safety (Cryogenic Boiling)</i>	Dr. Sam Mannan (Advisor) CGPA: 3.88/4.0	Dec 2015 (Expected)
BS & MS, Chemical Engineering University of Engineering, Dhaka, Bangladesh (BUET) <i>Research: Root Cause Diagnosis (Control Valve Stiction)</i>	Dr. Shoukat Choudhury (Advisor) 3.82/4.0 (MS) 3.81/4.0 (BS)	Jan 2012 (MS) Mar 2009 (BS)

PROFESSIONAL EXPERIENCE

Mary Kay O'Connor Process Safety Center (MKOPSC) Extension at QATAR 01/2014 – 06/2014
Intern Researcher, Advisor: (Dr. Luc Vechot)

- ◆ Performed computational fluid dynamics (CFD) research to study cryogenic film boiling.
- ◆ Participated in consequence modeling and risk assessment of medium scale cryogenic boiling field tests at Ras Laffan Industrial City, Qatar.
- ◆ Conducted experiments to understand boiling of cryogenic liquids on concrete during an accidental spill.
- ◆ Hands on experience in operating Differential Scanning Calorimeter (DSC), Thermo Gravimetric Analysis (TGA), Hartman Tube and Data Acquisition (DaQ) System.
- ◆ Documented meeting minutes of MKOPSC steering committee meetings and scribed HAZOP meeting between MKOPSC and Qatar Petroleum to identify hazards and assess the risk of conducting experiment in the Testing Prop 5 (TP-5) at Ras Laffan Emergency Safety College, Qatar.

Mary Kay O'Connor Process Safety Center (MKOPSC), College Station, TX 01/2012 – Present
Graduate Research Assistant, Advisor (Dr. Sam Mannan)

Selected Projects

- ◆ **Guidance to use Acrylic Plastic in Pressurized Systems**
 - Conducted state of the art review of the existing guidance to use acrylic plastic in pressurized systems.
- ◆ **Facility Siting (Multiple Confidential Clients)**
 - Identification of process hazards from studying Material - Energy Balance Sheets and PID.
 - Conducted dispersion and vapor cloud explosion calculations using PHAST to determine safe distances.
 - Writing draft report for the client reporting the major findings.
- ◆ **Upgrade DOW's Fire and Explosion Index and Chemical Exposure Index Software**
 - Upgraded DOW tool from visual basic 6.0 platform to .NET platform.
 - Continuous improvements of DOW software such as debugging, changing interface to be a user friendly.
- ◆ **Process Safety Procedures for Ready Made Garments (RMG) industries**
 - Develop a check list to follow by HSE department of RMG industries in Bangladesh in order to avoid accidents such as fire at Tazreen Garments.
- ◆ **Assessment of Two Phase Flow inside Pipe (Confidential Client)**
 - Developed an excel sheet to determine the flow pattern inside the pipe that is used for further calculations of vapor phase estimation and vapor cloud explosion study.

Department of Chemical Engineering, University of Engineering (BUET), Bangladesh 04/2009 – 01/2012
Lecturer (Advisor: Dr. Shoukat Choudhury)

- ◆ Offered courses are Reaction Engineering, Process Control Laboratory, Numerical Methods using MATLAB, Paper and Fertilizer Manufacturing, Unit Operations Laboratory, Fluid Mechanics, Heat and Mass Transfer Laboratory.
- ◆ Performed testing of air quality, water quality, compliance of fuel and chemicals according to local regulations and international standards.

- ◆ Consulted UNFCC to develop second national communication report, participated in carbon mitigation options and clean development mechanism projects for Bangladesh.
- ◆ Theoretical and experimental study of process control principles to develop tool for diagnosis of root cause as a part of MS requirement.

Zia Fertilizer Company Limited, Ashugonj, Bangladesh

2008

Student Engineer Intern (Short Term)

- ◆ Exposure of large chemical process to understand various chemical engineering principles.

LEADERSHIP

President, Bangladesh Student Association, Texas A&M, College Station, TX 01/2014 – Present

- ◆ Worked to achieve the goal of the organization which is to disseminate Bangladeshi culture among the students and community living at Bryan College Station area by organizing different events such as Annual Cultural and Welcome program, Brazos Valley Festival, Multicultural Fashion Show.
- ◆ Building camaraderie among the members and its alumni by organizing sports events.
- ◆ Mentored groups of student targeting to be the Global Future Leader.

Event Coordinator, Chemical Engineering Graduate Student Association (ChEGSA), Texas A&M 2013-2014

- ◆ Coordinated among the executive members, departmental staffs and general students to successfully organize ChEGSA events such as graduate students welcome dinner, etc.

Vice President, Chemical Engineering Student Association, Bangladesh 2008 - 2009

- ◆ Organized career development events which involved industry and academia such as Chemical Day 2008, Annual Picnic etc.

Student Organizer of Qatar Process Safety Symposium (QPSS) – 2014 at Qatar National Convention Center.

AWARDS

- ◆ Honorable Mention, Lamiya Zahin Memorial Scholarship - 2013, Mary Kay O'Connor Process Safety Center, Texas A&M University, College Station, TX.
- ◆ Dean's List Award for Undergraduate Engineering Study at BUET, consecutive years from 2005 to 2009.

COMPUTER COMPETENCE

- ◆ **CFD:** ANSYS –CFX/FLUENT (Certified Training 2014), FLACS (Certified training by Gexcon 2013), FDS.
- ◆ **Process Safety:** PHAST (Certified Training By DNV - 2012), CANARY (Certified Training By QUEST – 2013), Genie, Samlam, AgenaRisk
- ◆ **Process Simulators:** ASPEN-PLUS, HYSYS
- ◆ **Computational and Programing:** MATLAB, FORTRAN, Visual Basic

TECHNICAL WRITTING AND PUBLICATIONS

Contributions in Book Chapters/Sections

- ◆ Monte Carlo Simulations in the book titled as "Multiscale Modeling in Process Safety" in press.
- ◆ Reliability in the book titled as "Lees Safety Essentials".

Research Proposals

- ◆ Developed Quad Chart for a research proposal to chevron studying dispersion in complex terrain using CFD. (Status: under review)
- ◆ Wrote a section in the research proposal to US Federal Railroad Administration for studying PRV corrosion. (Status: Funded)

Publications

- ◆ Ahammad et al., " Guidelines for simulating cryogenic film boiling using ANSYS-FLUENT", International Symposium of MKOPSC, Hilton, College Station, TX – 2014 (Accepted)
- ◆ Ahammad et al., "Numerical Simulations of Cryogenic Film Boiling" AIChE Annual Conference, Atlanta, USA - 2014 (Accepted)
- ◆ Ahammad and Choudhury, " Harmonics – A new tool for detection of control valve stiction" – 5th International Symposium on Design, Operations and Control of Chemical Process, PSE Asia, Singapore – 2011
- ◆ Ahammad and Choudhury, "Detection of control valve stiction" In the proceedings of ICChE, Dhaka - 2009.

WORK AUTHORIZATION Eligible to work through Curricular Practical Training (CPT) and Optional Practical Training (OPT).