

Curriculum Vitae

NAME: **BADER AL-ANZI**
NATIONALITY: Kuwaiti
DATE OF BIRTH: 11/03/1970
MARITAL STATUS: Married **SEX:** Male
ADDRESS: Department of Environmental
Technologies Management, College for
Woman, Kuwait University
P. O. Box 5969 13060-Safat-Kuwait
TELEPHONE: +965-97885589/+965-24983034
FAX: 24983123
EMAIL ADDRESS: dr.bader@ku.edu.kw

EDUCATION

October 2004-June 2007 Ph.D. in Chemical Engineering,
Loughborough University, UK, June
2007.
Thesis: "*Performance of A Novel
Confined Plunging Liquid Jet Reactor
Incorporating Annular Riser*"

September 2003-September 2004 PhD (Graduate) courses from University
of Waterloo, Canada.

September 1998-December 2000 M.Sc. in Chemical Engineering, Kuwait
University, Kuwait December 2000.
Thesis: "*Corrosion Monitoring in
Desalination Plants*"

September 1990-May 1995 B.Sc. in Chemical Engineering, Arizona
State University, USA.

EXPERIENCE

September 2009 – Present

Assistant Professor

Kuwait University, College for Woman,
Department of Environmental
Technology Management (ETM).

Ongoing Project

1. Nonconventional aeration utilizing **Confined Plunging Liquid Jet Reactor (CPLJR)**. Budget = 2000 KD. April 2011 – October 2012. Funded by KU research office.
2. Manufacturing and implementing a **patented aerator system** by American Aerators Company, USA. Funded by Sabah Al-Ahmad Center for Creativity and Giftedness (SAC), budget = \$ 88,000. July 2012 – present.

July 2007-December 2009

Associate Researcher Scientist

Kuwait Institute for Scientific Research,
Water Resources Division,
Water/wastewater Technologies
Department.

Activities included the coordination of works at Sulaibiya Wastewater Research Plant and initiating new research ideas and proposals leading to projects as well as working in other projects in the same field.

Proposals

1. Domestic Wastewater Treatment Utilizing Confined Plunging Liquid Jet Bioreactor (proposal, expected budget \$169,671 ≈ 49,911 KD).
2. Treatment of industrial wastewater from Kuwait Tiles Factory (proposal, expected budget \$236,573 ≈ 64,955 KD).
3. Wastewater Treatment Employing Wetland Technology (proposal, expected budget \$273,362 ≈ 75,068 KD).
4. Novel Solar Desalination Process (research idea).
5. Corrosion Monitoring in Desalination Plant (research idea).

Completed Projects:

1. Task Leader (TL) for the ongoing project “**Performance Evaluation of Rigga Secondary Treatment System**, budget \$346,073 ≈ 102,000 KD”;
2. Team Member for the ongoing project “**Nitrogen and Phosphorus Reduction/Removal from RO Brine Wastewater-Bench and Pilot Scale Study**, budget \$237,476 ≈ 70,000 KD”

Consultation

1. During the period from July 2008 – September 2008 worked as a consultant for **Kuwait Tiles Factory** to assess and evaluate the industrial wastewater effluent from the factory and to propose feasible and viable treatment process for reuse or safe discharge.
2. Part of KU delegation team visited Korea to discuss research collaboration issues in the domain of wastewater treatment and soil remediation.

July 2002- July 2007

Research Associate

Kuwait Institute for Scientific Research,
Kuwait. Water Resources Division,
Water/wastewater Technologies
Department.

Activities included Rehabilitation of Sulaibiya Research Plant which dealt with wastewater treatment at primary, secondary, tertiary and advanced levels. Process technologies involve chemical, physical, thermal and biological processes. The research activity focuses on the potential reuse of treated wastewater effluent.

Completed General Activity

WT012G, submitted a technical report on “**Review of Wastewater Treatment Technologies**” in 2003.

January 2001-June 2002

Research Associate

Kuwait Institute for Scientific Research,
Kuwait Food Resources Division,
Biotechnology Department.

