



Yousef Alosairi

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Kuwait

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WORK EXPERIENCE

Cardiff University

September 2009 — April 2011

Demonstrator

- Laboratory demonstration for the undergraduate students at the School of Engineering
- Delivering tutorial classes related to Environmental Hydraulics

Cardiff University

April 2011 — June 2011

Research Associate

- Numerical model development
- Validation of numerical model
- Sensitivity analyses of numerical model

Kuwait Institute for Scientific Research

February 2012 — to present

Research Associate Scientist

- Coordinate resources and support career development plans at various levels.
- Lead and execute client funded research, services and general projects.
- Formulate research proposals.
- Organize training courses.
- Support and mentor junior staff.
- Technical reporting of hydro-environmental incidents

Journal of Ecohydraulics

January 2016 — to present

Editorial Review Panel (Associate Editor)

Environment Agency Abu-Dhabi

August 2017 — November 2017

Consultant

QUALIFICATIONS

- Hydro-dynamics and water quality modelling.
- Field instrumentation and surveying techniques for shallow water.
- Field monitoring systems.
- Technical diving for field investigation and surveying.

EDUCATION

B-Eng (Honours) in Civil Engineering (with Architecture)

September 2002 — June 2006

Cardiff University, U.K.

Cardiff University, U.K.

PhD in Hydro-Environmental Engineering**September 2007 — April 2011**

Cardiff University, U.K.

Thesis Title: 'Hydro-environmental modelling of the Arabian Gulf and Kuwait Bay'**EXPERIENCE****2002-2006**

Yousef Alosairi graduated with B-Eng(Hons) in Civil Engineering with Architecture from Cardiff University, United Kingdom (2006). The graduation project during this degree focused on assessing the the current water front developments within the Kuwait, Gulf region. This research work were conducted under a very prominent figure in the field of hydro-environment Prof. Roger Falconer. Here, with a multifaceted theoretical approach the research considered how water flux within the planned embayments would affect the ecology of the development areas. In considering multiple contexts as potential efflux of polluted water, effects on wildlife and also effects on possible future inhabitants, the sustainability analyses were undertaken for such new developments. It was heartening to realize that the hypotheses within this area of research had real implications to actual developments and aided the development of more ecologically forgiving and sustainable solutions.

2006-2007

With the increasing interest in the field of hydro-dynamics and hydraulics Yousef Alosairi resumed his education and received MSc in Water Engineering from Cardiff University, United Kingdom (2006). During the course he learned the basics of numerical techniques and developed a simple models which were applied in various aspects of the hydro-environment. Most notable the research project was also conducted under Prof Roger Falconer supervision focusing on the fundamental dynamic behavior of the Arabian Gulf using a relatively advanced model. The results of the research received a lot of interest particularly in the Gulf region when it were presented in a number of international conferences.

2007-2011

With the continuous interest in the field of numerical modelling Yousef Alosairi continued his education to the highest level and obtained a PhD from Cardiff University, United Kingdom (2011) under the supervision of both Prof. Roger Falconer and the well recognized figure Prof Jorg Imberger (Centre for Water Research, University of Western Australia). The research focused on developing the understanding the detailed hydrodynamic processes such as turbulence and mixing in the Arabian Gulf region. A numerical model has been developed and analysed in this sense. Furthermore, a water quality model was developed to understand phosphorus levels in Kuwait Bay. The research received a large interest at various national and international levels and it was presented in the International Association for Hydro-Environmental Research (IAHR) conferences. Also the outcomes of his research were published in highly reputed peer reviewed journals. Following this work, Yousef became an active member in the IAHR and soon was selected as a President of IAHR student chapter U.K. He was also involved in demonstrating lab experiments and tutorials in the field of hydraulic to undergraduate students.

2012-Present

Soon after completion the higher education Yousef Alosairi has joined Kuwait Institute for Scientific Research (KISR) and worked under the Coastal Management Program. He started by formulating his research ideas and converted them into solid research proposals that were internally funded. Following that he progressed swiftly and his research proposals exceeded KISR boundaries to received large funds from local clients. The research project were mainly focused on solving several hydro-environmental matters within Kuwait and the Gulf regions such as fish kills, nutrient accumulation and pollutants transport. This involved comprehensive field surveys and the application of numerical models at sophisticated levels. He received a clear recognition in KISR for his management skills, and therefore he was selected to be a resource coordinator for the Coastal Management Program. Along with the projects he lead, he played a key role in a number of projects as a task leader and also became a member of several scientific committees within the country. He is continuously invited by official bodies to give lectures and talks related to the hydro-environment at various levels. He also provided a number of training courses related to numerical modelling and best practice. Moreover, Yousef is also responsible to guide and mentor junior staff within KISR and university students for both, undergraduate and post-graduate and at national and international levels.

