Majid Majeed Akbar

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Objective: To obtain a challenging full time position, where I can best utilize my abilities.

Professional Experience

Assistant Professor (Adhoc) (Chem. Engg.) (Jan. 2014 to present)
Institute of Chemical Engineering and Technology, University of the Punjab, Pakistan.

- **Teaching the following Chemical Engineering subjects:**
  - Experimental Design & Data Analysis (Theory) to Ph.D. (Chem. Engg.) since last 4 Semesters.
  - Process Dynamics and Control (Theory) to M.Sc. (Chem. Engg.) since last 4 Semesters.
  - Research Methodology (Theory) to M.Sc. (Chem. Engg.) since last 6 Semesters.
  - Environmental Engineering (Theory) to B.Sc. (Chem. Engg.) since last 6 Semesters.
  - Heat and Mass Transfer (Theory + Lab) to B.Sc. (Chem. Engg.) since last 2 Semesters.
  - Transport Phenomena (Theory) to B.Sc. (Chem. Engg) since last 1 Semester.
  - Thermodynamics (Theory) to B.Sc. (Chem. Engg.) since last 2 Semesters.
  - Physical Chemistry I and II (Theory + Lab) to B.Sc. (Chem. Engg.) since last 6 Semesters.
- In-charge Physical Chemistry Laboratory.
- Supervising B.Sc. and M.Sc. (Chem. Engg.) students in their final year theses.
- Supervising Ph.D. (Chem. Engg.) student.

Graduate Assistant / Tutor (Jul. 2009 to Dec. 2013)
Chemical Engineering Department, Universiti Teknologi PETRONAS, Malaysia.

- **Taught the following Chemical Engineering subjects:**
  - Chemical Process Dynamics (Theory + Lab) to B.Sc. (Chem. Engg.) for 4 Semesters.
  - Process Instrumentation (Theory + Lab) to B.Sc. (Chem. Engg.) for 4 Semesters.
  - Separation Process I (Theory + Lab) to B.Sc. (Chem. Engg.) for 4 Semesters.

Lecturer (Chem. Engg.) (Jun. 2004 to Jul. 2009)
Institute of Chemical Engineering and Technology, University of the Punjab, Pakistan.

- **Taught the following Chemical Engineering subjects:**
  - Fluid and Particle Mechanics (Theory + Lab) to B.Sc. (Chem. Engg.) for 8 Semesters.
  - Environmental Engineering (Theory) to B.Sc. (Chem. Engg.) for 8 Semesters.
  - Heat & Mass Transfer Operations (Theory + Lab) to B.Sc. (Chem. Engg.) for 8 Semesters.
  - Physical Chemistry I & II (Theory + Lab) to B.Sc. (Chem. Engg.) for 8 Semesters.
  - Process Instrumentation (Theory + Lab) to B.Sc. (Chem. Engg.) for 8 Semesters.
  - Transport Phenomena (Theory + Lab) to B.Sc. (Chem. Engg.) for 6 Semesters.
  - General Chemistry (Lab) to B.Sc. (Chem. Engg.) for 6 Semesters.
  - Applied Inorganic Chemistry (Lab) to B.Sc. (Chem. Engg.) for 6 Semesters.
- Supervised students in their research projects.
- Prepared Lab Manuals for Physical Chemistry Experiments.

Research Scholar (Jan. 2004 to Jun. 2004)
Institute of Chemical Engineering and Technology, University of the Punjab, Pakistan.

- Prepared research reports on Heat and Mass Transfer Operations and Pulp and Paper.
- Assisted senior faculty members in different research projects like; Paper Production, Heat Transfer, and Process Safety.

Chemical Engineer (Jan. 2003 to Aug. 2003)
Flying Pulp and Paper Mills, Sheikhupura, Pakistan.

- Worked in Quality Control Division.

Professional Education

Doctor of Philosophy (Ph.D.) (Chem. Engg.) (2009 – 2014)

Universiti Teknologi PETRONAS, Malaysia.

Supervisor: Prof. Dr. Thanapalan Murugesan

M.Sc. Engg. (Chem. Engg.) (2004 – 2006)

Institute of Chemical Engineering and Technology, University of the Punjab, Pakistan.