Activities included working on a project producing bioinsecticides utilizing microbial population in a fermentation process. Operated and monitored two 100 liter fermenters (along with separator and spray dryer) with variable volumes producing toxins, using *Bacillus thuringiensis (Bt)* bacteria capable of killing certain types of insects.

March 1996-December 2000

Process Engineer

Doha West Power Station, Ministry of Electricity and Water, Kuwait.

Activities included reading, recording, evaluating, and analyzing statistical methods in the following areas:

- Desalination: Heat transfer, flow rates, pressure distribution, conductivity, temperature and chemical dosing in the process.
- Boiler: Monitoring and control of pH, steam temperature and pressure, and chemical dosing.
- Recarbonation: Adjusting the pH using Limestone, operation of TDC 2000 and chemical dosing.
- Water Treatment: Supply boiler units with treated deionized make-up water.

TEACHING EXPERIENCE

October 2009 – Present

Assistant Professor

Kuwait University, College for Woman,
Department of Environmental
Technology Management (ETM).

Subject Taught	Catalogue No.
Undergraduate	
Capstone	ETM 1550499
Waste Management & Practices	ETM 1550422
Unit Treatment Technologies	ETM 1550320
Water Quality Control Technology	ETM 1550321
Introduction to Environmental Science	CFW1500101
Human and Their Environment	CFW1500120
Chemistry	CFW 1500105
Introduction to Environmental Technology Management	CFW:1500139

January-May 2004

Teaching Assistant, Thermodynamics (ChE 033) Chemical Engineering Department, University of Waterloo, Canada.

Student Supervision

1. Ph D., *Falah AlHajiri*, “ **Removing of H₂S from headwork in WWTP**”, University of Ain-Shams University, Cairo-Egypt (2008-2011). Completed.
2. Ph.D., *Musaed AlNabhan*, “**Ammonia Removal from underground water utilizing PLJR**”, Heriot Watt University, UK (June, 2012 – June, 2015).

SERVICES RENDERED TO UNIVERSITY AND COMMUNITY

(a) Departmental Level

Committee	Department/Univ.	From - To
Convener: Scientific and academic	ETM/KU	2009-2011
Convener: Laboratory and Instrumentation	ETM/KU	2009-2010
Convener: Accreditation & Academic Assessment	ETM/KU	2011-present
Member: College Follow up and Activities	ETM/KU	2009-present
Member: Research and Graduate Studies	ETM/KU	2009-present
Member: Accreditation & Academic Assessment	ETM/KU	2009-2011
Student Advisor	ETM/KU	2010-present
Member: Laboratory and Instrumentation	ETM/KU	2010-present
Member: College Plan & Departmental activities	ETM/KU	2010-present

(b) College Level

Committee	Department/Univ.	From - To
Member: Student Affairs Committee	ETM/KU	2010-present

(c) University Level

- i. Arranged, personally, with his Highness Sheikh Dr. **Ahmed Al-Fahad Al-Ahmed Al-Sabah** Minister of Housing & Planning to reward CFW graduates their degrees during the annual university graduation ceremony held on March 2010.
- ii. Lecturing at public junior high school about air pollution and globing warming.

TRAINING COURSES

September 2011 – January 2012 Chemical War course, Ali Alsalem College (Army base).

October 2011 Short course in industrial wastewater, Oil Joint Operation, Kuwait.

June-July 2003 Instructor in a wastewater training course, Water Resources Division, Kuwait Institute for Scientific Research.

May 1998 Instructor in a desalination training course, West Power Station, Ministry of electricity and Water.

RESEARCH INTERESTS

Environmental Technology and Engineering:

- Wastewater treatment (industries with specific interest in refineries and domestic urban wastewater) employing latest technologies and pollution control.
- Air Pollution Control: Removing hazardous gases from air utilizing novel equipment and technique.
- Two phase flow/aeration technology.
- Corrosion.
- Desalination.

Bioengineering

- Fermentation Processes.
- Environmental Bioremediation.

AWARDS/HONORS

Bronze Medal for “air Capsules” invention during **The 4th International Invention Fair in the Middle East** hosted by the Kuwait Science Club, November 2011.

Cash reward and certificate from **KFAS** for best capstone project in College for Women, Kuwait University, spring semester 2011.

