



Dr. Javeed Ashraf AWAN

Associate Professor (BPS-20),
Institute of Chemical Engineering & Technology, University of the Punjab, Lahore.
PhD, Chemical Engineering, (European Doctorant) Mines Paris-Tech, France.
Post Doctoral Research Fellowship, CERE-Technical University of Denmark.
Cell:+ 92 300 4345047 , Email: javeedawan@yahoo.com
Research Director and Advisor to CEO, Gourmet Energy subsidiary of
Gourmet Foods (Pvt) Limited, Lahore.

Research Activity:

Thermodynamics of natural gas, Phase equilibrium measurements and modeling, CO₂ capture, Acid gas removal. BioFuels, Coal Power Generation, Mercaptans (thiols) Chemistry and Removal Management, Energy and Environment Advanced Thermodynamic Modeling (CPA-EoS, Electrolyte-UNIQUAC, GCA-EoS) for reactive and non reactive systems.

Education and Training:

Post Doctoral Fellowship, Technical University of Denmark	(2010 - 2012)
PhD Mines Paris-Tech, Paris- France	(2006 - 2009)
M.Sc. (Eng) Chemical Engineering, ICET, University of the Punjab, Lahore	(2004 - 2006)
B.Sc. (Eng) Chemical Engineering, ICET, University of the Punjab, Lahore	(2000 - 2004)

International Deployment:

Guest Professor at DTU Chemical Engineering, Department of Chemical and Biochemical Engineering, Technical University of Denmark, Denmark. **(December 2014-January 2015)**.

Thermodynamic modeling of sulfur species and ionic solutions, using **Extended UNIQUAC** and **Cubic Plus Association EoS**, (Center for Energy Resources Engineering, Technical University of Denmark. **(November, 2008 - February, 2009)**).

Thermodynamics and Phase Equilibrium of Organic Sulfur Species-Alkanolamine Aqueous Solutions in the Presence of Acid Gases. Européan Doctorant, Mines Paris-Tech., France. **(October, 2006 - September, 2009)**.

Thermodynamic modeling of Hydrocarbon-water systems, using **Group Contribution plus Association EoS**, Guest Researcher under ECOS-SUD program at Planta Piloto de Ingeniería Química PLAPIQUI Argentina **(April, 2007 - June, 2007)**

Employment:

Associate Professor, Institute of Chemical Engineering and Technology, University of the Punjab, Lahore. **(2011- till date)**

Assistant Professor, Institute of Chemical Engineering and Technology, University of the Punjab, Lahore. **(2009-2011)**

Lecturer, Institute of Chemical Engineering and Technology, University of the Punjab, Lahore. **(2005- 2006)**

Research Scholar, Natural gas pipeline systems: Impact of Corrosion on the Disbandment of Epoxy Powder Coatings **(2004 - 2005)**

Established Laboratory of Chemical Thermodynamics at ICET:

A Laboratory of chemical thermodynamics has been developed at the Institute of Chemical Engineering and Technology, University of the Punjab, Lahore under my supervision. This state of the art laboratory is capable to cover all the thermodynamic experiments of B.Sc. (Engg) Chemical Engineering and M.Sc. (Engg) Chemical Engineering curriculum.

Journal Publications:

1. Javeed A. Awan, Alain Valtz, Christophe Coquelet, Dominique Richon, Effect of Acid gases on the solubility of n-Propylmercaptan in 50 wt % Methyl-diethanolamine aqueous solution, *J. Chem. Eng. Research and Design*, 2008, 86, 600-605.
2. Selva Pereda, Javeed A. Awan, Amir H. Mohammadi, Alain Valtz, Christophe Coquelet, Esteban A. Brignole, Dominique Richon, Solubility of hydrocarbons in water: Experimental measurements and modeling using a group contribution with association equation of state (GCA-EoS), *Fluid Phase equilibria*, 2008, 275, 1, 52-59.

