Amina Saeed

Perth, Australia | (+61) 420 420 042 | amina.saeed@research.uwa.edu.au

SUMMARY PROFILE

Detail-driven Chemical Engineer with a Master in Environmental Engineering, and 2 years of experience as a process engineer in offshore oil and gas seeks opportunities in chemical, water, and environment sector. Currently in the final write up stages of PhD studies in Environmental Engineering. Topic of research allows the leverage of chemical and environmental engineering knowledge and experiences to improve water quality monitoring and modelling in estuaries.

Certifications

- Surface facilities Equipment & Process — Mar & Apr-2015
- Gas Conditioning & Processing — Apr-2015
- Project Quality Management — Mar-2016
- HAZID & HAZOP Course — Feb-2015
- Gas Processing and LNG Workshop — Jan 2018
- HYSYS Simulation — Aug-2015
- Theoretical and practical training in four pilot training plants simulators of the company offshore platforms and assets. — Aug-2015
- Safety in Process Design — Jul-2015

EDUCATION

PHD IN ENVIRONMENTAL ENGINEERING — Jan 2018 - Present
University of Western Australia, Australia

MASTER OF SCIENCE IN ENVIRONMENTAL ENGINEERING — Aug 2010 - May 2012
New York University, USA
GPA 3.76/4 Summa Cum Laude

BACHELOR OF SCIENCE IN CHEMICAL ENGINEERING — Aug 2004 - Jan 2010
United Arab Emirates University, UAE
GPA 3.73/4 With Distinction

RESEARCH AND RELEVANT PROFESSIONAL EXPERIENCE

UNIVERSITY OF WESTERN AUSTRALIA , Australia
PhD Researcher

RESEARCH PROJECT : *Controls on the Swan-Canning estuary metabolism with numerical modelling and high-frequency sensor data* — Jan 2018 - Present
SUMMARY: This project is a collaborative initiative between the Department of Biodiversity, Conversation and Attractions (DBCA) and the Woodside Riverlab at UWA, to create an Estuary Observatory, aimed at using high temporal resolution field data to identify drivers and controls on the metabolism of the Swan-Canning estuary, and improving the ability of the Swan-Canning Estuarine Response Model (SCERM) to predict ecosystem metabolism and estuarine health.

- Prepared and presented the research project proposal including the scope, project timeline, millstones, budget and deliverables.
- Prototyped and co-designed a water quality monitoring system and its mooring in addition to achieving successful deployment in the Swan Canning River.
- Liaised with the water quality sensors manufacturers during the purchase period, and for maintenance inquiries.
- Responsible for planning, testing and calibration of water quality sensors as a part of routine maintenance of the water quality monitoring system.
- Analyzing high frequency sensor data and comparison to the model output of 3D water quality model for model calibration, validation and improvement.
- Liaised with DBCA and Department of Transport (DoT) for the selection of monitoring sites, deployment of mooring and monitoring system, and safety and field plans.

- Prepared an operating procedures for the water quality monitoring system with the design, maintenance and calibration procedures.

RESEARCH PROJECT :*Thermal conductivity of hydrocarbons and refrigerants* Jun 2016 – Dec 2017
SUMMARY: This project aimed at measuring highly accurate thermal conductivities in laboratory in a range of high and low temperatures and pressures to improve current thermodynamic empirical models in REFPROP.

- Constructed and tested a transient hot wire sensor for gas and liquid thermal conductivity measurements, analyzed and compared of experimental measurement against NIST Reference Fluid Thermodynamic, new data for model calibration and transport Properties Database (REFPROP), V 9.1.
- Conducted thermal conductivities measurements for gases and liquids for Mitsubishi heavy industries alternative refrigerants and ternary Gas Processing Association (GPA) mixtures, analyzed results which help improve thermodynamic models and the transitioning to lesser impact refrigerants.
- Prepared binary and ternary refrigerants and hydrocarbon mixtures for measurements of thermal conductivity.
- Prepared mixture preparation procedure and schematics for the injection and the measurement cell.

RESEARCH PROJECT: *Microwave cavity research project* Oct 2016 - Jun 2016
SUMMARY: This project aimed at testing a proof of concept of a microwave sensor for detection of solid formation in LNG mixtures.