Golden Medal for **Outstanding Student** awarded by **Sheikh Jaber Al-Sabah, His Highness the Amir of Kuwait**; May 2002.

Plaque of Excellence for **Outstanding Student** awarded by **Sheikh Sa’ad Al-Abdallah Al-Sabah, His Highness the Crown Prince of Kuwait**; June 2002.

Plaque for **PhD Degree** awarded by **Sheikh Jaber Al- Mubarak Al-Sabah, Minister of Defense**; June 2008.

Certificate of Excellence for **Outstanding, PhD, Student and Patent achieved in PhD study** awarded by **Dr. Naji Al-Mutairi, Director General of the Kuwait Institute for Scientific Research (KISR), Kuwait**; April 2008.

Medal for participation in the Saudi Innovation Conference (SIC 2007) awarded by **Saudi Arabian Cultural Bureau in London Saudi Students Clubs in the UK and Ireland** Term 26; May 2007.

Post-Doctoral Scholarship awarded by **Islamic Development Bank (IDB)**; June 2008.

Plaque of participation in Saudi Innovation Conference (SIC 2008) awarded by **Saudi Arabian Cultural Bureau in London Saudi Students Clubs in the UK and Ireland**, June 2008.

Certificate of appreciation for teaching given by Kuwait University (College of Engineering and Petroleum); May 1998.

Certificate of Academic Merit for Excellent Academic Achievement given by Culture Attaché of the State of Kuwait, U.S.A; 1993.

Certificate of Academic Merit for Outstanding Student awarded by Ambassador of the State of Kuwait; U.S.A.; 1992.

Graduation Award for Outstanding Student awarded by Ambassador of the State of Kuwait, U.S.A; 1995.

Author Certificate for participation in the Third Conference of the International Congress of Chemistry and Environment awarded by the Kuwait University,

Kuwait Society of Engineers, International Congress of Chemistry and Environment ICCE; November 2007.

Author Certificate for participation in the Saudi Innovation Conference (SIC) given by Saudi Arabian Cultural Bureau in London Saudi Students Clubs in the UK and Ireland Term 26; May 2007.

Certificate for Outstanding Contribution made as the Country Representative of Kuwait awarded by the International Students Association (ISA), Loughborough Students' Union; June 2005.

Certificate Attendance for Sewage and Effluent Treatment awarded by Institute for International Research, U.A.E.; November 2002.

POST-DOCTORAL RESEARCH FELLOW OFFERS

1. Offer from **Massachusetts Institute of Technology (MIT)**, Department of Mechanical Engineering, Professor John H. Lienhard V., USA. The topic of research “**Thermal desalination of seawater and the focus of the work is humidification-dehumidification desalination**”, September 2009.
2. Offer from The **University of Queensland**, Faculty of Engineering, Architecture & Information Technology, Professor Graham Schaffer, Australia. **Advanced water Management Centre**, 2009.

PATENTS/INNOVATIONS

Patents:

1. Air Reactor, **U.S. pending patent**, July 2012.
2. Rotating Disc Aeration, **U.S. pending patent**, July 2012.
3. Fire Extinguishing Agents, **U.S. pending patent**, February 2012.
4. Aeration System Powered by Renewable Energy, **U.S. & Europe pending patent**, January 2012.
5. Water Aerator Using a Compressed Gas Container, **U.S. pending patent**, January 2012.
6. Integrated Aeration System. **U.S. pending patent**, November 2011.
7. Buried Encapsulated Gases. **U.S. & Europe pending patent**, October 2011.
8. Water Aeration Capsules. **Awarded bronze medal and certificate in the “the 4th International Fair in the Middle East”** held in November 2011. **U.S. & Europe pending patent**, August 2011.

Innovations

1. Design and application of a new equipment to measure air entrainment rate in a confined plunging jet process.
 2. Design and application of a new equipment and process of confined plunging jet incorporating annulus to measure water flow rate and mass transfer up the riser.
 3. Developed a new model (equation) based on energy balance to predict induced water flow rate up the riser.
-

PUBLICATIONS/PRESENTATIONS

Al-anzi, B. and Abusam, A., 2012. Assessment of wastewater reuse in Kuwait and its impact on amounts of pollutants discharged into the sea. *Journal of Environmental Protection*, **3**, 935 - 939.