3. Javeed A. Awan, Christophe Coquelet, Alain Valtz, Dominique Richon, Volumetric Properties of Hexamethyleneimine and of its Mixtures with Water, *Thermochimica Acta*, 2009, 484, 57-64.
4. Javeed A. Awan, Kaj Thomsen, Christophe Coquelet, Philip L. Fosbøl, Dominique Richon, VLE Measurements and Modeling of the n-Propyl Mercaptan-Methane-Water System. *J. Chem. & Eng. Data*, 2009.
5. Javeed A. Awan, Ioannis Tsivintzelis, Martin P. Breil, Christophe Coquelet, Dominique Richon, Georgios M. Kontogeorgis, Phase Equilibria of Mixtures Containing Organic Sulfur Species (OSS) and Water/Hydrocarbons: VLE Measurements and Modeling Using the Cubic-Plus-Association Equation of State, *Ind. Eng. Chem. Res.*, 2012, 1076-1082.
6. Javeed A. Awan, Ioannis Tsivintzelis, Martin P. Breil, Christophe Coquelet, M. Kontogeorgis, Phase Equilibria on Three Binary Mixtures; Methyl mercaptan + Methane, Methyl mercaptan + Nitrogen and Methyl mercaptan + Carbon dioxide., *J. Chem. Eng. Data*, 2012, 57 (3), pp 896–901.
7. Javeed A. Awan, Ioannis Tsivintzelis, Alain Valtz, Christophe Coquelet, Georgios M. Kontogeorgis, Vapor-Liquid-Liquid Equilibrium Measurements and Modeling of the Methanethiol + Methane + Water Ternary System at 304, 334, and 364 K, *Ind. Eng. Chem. Res.*, 2012, 51 (35), pp 11561–11564.
8. Javeed A. Awan, Christophe Coquelet, Moussa Dicko, Zahoor. H. Rizvi, Dominique Richon, Phase-Equilibrium of CO₂ and organic sulfur species in Methyl-diethanolamine (MDEA) aqueous solution; Study of acid gases loading effect on the partition coefficient of n-Propylmercaptan, *JPICChE*, 2011, 30, (1), XXXIX, ISSN 1813 – 4092.
9. Javeed A. Awan, Muhammad Rashid Usman, Rafi Ullah Khan, Dominique Richon, Electrical Conductivity of n-Propylmercaptan (n-PM) in Methyl-diethanolamine Aqueous Solutions at 303.15 K. *JPICChE*, 2011, XXIX, 29-33, ISSN 1813 – 4092
10. Javeed A. Awan, Mahmood Saleem, An overview of the thermodynamic models for acid gases in electrolyte solutions, 2011, *JFET*, 18 (1) 13-29, ISSN-1992-3082.
11. Javeed A. Awan, Georgios M. Kontogeorgis, Ioannis Tsivintzelis, Christophe Coquelet, Vapor-liquid-liquid equilibrium measurements and modeling of ethanethiol + methane + water, 1-propanethiol + methane + water and 1-butanethiol + methane + water ternary systems at 303, 335 and 365 K and pressure up to 9MPa. *Ind. Eng. Chem. Res.*, 2013, 52 (41), pp 14698–14705.
12. Kashif Nadeem, Hassnain Mahmood, Hasan Raza, Mehwish Batool, Shazia Naz Malik, Aamir Ijaz, Javeed A. Awan, The Production of Biodiesel from Used Cooking Oil; Characterization of Key Fuel Properties of Ethyl Esters and diesel-biodiesel blends. 2014, *Biofuels Taylor & Francis* Volume 5, Issue 6, pages 591-596.