RESEARCH PROJECTS

Title: Investigating the effects of bridge piers on the hydrodynamics of Kuwait Bay using numerical model

Client: Kuwait Institute for Scientific Research

Position: Project Leader

Value: \$18,200

Duration: 1/8/2012 to 3/12/2012

Title: Assessment of desalination plant discharge location on Kuwait Bay using Numerical Model

Client: Kuwait Institute for Scientific Research

Position: Project Leader

Value: \$33,100

Duration: 1/11/2013 to 31/3/2014

Title: The optimal and sustainable length of the emergency outfalls along Kuwait coastline

Client: Ministry of Public Works (Kuwait)

Position: Project Leader

Value: \$579,260

Duration: 20/10/2013 to 20/4/2015

Title: Development of three-dimensional hydro-environmental numerical model for the Arabian Gulf

Client: Kuwait Institute for Scientific Research

Position: Task Leader

Value: \$106,000

Duration: 4/4/2014 to 4/10/2015

Title: The effects of developments in Mesopotamian Marshland on Boubyan and Warba Islands

Client: Kuwait Foundation for the Advancement of Sciences

Position: Project Leader

Value: \$561,000

Duration: 1/9/2014 to 1/12/2017

Title: Ecological assessment and restoration plan of terrestrial biodiversity in Umm Al Namil Island, Kuwait

Client: Kuwait Foundation for the Advancement of Sciences

Position: Team member

Value: \$294,000

Duration: 1/4/2015 to 1/3/2017

Title: Development of backtrack oil spill model for the Arabian Gulf

Client: Kuwait Institute for Scientific Research

Position: Task leader

Value: \$60,000

Duration: 1/2/2015 to 1/2/2016

Title: Integrated Coastal Management Zone (ICZM), for the State of Kuwait

Client: Environmental Protection Agency (Kuwait)

Position: Principal Investigator

Value: \$1,800,000

Duration: 1/9/2016 to 1/9/2019

PUBLICATIONS (CONFERENCE)

- **Alosairi Y.**, Al-Enezi E. and Falconer R. A. (2008), Hydro-environmental Modelling of Kuwait Bay and the Arabian Gulf, The Second Gulf Conference and Exhibition On Environment and Sustainability, Kuwait.
- Al-Enezi E., **Alosairi Y.**, Bockelmann-Evans B. N. and Falconer, R. A. (2010), Modelling of phosphorus adsorption in estuarine sediment, in Christodoulou G. C. et al. (Eds.), Proceedings of the 6th International Symposium on Environmental Hydraulics, Athens, 2, 759-764.
- **Alosairi Y.**, Falconer R. A., Imberger J. (2010), Three-dimensional hydro-environmental modeling of the Arabian (or Persian) Gulf, in Tao et al, Proceedings of the 9th international conference on hydroinformatics 2010, 1, 132-138.
- **Alosairi, Y.**, Al Enezi, E., Falconer, R. A., & Imberger, J. (2011). Modelling Phosphorus Sorption Processes in Kuwait Bay: Effects of Sediment Grain Size. In Proceedings of the 34th World Congress of the International Association for Hydro-Environment Research and Engineering: 33rd Hydrology and Water Resources Symposium and 10th Conference on Hydraulics in Water Engineering (p. 3175). Australia
- **Alosairi Y.** and Pokavanich T. (2013), Numerical Modelling of Hydro-Environmental Impacts of Jaber Al-Sabah Bridge Piers on Kuwait Bay, in Zhaoyin et al, Proceedings of the 35th IAHR World Congress, Tsinghua University Press, Beijing.
- Pokavanich, T. and **Alosairi, Y.** (2013), Three-dimensional modelling of summer hydrodynamic and water quality characteristics of upper Arabian (Persian) Gulf. International Conference on Environmental Challenges in the ROPME Sea Area, March, Kish, Iran.
- Pokavanich, T., **Alosairi, Y.**, Graaff, R., Morelissen, R., Verbruggen, W., Al-Refail, K., Taqi, A., Al-Said, T. (2014), Three-dimensional hydro-environment characterization and modeling of the northern Arabian Gulf. Coastal Engineering Proceedings 1(34), management.41.
- **Alosairi Y.**, Pokavanich T., Taqi A., Hammad A., (2015), Physical processes affecting pollutant levels discharged from outfalls in Sulaibikhat Bay: Kuwait, Proceeding of the

36th IAHR world congress, Delft-The Hague, 28 June-3 July 2015, (in press).