- Designed, simulated, and constructed a process system to deliver Ethane at low temperature and high pressure for microwave sensor proof of concept testing.
- Achieved successful testing for a proof of concept for a microwave sensor for detection of solid formation in liquefied natural gas (LNG) mixtures.
- Accomplished electromagnetic fields finite element modelling of a microwave cavity sensor in COMSOL Multiphysics for cavity design and data analysis.

ABU DHABI MARINE OPERATING COMPANY (ADMA-OPCO) Oct 2014 - Oct 2016
Discipline Engineering Division ,UAE
Process Engineer

- Coordinated and was a focal point for a project titled Hazard and Operability Study (HAZOP) facilitators assessment and development, and a project titled HAZOP actions close-out and developer of action tracker template.
- Created a procedure document PRO-162 with details of assessment and competency assurance process of Hazard and Operability facilitator candidates in ADMA-OPCO.
- Conducted a verification study of Flare and relief system for a Gas Gathering Unit (GGU) applying British Petroleum (BP) standards (e.g.GP44-70, 44-80) and American Petroleum Institute (API 520,521).
- Performed hydraulic modelling for a main oil pipeline from a super complex to process facilities in PIPESIM software.
- Constructed a steady state modeling for gas cluster in HYSYS software.
- Modelled well-head towers vents dispersion in PHAST software.
- Scribed for numerous HAZOP studies and prepared terms of reference as well as HAZOP study reports (e.g. Alternative Fuel Gas source for flare ignition, Annulus bleed down process).
- Completed theoretical and practical training on process operations, start up, shutdown, equipment changeover, and instrument controls for units such as oil and gas plant (major equipment separators, de-salter, and stabilizer), as well as gas dehydration and Gas sweetening units.
- Editor-in-chief of Professional Process Community newsletter.

INTERNSHIP

DET NORSKE VERITAS (DNV) — Jul 2007 - Aug 2007
Environment and Safety Division, UAE — Jul 2008 - Dec 2008
Chemical Engineer Intern

- Conducted dispersion modelling of chemical releases from Disulfide Oil from a liquefied natural gas and gas-to-liquid facility in Ras Laffan Industrial City in DNV software PHAST.
- Researched developing a new safety barrier method unique for DNV resulted in being awarded a grant.
- Completed Quantitative Risk Assessment (QRA) and noise modelling training workshops (Jul 2007 to Aug 2007).
- Planned and represented DNV in Abu Dhabi International Petroleum Exhibition and Conference ADIPEC 2008.

OTHER EXPERIENCES

UNIVERSITY OF WESTERN AUSTRALIA — Feb - May 2020
Graduate Assistant — Jun 2016-Dec 2017

- Directed laboratory and tutorial sessions, explained solutions to problems and evaluated written design projects and presentations in Finite Element Method unit and Unit operations and unit processes (Feb - May 2020) and (June 2016-Dec 2017) respectively.

NEW YORK UNIVERSITY ABU DHABI — Oct 2012 - Jun 2014
Engineering Department, UAE
Global Academic Fellow

- Led tutorial and laboratory sessions for engineering courses (Creativity and innovation, Experimental Methods, Conservation Laws, Solid Mechanics, Engineering Dynamics, Engineering Materials, Statics, and Fluid Mechanics, Engineering Materials, Conservation Laws, Fluid Mechanics, and Heat Transport)
- Operated equipment, prepared manuals, and conducted experiments for freshman engineering classes.

NEW YORK UNIVERSITY — Jan 2012 - May 2012
Tandon School of Engineering, US
Graduate Assistant

- Researched durability of a novel fiber optic oxygen sensor for real-time in-situ aerobic bio-remediation of petroleum products contaminated groundwater, run laboratory tests, and analyzed and reported the results in Master thesis project.
- Tutored and graded course work for both lecture and laboratory sessions of Introduction to Civil Engineering course - CE1002.