13. Hina Saeed, Faiza Saeed Chaudhry, Shahid Rehman, Zafar Rasheed, Aamir Ijaz, Javeed A. Awan, Removal of toxic metallic ions Cr (VI), Cu (II), Ni(II), Co(II) and Cd(II) from waste water effluents of tanneries by using Punica granatum (pomegranate) membrane, *Iranica Journal of Energy and Environment* 7(1): 52-57, 2016.
14. Muhammad Usman Mubarak, Ahmad Adnan, Abdul Rehman, Muhammad Imtiaz Shafiq, Javeed A. Awan, A new method for the estimation of surfactin, 2016, A New Method for Estimation of Surfactin, *Asian J. Chem.* 28, 230-232.
15. Javeed A. Awan, Georgios M. Kontogeorgis, Ioannis Tsivintzelis, Christophe Coquelet, Phase equilibrium measurements and modeling of 1-propanethiol + 1-butanethiol + CH₄ ternary system at 303, 336, and 368 K with a pressure variation from 1 to 9 MPa, 2015, *J. Chem. Eng. Data*, 2016, 61 (1), pp 41–44.
16. Muhammad Yaqoob, Gull Zaib, Mudasir Hussain, Safwan Ali, Javeed A. Awan, Christophe Coquelet, Development of new cell for the measurements of Electrical Conductivity and pH of n-propanethiol and n-butanethiol in N-methyl-diethanolamine + piperazine (MDEA-Piperazine) Aqueous Solution at 306 K and 1 atm. 2015, *J. Chem. Eng. Data* (accepted).
17. Muhammad Usman Mubarak, Abdul Rehman, Muhammad Imtiaz Shafiq, Umara Rahim, Mehboob Ahmed, Aamir Ijaz, Javeed A. Awan, Effect of different physical factors on lipid and biomass production of *Chlorella vulgaris*, to Waste and Biomass Valorization, 2015, *Waste and Biomass Valorization*, Springer Journals, (submitted).
18. Awais Sattar Ghouri, Saeed Noor, Azeem Munawar, Javeed A. Awan, Production of ethanol from *Quetta pinus halepensis* by fermentation, *J. Chem. Eng. Process Technol.*, 6 (5), 1-4, 2015
19. Mahmood Ahmad Bhatti, Muhammad Usman Mubarak, Muhammad Imtiaz Shafiq, Javeed A. Awan Shifting from rice husk based dumping grate furnace to coal based fluidized bed furnace; An experimental study for economical power generation in a local company of Pakistan, 2015, *JFET*, ISSN-1992-3082. (submitted)
20. Zeeshan Ilyass, Hamza Arif, Noor Muhammad, Qais Ahamed Sanwal, Javeed A. Awan, Heat analysis of mixing of low grade coal and high grade coal blends from Pakistan, 2015, *JPICChE*, XXXIX, ISSN 1813 – 4092. (submitted)
21. Abad Ali Nadeem, Muhammad Nadeem, Quratulain Syed, Umar Asghar, Mahrose A. Khan, Anwar Asghar, Amir Ijaz, Javeed A. Awan, SEMI-PILOT SCALE BIOETHANOL PRODUCTION FROM HYDROLYZED