Abusam, A. and **Al-anzi, B.**, 2011. Comparison between the Irrigation Quality of Conventional Tertiary and UF+RO Advanced Treated Wastewaters. *Agricultural Science*, **2**, 526-532.

Al-Anzi, B., 2000. Corrosion Monitoring in the Desalination Plant. *Master Dissertation*, Kuwait University, Kuwait.

Al-Anzi, B., 2007. Performance of A Novel Confined Plunging Liquid Jet Reactor Incorporating Annular Riser. *PhD Thesis*, Loughborough University, UK.

Technical Report

Al-Anzi, B., 2003. Review of Wastewater Treatment Technologies. KISR WT012G, Kuwait.

Conferences

Al-Hajiri, F., **Al-Anzi, B.**, Shahalam, A. and El-Hosseiny, M., 2009. Assessment of H₂S Removal and Production in Raw Sewage: A Case-Study in Pump-Station. *ASCEE-3: Third Ain-Shamas International Conference on Environmental Engineering*, Cairo, Egypt.

Al-Anzi, Bader, 2008. Corrosion Monitoring in the Desalination Plant. *Saudi International Innovation Conference* in April 2008, Leeds, UK.

Al-Anzi, B., 2007. Mechanisms of a confined plunging liquid jet reactor. *Saudi Innovation Conference*, University of Newcastle-upon-Tyne, Newcastle, UK.

Al-Anzi, B., 2007. Effect of downcomer submergence on air entrainment rate utilizing confined plunging liquid jet reactor. *3rd International Congress of Chemistry and Environment (ICCE07)*, Kuwait.

Al-Anzi, B.; Cumming, I.W. and Reilly, C.D. 2006. Air entrainment rate in confined plunging liquid jet reactor. *10th Int. Conf. on Multiphase Flow in Industrial Plant*, Tropes (VV), Italy.

Posters

Bader Al-Anzi, 2002. Corrosion Monitoring in the Desalination Plant. *International Conference on Water Resource Management in Arid Regions*, Kuwait Institute for Scientific Research, Kuwait, 23-27 May.

Bader Al-Anzi, 2002. Corrosion Monitoring in the Desalination Plant. Kuwait University open-day events, Kuwait, May 29.

Chapters in Book

Abusam, A.; **Al-Anzi, B.** and Shahalam A., 2011. Impact of Wastewater Reuse in Kuwait on Amounts of Pollutants Discharged to the Sea from Municipal Wastewater Treatment Plants, Accepted for publication in *Springer Earth Sciences Book Series*.

Submitted Papers

Al-Anzi, B.; Alenezi R. and Khan R., 2011. Kinetic Models of Transesterification of vegetable Oils with methyl ethanoate under sub/supercritical conditions, submitted to *IJETP* journal.

Al-Anzi, B.; Al-Nabhan M. and Khan R., 2012. Role on the Thermochemical Stability of Aluminide Coatings of Low Carbon Steel, submitted to *Metallurgical and Materials Transactions B's* journal.

AlEnezi, R. and **Al-Anzi, B.**, 2012. Kinetic Mechanism of Transesterification of vegetable Oil with Supercritical Methanol, Submitted to *Kuwait Journal of Science & Engineering*.

MEMBERSHIP

- Member of Kuwait Society of Engineers (1995-present).

VOLUNTARY WORK

- Member of the committee discussed education status in Kuwait with MP (2009).
- Representative (ambassador) of Kuwait at Loughborough University, UK (2005-07).
- President of the Islamic Society at Loughborough University, (2005 – 2007), UK.
- Secretary of Loughbrough Islamic Center, (2006 – 2007), UK.

ADDITIONAL INFORMATIONAL

- Attended several courses and workshops worldwide concerning chemical and civil engineering processes (Loughborough; UK, Delft; Netherlands, Dubai; UAE and Kuwait; Kuwait).
- English and Arabic: speaking and writing.