UNITED ARAB EMIRATES UNIVERSITY — Feb 2009 - Apr 2010
College of Engineering, UAE
Student Researcher

- Led senior design team in designing a Gas to Liquid Plant, planned progress meeting, conducted reactors research and calculations, and helped with modelling and cost estimation in bachelor thesis project.
- Researched literature and analysed methane conversion for the oxidation of methane for a research titled GTL Feed by Catalytic Oxidation of Methane in Plate Reactor.
- Evaluated free radical polymerization of high molecular weight Polyacrylamide for Enhanced Oil Recovery (EOR) and presented at The Chancellors Undergraduate Research symposium 28-May 2007-2008.

MEMBERSHIP/AWARDS /AFFILIATIONS

- Member of Australian Water Association (AWA) — 2019-present
- Member of Institution of Chemical Engineers (IChemE) — 2016-present
- Member of Murdoch Southsiders Toastmasters Club — 2016-2017
- Member of the Sheikh Mohammad bin Zayed Scholars Program and NYU Abu Dhabi Alumni board and received Sheikh Mohammad bin Zayed Scholars Program and NYU Abu Dhabi Scholarship — 2014-2016 & 2009-2010
- Outstanding Engineering Student Award — 2008/09 – 2009/10

- First prize winner of The Chancellors Undergraduate Research Award (CURA) 2008
- UAE Government Scholarship for International Students to study at UAE University (scored top 2 percent in the UAE national high school exam) 2004

SKILLS

- Software: Microsoft suit, Python, R studio, QGIS, HYSYS, Linux, REFPROP,GitHub, Abaqus CAE.
- Languages: English (Full professional proficiency), Arabic and Somali - Native, German (Beginner).

PUBLICATIONS AND POSTERS

- Mylona, S. K., Hughes, T. J., Saeed, A. A., Rowland, D., Park, J., Tsuji, T., May, E. F. (2019). Thermal conductivity data for refrigerant mixtures containing R1234yf and R1234ze(E). Journal of Chemical Thermodynamics, 133. http://dx.doi.org/10.1016/j.jct.2019.01.028. 2019
- Huang, P., Trayler, K., Wang, B., Saeed, A., Oldham, C. E., Busch, B., & Hipsey, M. R. (2019). An integrated modelling system for water quality forecasting in an urban eutrophic estuary: The swan-canning estuary virtual observatory. Journal of Marine Systems, 199. http://dx.doi.org/10.1016/j.jmarsys.2019.103218. 2019
- Saeed, A., Gerrard, S., Huang, P., Trayler, K., Oldham, C., Wang, B., Hipsey, M. Integration of routine and high-frequency data to improve 3-D water quality model predictions. Unravelling metabolism black-box using a control-volume approach. Poster presented at: Global Lake Ecological Observatory Network (GLEON21) meeting; 2019 November 4-8; Ontario, Canada. 2019
- Saeed, A., Gerrard, S., Huang, P., Trayler, K., Oldham, C., Wang, B., Hipsey, M. Integration of near real-time high-frequency water quality data from an observatory to a 3D aquatic water quality numerical model. Poster presented at (GLEON20) meeting; 2018 December 3-7; Perth, Australia. 2018
- Mylona, S. K., Saeed, A., Hughes, T. J. Thermal Conductivity Measurements of Ternary Mixtures Containing Methane, Propane, and Heptane, (2018) [Under review]. 2018

VOLUNTEERING

- Volunteered and provided helpdesk support for participant's registration and conference sessions in Estuarine, Coastal and Shelf Science Conference (ECSA 57). Perth, Australia. 3-6 Sept-2018
- Volunteered in NYU AD global education department through being a trip supervisor for Hult Prize research team to Dharavi, in India and supervised Engineers for Social Impact project and Habitat for Humanity in Sri Lanka to build a community center in Negombo and housing for 16 families in Galle. 2013-2014
- Volunteered NYU Abu Dhabi institutional programs such as career development center events and admission candidate weekends, helping with registrations, airport runs, events preparations. 2012-2014

REFEREES

- Michael John Godfrey –Advisor Process Safety at BP Kuwait- Email: Michael.Godfrey1@uk.bp.com
- Paulo Coelho- Professor at New York University- Email: pc92@nyu.edu
- Rijk Van Andel- Senior Risk Specialist at Nawah Energy Company-Email: rijkvandel@gmail.com