BIOMASS OF SUGAR CANE BAGASSE BY *Saccharomyces cerevisiae*, Brazilian Journal of Chemical Engineering - *Manuscript ID BJCE-2015-0537* (Submitted)

22. Javeed A. Awan, Qazi Mohammad Omar, Adil Amin, Muhammad Sarfraz, Muhammad Awais, Ijlal Idrees, Gulzar Hussain, Development of low cost adsorbents for the removal of water hardness; An experimental study and modeling of newly developed adsorbent consist of coconut shell activated carbon, polystyrene resin and chemically modified sugar cane bagasse. *JFET*, 692-1856-1, 19-02-2016 (submitted)

Conference Presentation:

23. Muhammad Yaqoob, Gull Zaib, Mudasir Hussain, Safwan Ali, Christophe Coquelet, Javeed A. Awan, New measurements and modeling of electrical conductivity and pH of n-propanethiol and n-butanethiol in N-methyldiethanolamine + piperazine (MDEA-Piperazine) Aqueous solution at 306 K and 1atm, CHISA-2016, Prague, **Czech Republic**.
24. Javeed. A. Awan, Moussa Dicko, Christophe Coquelet, and Dominique Richon, Récents Progrès en Génie des Procédés, 2007 – Numéro 96, SFGP, Paris, **France**.
25. Javeed A. Awan, Christophe Coquelet, Alain Valtz, Dominique Richon, Vapor-liquid Equilibrium of organic sulfur species in 50 wt % MDEA aqueous solutions, AIChE Annual Meeting, 2008. **USA**
26. Javeed A. Awan, Christophe Coquelet, Scott Northrop, Dominique Richon, Vapor Liquid Equilibrium and Partition Coefficients of n-Propylmercaptan, n-Butylmercaptan and Dimethylsulfide in MDEA/DEA Aqueous Solutions, GPA annual Meeting, 2009. **USA**
27. Javeed A Awan, Ioannis Tsivintzelis, Christophe Coquelet, Georgios M. Kontogeorgis, Thermodynamic of the Mixtures containing Organic Sulfur Species (OSS) in water and Hydrocarbons; Experimental VLE measurements and Modeling Using the Cubic-Plus-Association Equation of State, ICCT-2010, Tusukuba-Japan, 2010. **Japan**
28. Javeed A. Awan, Georgios M. Kontogeorgis, Ioannis Tsivintzelis, Christophe Coquelet, Vapor-liquid-liquid equilibrium measurements and modeling of ethanethiol + methane + water, 1-propanethiol + methane + water and 1-butanethiol + methane + water ternary systems at 303, 335 and 365 K and pressure up to 9 MPa (ICHEC Tunisia, 2013. **Tunisia**.
29. Vapor-liquid-liquid equilibrium measurements and modeling of ethanethiol + methane + water, 1-propanethiol + methane + water and 1-butanethiol + methane + water ternary systems at 303, 335 and 365 K and pressure up to 9 MPa. 9th European Congress of Chemical Engineering, The Hague, The Netherland, ECCE9-ECAB-2, 2013, **The Netherland**.
30. Phase Equilibrium Measurements and Modeling of Ternary systems containing Thiols (organic sulfur species) in Hydrocarbon and Water at 303, 305 and 365 K and Pressure up to 9 MPa., CHEMTECH '15 Submission 43,2015, **Istambul, Turkey**.
31. Selva Pereda, Javeed A. Awan, Amir H. Mohammadi, Alain Valtz, Christophe Coquelet, Esteban A. Brignole, Dominique Richon, Experimental Measurements and Phase equilibrium modeling of Water + Hydrocarbon Systems Using a Group Contribution Plus Association Equation of State, ICCT, 2008, Warsaw- Poland.
32. Javeed A. Awan, Christophe Coquelet, and Dominique Richon, Effect of acid gases on the solubility of organic sulfur species in MDEA aqueous solution, J2A-2008, Paris.
33. Javeed A. Awan , F. A. Sánchez , A. E. Andreatta , A.H. Mohammadi, C. Coquelet, E. A. Brignole, Dominique Richon, Phase Behavior Modeling of Alkyl Amine + Hydrocarbon and Alkyl Amine + Alcohol Systems Using a Group Contribution Associating Equation of State, I-Iberoamerican Conference on Supercritical Fluids, Argentina.

International Reports:

34. Javeed A. Awan, Alain Valtz, Christophe Coquelet, and Dominique Richon, Solubility of CO₂ and sulfur species in aqueous MDEA solution, GPA-037 progress report, March 2007.
35. Javeed A. Awan, Albert Chareton, Alain Valtz, Pascal Théveneau, Christophe Coquelet, and Dominique Richon, Solubility of sulfur species in aqueous MDEA solution, GPA-037, progress report, July 2007. CEP/TEP/C/2007/18.
36. Javeed A. Awan, Alain Valtz, Frederic Dieu, Christophe Coquelet, and Dominique Richon, Solubility of CO₂ and sulfur species in aqueous MDEA solution, GPA-037 Annual report, April 2008.
37. Javeed A. Awan, Alain Valtz, Christophe Coquelet, and Dominique Richon, Solubility of organic sulfur species and CO₂ MDEA/ DEA aqueous solutions, GPA-037 Progress Report, November, 2008.

38. Javeed A. Awan, Alain Valtz, Christophe Coquelet, and Dominique Richon, Solubility of Organic sulfur species and CO₂ MDEA/ DEA aqueous solutions, GPA-037 Progress Report, February, 2009.
39. Javeed A. Awan, Alain Valtz, Christophe Coquelet, and Dominique Richon, Solubility of Organic sulfur species and CO₂ MDEA/ DEA aqueous solutions, GPA-037 Progress Report, September, 2009.
40. Javeed A. Awan, Alain Valtz, Christophe Coquelet, and Dominique Richon, Solubility of Organic sulfur species and CO₂ MDEA/ DEA aqueous solutions, GPA-037 Final Report, February, 2011.

Patents:

1. The discovery of novel compound mixture for the enhanced heat transfer in furnaces; PTPTM, IPO-Patent pending, 2013
2. “The discovery to use traditional bricks kiln furnaces for the steam in steam power plant; HMSTM” IPO-Patent pending, 2013.