- Pokavanich, T., **Alosairi, Y.**, Graaff, R., Morelissen, R., Verbruggen, W., Al-Rifaie, K., Taqi, A., Al-Said, T. (2015), Three-dimensional Arabian Gulf Hydro-environmental Modeling using Delft3D. Proceeding of the 36th IAHR world congress, Delft-The Hague, 28 June-3 July 2015, (in press).
- Karam Q., Taqi A., Al-Houti D., Al-Dosery N., **Alosairi Y.**, Pokavanich T., Variability of phosphate nutrient concentrations in sediments of Kuwait marine environment, (2015), Proceeding of the 36th IAHR world congress, Delft-The Hague, 28 June-3 July 2015, (in press).
- Pokavanich, T. and **Alosairi, Y.** (2016): Tidal Characteristics in Kuwait from Long-term Measurement and Numerical Simulation, 35th International Conference on Coastal Engineering. Antalya, Turkey
- Chow A. C., Adams E. E., Al-Enzi B., Al-Shayji K., Pokavanich T., **Al-Osairi Y.**, Morelissen R., Verbruggen W., (2016), Far field dilution of desalination brine discharge in the northern Arabian Gulf, International Symposium on Outfall Systems, Ottawa, Canada.
- Morelissen R., de Graaff R., Vlijm R., Pokavanich T., **Al-Osairi Y.**, Chow A., (2016), Three-dimensional numerical modelling of the Arabian Gulf with the Arabian Gulf community model, 3rd Arabian Coast Conference, Dubai, U.A.E.
- Subramaniam N. and **Al-Osairi Y.**, (2016), Probability and statistical characteristics of seawater turbidity around Boubyan Island, Kuwait, 3rd Arabian Coast Conference, Dubai, U.A.E.
- Al Sulaiman N., **Alosairi Y.**, Pokavanich T., (2016), Tidal harmonic analysis around Boubyan and Warba Islands: Northern Arabian Gulf, 3rd Arabian Coast Conference, Dubai, U.A.E.
- **Alosairi Y.** and Pokavanich T., (2016), Numerical model study of the outfalls pollution levels in Jahra and Sulaibikhat Bays: Kuwait, 3rd Arabian Coast Conference, Dubai, U.A.E.

**PUBLICATIONS
(PEER REVIEW
JOURNAL)**

- **Alosairi Y.**, Imberger J. and Falconer R. A. (2011), Mixing and flushing in the Arabian/Persian Gulf, *Journal of Geophysical Research*, doi:10.1029/2010JC006769.
- Pokavanich, T., **Alosairi, Y.** (2014), Summer Flushing Characteristics of Kuwait Bay. *Journal of Coastal Research* 30-5, 1066 – 1073.
- **Alosairi Y.**, Pokavanich T., (2017), Seasonal Circulation Assessments of the Northern Arabian/Persian Gulf, *Marine Pollution Bulletin*, 116 (1-2).
- Al-Salem K., **Alosairi Y.**, Al-Rashed A., (2017), Development of backtrack numerical model for offshore oil spills, *Journal of Engineering Research*, 5 (1).
- Pokavanich, T. and **Alosairi, Y.** (2016), Measurement of seasonal variability of hydro-environmental characteristics of Kuwait Bay, *Arabian Journal of Geosciences*, 9:671, DOI 10.1007/s12517-016-2682-5
- **Alosairi Y.**, and Pokavanich T., (2017), Residence and transport time scales associated with Shatt Al Arab discharges under various hydrological conditions estimated using a numerical model, *Marine Pollution Bulletin*, 118(1), 85-92.
- Neelamani S. and **Alosairi Y.**, (2017), Probability distributions of seawater turbidity around Boubyan Island in Kuwait, *Arabian Journal of Geosciences*, 10(19), 417.
- Neelamani S. and **Alosairi Y.**, (2017), Probability distribution, statistical characteristics and power potential of seawater velocity around Boubyan Island in Kuwait, *Journal of Engineering Research*, (Accepted)
- **Alosairi, Y.**, Pokavanich, T., & Alsulaiman, N. (2018). Three-dimensional hydrodynamic modelling study of reverse estuarine circulation: Kuwait Bay. *Marine Pollution Bulletin*, 127, 82-96.
- Al-Sulaiman N., **Alosairi Y.**, Pokavanich T., (2017) Tidal harmonic analyses and storm surge assessment at the northern west region of the Arabian Gulf. *Ocean Engineering*, (in preparation)
- **Alosairi Y.** & Alsulaiman N. (2019), Hydro-environmental processes governing the formation of hypoxic parcel in an inverse estuary: Model validation and discussion,

