

# Amina Saeed

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## EDUCATION

PhD in Environmental Engineering  
UNIVERSITY OF WESTERN AUSTRALIA  
School of Civil, Environmental and Mining Engineering

Perth, Australia  
Jan 2018 - Present

Master of Science in Environmental Engineering  
NEW YORK UNIVERSITY  
Tandon School of Engineering  
GPA 3.76/4 Summa Cum Laude

New York, USA  
Aug 2010 - May 2012

Bachelor of Science in Chemical Engineering  
UNITED ARAB EMIRATES UNIVERSITY  
College of Engineering  
GPA 3.73/4 With Distinction

Al Ain, UAE  
Aug 2004 - Jan 2010

## RESEARCH AND PROFESSIONAL EXPERIENCE

UNIVERSITY OF WESTERN AUSTRALIA  
School of Civil, Environmental and Mining Engineering  
PhD in Environmental Engineering

Jan 2018 - Present

- Researching controls on the Swan-Canning estuary metabolism with numerical modelling and high-frequency sensor data as a part of PhD project.
- Leading laboratory demonstrations of Abaqus CAE software- Finite Element Method unit teaching 242 students, semester 1, 2020.
- Designed a water quality monitoring system and mooring and achieved deployment in the Swan Canning River Dec, 2019.
- Analyzed high frequency sensor data and compared it to model output for model calibration and validation.
- Presented a poster titled: Integration of routine and high-frequency data to improve 3-D water quality model predictions. *Unravelling metabolism black-box using a control-volume approach* at Global Lake Ecological Observatory Network (GLEON21) meeting 4-8 November 2019.
- Presented a poster titled: Integration of near real-time high-frequency water quality data from an observatory to a 3D aquatic water quality numerical model at GLEON20 meeting 3-7 December 2018, highlighting sensors importance in understanding estuarine systems.
- Volunteered and provided helpdesk support for participant's registration and conference sessions in Estuarine, Coastal and Shelf Science Conference (ECSA 57). 3-6 September 2018, Perth, Australia.

UNIVERSITY OF WESTERN AUSTRALIA  
School of Mechanical and Chemical Engineering  
Thermal conductivity research project

Jun 2016 - Dec 2017

- 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 measurements for Mitsubishi heavy industries alternative refrigerants and ternary Gas Processing Association (GPA) mixtures thermal conductivities for gases and liquids, analyzed results which helps improve thermodynamic models and transitioning to lesser impact refrigerants.
- Directed laboratory sessions, explained solutions to problems in tutorial sessions, and evaluated written design projects and presentations in unit operations and unit processes (ENSC3019).

UNIVERSITY OF WESTERN AUSTRALIA  
School of Mechanical and Chemical Engineering  
Microwave cavity research project

Oct 2016 - Jun 2016

- 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

Process Engineer

- 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).
- Coordinated and was a focal point for a project titled Hazard and Operability Study (HAZOP) facilitators assessment and development.
- Coordinated and was a focal point for 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.
- 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 wrote 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, desalter, and stabilizer), as well as gas dehydration and Gas sweetening units.
- Editor-in-chief of Professional Process Community newsletter.

NEW YORK UNIVERSITY ABU DHABI

Oct 2012 - Jun 2014

Engineering Division

Global Academic Fellow

- Led tutorial sessions for engineering courses (Creativity and innovation, Experimental Methods, Conservation Laws, Solid Mechanics, Engineering Dynamics, Engineering Materials, Statics, and Fluid Mechanics) for freshman engineering classes.
- Taught engineering laboratories (Engineering Materials, Conservation Laws, Fluid Mechanics, and Heat Transport) operated equipment, prepared manuals, and conducted experiments.
- Volunteered NYU Abu Dhabi institutional programs such as career development center events and admission candidate weekends (2012-2014), helping with registrations, airport runs, events preparations.
- Volunteered in global education through being a trip supervisor for Hult Prize research team to Dharavi, in India (2013) and supervised Engineers for Social Impact project and Habitat for Humanity in Sri Lanka to build a community center in Negombo (2013) and housing for 16 families in Galle (2014).

NEW YORK UNIVERSITY

Jan 2012 - May 2012

Tandon School of Engineering,

NY, 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.
- Demonstrated ArcGIS software for preparation of topographic maps and engineering reports in Introduction to Civil Engineering course- CE 1002).

UNITED ARAB EMIRATES UNIVERSITY

Feb 2009 - Apr 2010

College of Engineering

Al Ain, 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) 28-May 2007- 2008.

## INTERNSHIPS

DET NORSKE VERITAS (DNV)  
Environment and Safety Division  
Chemical Engineer Intern

Jul 2008 - Dec 2008  
Jul 2007 - Aug 2007  
Abu Dhabi, UAE

- 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.

## AWARDS /AFFILIATIONS

- Member of Murdoch Southsiders Toastmasters Club (2016-2017).
- Member of the Sheikh Mohammad bin Zayed Scholars Program and NYU Abu Dhabi Alumni board (2014-2016).
- Sheikh Mohammad bin Zayed Scholars Program and NYU Abu Dhabi Scholarship.
- Outstanding Engineering Student Award (2008-2009) and (2009-2010).
- First prize winner of The Chancellors Undergraduate Research Award (CURA 2008).
- UAE Government Scholarship for International Students to study at UAE University (2004), scored top 2 percent in the UAE government high school exam.

## SKILLS

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

## PUBLICATIONS

- Co-authored a published paper titled: Thermal Conductivity Data for Refrigerant Mixtures Containing R1234yf and R1234ze (E), published 28-01-2019.
- Co-authored a published paper titled: An integrated modelling system for water quality forecasting in an urban eutrophic estuary: The swan-canning estuary virtual observatory, published 08 July 2019.
- Co-authored a paper titled: Thermal Conductivity Measurements of Ternary Mixtures Containing Methane, Propane, and Heptane, 2017 [Under review].

## REFEREES

- UNIVERSITY OF WESTERN AUSTRALIA: Dr. Tom Hughes - Tom.Hughes@monash.edu
- ABU DHABI MARINE OPERATING COMPANY : Michael John Godfrey - Michael.Godfrey1@uk.bp.com
- NEW YORK UNIVERSITY ABU DHABI: Prof. Paulo Coelho -pc92@nyu.edu
- NEW YORK UNIVERSITY : Prof. Anne Ronan- aronan@nyu.edu
- UNITED ARAB EMIRATES UNIVERSITY : Dr. Mohamed A. Al Nakoua - manakoua@yahoo.co.uk
- DET NORSKE VERITAS: Rijk Van Andel- rijkvandel@gmail.com