Research Grants:

1. Danish Ministry of Science Technology and Innovation, Denmark ; Winner of Independent Research Grant FTP-Sagsnr. 274-09-0084, Kontokode. 6001, Delregnskab. 16 (June-2009)
 - a. Thermodynamics modeling of natural gas containing sulfur species
 - b. Worth Equivalent to BGP £ 200,000 (as Principal Investigator)
2. Independent Research Grant (I.C.E.T + PU)
 - a. PVT studied and thermodynamic modeling of oil and gas containing mixtures-2013
 - b. Worth Equivalent to BGP £ 10,000 (as Principal Investigator)
3. Independent Research grant (PU)
 - a. Development of Advance Analytic techniques for the detection of toxic metal ions in fruit juices and drinking water-2013
 - b. Worth Equivalent to BGP £ 4,500 (as Principal Investigator)
4. Independent Research grant (PU) 2012-2013
 - a. The production of biodiesel by *Chlorella v*
 - b. Worth Equivalent to BGP £ 5,000 (as Principal Investigator)
5. Independent Research grant (I.C.E.T 50% + PU 50% matching grant) 2013-2014
 - a. Development of the laboratory of thermodynamics at ICET
 - b. Worth Equivalent to BGP £ 20,000 (as Principal Investigator)
6. Research Project University of the Punjab, Lahore (2013– 2014)
 - a. Removal of Toxic metal ions from the waste stream of textile industry with novel solvent.
 - b. Equivalent to BGP £ 5,000 (as Principal Investigator)
7. Research Project University of the Punjab, Lahore (2014– 2015)
 - a. Estimation of heavy metal ions in the fruit juices and portable water.
 - b. Equivalent to BGP £ 5,000 (as Principal Investigator)
8. Research Grant (10% Overseas Scholarships Program, GRE based) by Higher Education Commission of Pakistan for PhD studies at Mines Paris Tech France.
 - a. Equivalent to BGP £ 70,000 (as Principal Investigator)

Thesis Supervised:

PhD (Engg) Chemical Engineering

1. Mahwish Batool: Thermodynamics modeling of the mixtures used in Enhanced oil Recovery (EOR), **in progress** (Supervisor)
2. Muhammad Sarfraz Akram: Dehydrogenation of Methylcyclohexane over Metal Supported Mesoporous Alumina, **in progress** (Co-Supervisor)

Supervision of MSc (Engg) Chemical Engineering Thesis

1. "Hysys 8.6 Simulation design for the simultaneous removal of thiols from natural gas" Rehan Zubair, 2015, (Completed).
2. "Plant design on the manufacturing of ethylene from ethanol" Ali Ayub, 2015, (completed).
3. "Production of synthetic natural gas (SNG) by gasification of 2 Ton/hr of coal" Afsar Zaheer, 2015 (completed).
4. "Preparation of artificial flavors (esters) locally in Pakistan" Daneyal Babar, 2014, (completed)
5. "Production of Bio-Diesel from waste cooking oil" Student: Amer Naeem, 2015, (completed).
6. "Production of ethanol from plant biomass" Abad Ali Nadeem (MSC-12-2014)
7. "New measurements and data modeling of thermophysical properties for binary mixtures of piperazine and methanol, and solubility parameters of new nine ionic liquids" Muhammad Anil Ammanat Bhatti, 2014, (completed)
8. "Effect of temperature, light cycle, non-aeration, aeration and aeration + CO₂ conditions on Lipid and Biomass Production of *Chlorella vulgaris* from Baluchistan" Abdul Rehman, 2014 (completed)
9. "Comparison of Biomass fuel furnace with newly designed fluidized bed coal furnace" Student: Mahmood Ahmad Bhatti. 2014, (completed)
10. "Hyses Design for the Enhance Recovery of Benzoic acid from Phthalic Anhydride Residue" Mukhtar Shabbeer, 2015, (completed).
11. "A Plant Design on the production of 500 m³ per day of Syngas through Coal Gasification", Muhammad abubakar, 2015,(completed).
12. "Plant Design Project on Production of Synthetic Natural Gas (SNG) by Gasification of 2000 Kg/hr of Coal". Afsar Zaheer, 2013, (completed).
13. "A Project on the Development of low Cost Adsorbents for the Removal of Water Hardness and Design of both Household and Commercial Water Filtration Systems". Adil Amin, 2014, (completed).
14. "New method for the Prepration of Stearic Acid" Asif Javed. 2015, (completed).
15. "Design and Simulation for the Sweetning of 15 MMSCFD of Natural Gas Using Methyl-diethanolamine solution, Asad Iqbal, CE-M10-43.
16. "Removal of Toxic Metallic ions from waste water effluents of tanneries by using adsorbents from renewable sources", Hina Saeed 2012 (completed)
17. "Heat Analysis of low grade coal and high grade coal blends", Zeeshan Ilyass, 2015 (completed)
18. "Thermal characterization of coal and biomass mixtures" Numan Ahmad, 2014, (completed).