Marine Pollution Bulletin, (in submission process)

- **Alosairi Y. & Alsulaiman N. (2019)**, Hydro-environmental processes governing the formation of hypoxic parcel in an inverse estuary: Physical forces assessment, Marine Pollution Bulletin, (in preparation)

TECHNICAL REPORTS

Title: Preliminary numerical assessment of accidental release of radionuclide substance from Abu Shehir (Iran) nuclear power plant

Authors: Alosairi Y. and Pkavanich T.

Date: 1/9/2014

Submitted to: Kuwait Institute for Scientific Research upper management

Title: Field and numerical investigation of the minor fishkill in Sulaibikhat Bay and Shuwaikh beach

Authors: Alosairi Y. and Pkavanich T.

Date: 15/6/2015

Submitted to: Kuwait Institute for Scientific Research upper management

Title: Estimating the arrival time and concentration levels of Abu Ali petrochemical complex (Iran) to Kuwait territorial waters.

Authors: Alosairi Y.

Date: 11/7/2016

Submitted to: Kuwait Institute for Scientific Research upper management

GENERAL SKILLS

- Research
- Hydrodynamics
- Water Quality
- Field survey
- Field instrumentation
- Environmental Impact Assessment using numerical model
- Technical diving for field investigation purposes
- Coastal Engineering
- Hydraulics
- Hydroinformatics
- Programming
- Environmental Awareness
- Environmental Issues
- Numerical Analysis
- Environmental Consulting
- Mathematical Modelling
- Training
- Aerial photography at coastal areas

EXPERIENCED NUMERICAL MODELS

- **OTIS:** One-dimensional stream solute Transport with lateral Inflow and Storage
- **DIVAST:** Depth Integrated Velocities And Solute Transport
- **TRIVAST:** Three-dimensional layer Integrated Velocities and Solute Transport
- **ECOMSED:** Estuarine and Coastal Ocean Model and SEDiment transport
- **ELCOM:** Estuary, Lake and Coastal Ocean Model
- **CAEDYM:** Computational Aquatic Ecosystem DYNamics Model
- **HEC-RAS:** Hydrologic Engineering Centers River Analysis System
- **COMPASS:** COde for Modelling PArtially Saturated Soils
- **MODFLOW:** Modular finite-difference ground-water flow model
- **RMA-10:** RMA-10 is a three-dimensional finite element model for stratified flow
- **Delft3D:** 2-D and 3-D suite for modelling of free surface flows

- **Delft-WAQ:** Water Quality model
- **CORMIX:** A Hydrodynamic Mixing Zone Model and Decision Support System for Pollutant Discharges into Surface Waters

COMPUTER SKILLS

- FORTRAN Programming Language
- MATLAB
- Microsoft Office
- Visual Basic
- Adobe Photoshop and Illustrator
- Tecplot
- Sketchup
- Autocad
- Pro Origin

LANGUAGES

- Arabic (mother language)
- English (Excellent)
- French (Beginner)

OTHER INTERESTS

- Sports
- Travel
- Art
- Water-related activities
- Cooking
- Electronics
- Calligraphy
- Illustration

REFERENCES

Prof R. A. Falconer
Cardiff School of Engineering
Cardiff University, U.K
Email: Falconerra@cf.ac.uk

Prof J. Imberger
University of Miami, Florida, USA
Email: jimberger@rsmas.miami.edu, imbergerjorg@gmail.com