Teaching Activities:

1. Chemical Thermodynamics-I- (Theory) (2 Credit Hour/ BSc (Engg) Chemical Engineering 4th semester).
2. Chemical Thermodynamics-II- (Theory)(2 Credit Hour/ BSc (Engg) Chemical Engineering 5th semester).
3. Environment & Safety Engineering-(Theory) (2 Credit Hour/ BSc (Engg) Chemical Engineering 4th semester).
4. Analytical Techniques in Engineering Research– (Theory), (2 Credit Hour/ PhD (Engg) Chemical Engineering) Advanced Thermodynamics and Phase Equilibria Engineering– (Theory) (2 Credit Hour/ PhD (Engg) Chemical Engineering).
5. Advanced Process Dynamics and Control– Theory, (2 Credit Hour/ MSc (Engg) Chemical Engineering 2th semester).
6. Advance Thermodynamics for Process Industry (2 Credit Hour/ MSc (Engg) Chemical Engineering 2th semester).
7. Mathematical Modeling and Process Design-laboratory, BSc (Engg) Chemical Engineering.
8. Process Instrumentation and Control– Laboratory, BSc (Engg) Chemical Engineering.
9. Heat and Mass Transfer Operations– Laboratory, BSc (Engg) Chemical Engineering.

Community Services:

Member, Doctoral Committee (Institute of Chemical Engineering and Technology, University of the Punjab, Lahore)

Member Scholarship Committee (Chemical Engineering) 2011-

Member Doctoral Program Coordination Committee (Chemical Engineering) 2011-

Member, Doctoral Program Revision Committee 2010-

Member, Board of Studies (Institute of Chemical Engineering and Technology, University of the Punjab, Lahore)

Member, American Institute of Chemical Engineers (AIChE)

Member, Pakistan Institute of Chemical Engineers.

Member, Pakistan Engineering Council.

Member, National Council for Quality & Technology, Pakistan.

Member, The American Society of Mechanical Engineers.

Member, Corrosion Control Society.

Scholarly Services

Journal of Chemical & Engineering Data: Reviewer

Industrial & Engineering Chemistry Research: Reviewer

Chemical Engineering Communications: Reviewer

Institution of Chemical Engineering, UK (IChemE): Membership/Reference no:99907350 Reviewer

Journal of Hazardous Materials, Elsevier: Reviewer

Journal of Faculty of Engineering and Technology: Reviewer

Pakistan Institute of Chemical Engineering Reviewer

References:

1. Dr Georgios M Kontogeorgis (Referee of PhD Dissertation, Research Supervisor, Mentor)
Professor and Head, Center for Energy Resources Engineering
Department of Chemical and Biochemical Engineering
Technical University of Denmark
gk@kt.dtu.dk
2. Dr. Christophe Coquelet
Professor of Chemical Engineering at Mines ParisTech, France.
<http://www.mines-paristech.fr/Services/Annuaire/christophe-coquelet>
3. Dr Dominique Richon (PhD Supervisor)
Director Research (Retired)
Mines Paris Tech, France also Distinguished Professor
Aalto School of Chemical Technology, Aalto University, Finland
richon.dominique@gmail.com
4. Dr Niaz Ahmad Akhtar (Vice Chancellor UET Taxila)
Sitara-i-Imtiaz (Star of Excellence: Civilian Award from the State of Pakistan), Professor of Chemical Engineering, University of the Punjab, Lahore (on-leave), Ex-Rector, National Textile University, Faisalabad, Pakistan vc@uettaxila.edu.pk
5. Mr. Zubair Nawaz Chattha
CEO, Gourmet Foods (Pvt), Lahore, Pakistan.

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