Supervisor: Prof. Dr. Niaz Ahmad

B.Sc. Engg. (Chem. Engg.) (1998 – 2002)

Institute of Chemical Engineering & Technology, University of the Punjab, Pakistan.

Supervisor: Prof. Dr. Arif Butt

Research Areas

- Green Technology
- Separation Processes
- CO_2 capture
- Chemical Thermodynamics
- Biodiesel and Biomass utilization
- Environmental Engineering

Research Projects

- **"**Development of new environmentally benign tunable hybrid solvents for efficient and reversible capture of CO_2" (Ministry of Science, Technology and Innovation, Malaysia). As member completed Ph.D. research titled "Studies on CO_2 solubility in MDEA and hydrophobic ionic liquids binary mixtures" **(2009 – 2013) (completed)**
- "Removal of CO_2 from Natural Gas" under MyRA, Malaysian incentive grant through CO_2 rich natural gas value chain program **(2013 – 2014) (completed)**
- M.Sc. (Chem. Engg.) thesis titled "Pulp and Paper from Reed Grass" was completed as part of the project "Pulp and Paper from indigenous raw materials" **(2004 – 2006) (completed)**
- Fabrication of double pipe heat exchanger at Institute's Lab. **(2004-2005) (completed).**
- Process report titled "Effects of Different Sands in the Manufacturing of Glass" **(2001-2002)** was completed as part of B.Sc. (Chem. Engg.) studies.
- Plant design thesis titled "Production of 200 tons/day of Caustic Soda by Electrolysis of Brine" **(2001-2002)** was completed as part of B.Sc. (Chem. Engg.) studies.
- Principal investigator for the project "Development of physical properties for the solvents having potential usage in CO_2 solubility" under University of the Punjab, Pakistan **(2015-2016) (completed)**
- Principal investigator for the project "Hybrid solvents for CO_2 uptake" under University of the Punjab, Pakistan **(2016-2017) (ongoing)**
- Project leader for "Up-gradation of physical chemistry and analytical laboratories project" under University of the Punjab, Pakistan **(2015-2017) (ongoing)**

Scholarships and Awards

- Faculty scholarship for M.Sc. Chemical Engineering studies.
- Fully funded Graduate Assistant Scholarship by Universiti Teknologi PETRONAS, Malaysia for Ph.D. studies.
- Incentive Award for research publications **(2014) (Rs. 50,000/-)** by University of the Punjab.
- Overall Performance Award **(2014) (Rs. 35,000/-)** by University of the Punjab.
- Incentive Award for research publications **(2015) (Rs. 12,000/-)** by University of the Punjab.

- Overall Performance Award **(2015) (Rs. 40,000/-)** by University of the Punjab.
- Incentive Award for research publications (2016) (Rs. 20.000) by University of the Punjab.
- Overall Performance Award (2016) (Rs. 48,000) by University of the Punjab.

Journal Publications Cumulative Impact Factor = 30.28

- Lai Fatt Chuah, Jiri Jaromir Klemes, Suzana Yusup, Awais Bokhari, **Majid Majeed Akbar**, *"Influence of Fatty acids in waste cooking oil for cleaner biodiesel".* Clean Technologies and Environmental Policy DOI 10.1007/s10098-016-1274-0, (2016).(Published online 14 September 2016) **(Impact Factor = 1.934)**
- Lai Fatt Chuah, Jiri Jaromir Klemes, Suzana Yusup, Awais Bokhari, **Majid Majeed Akbar**, Zhi Kai Chong, *"Kinetic studies on waste cooking oil into biodiesel via hydrodynamic cavitation"* .Journal of Cleaner Production DOI 10.1016/j.jcelepro.2016.06.187 , (2016) 1-10. **(Impact Factor = 4.959)**
- Lai Fatt Chuah, Jiri Jaromir Klemes, Suzana Yusup, Awais Bokhari, **Majid Majeed Akbar**, *"A review of cleaner intensification technologies in biodiesel production"*. Journal of Cleaner Production DOI 10.1016/j.jcepro.2016.05.017, (2016) 1-13. **(Impact Factor = 4.959)**
- Awais Bokhari, Lai Fatt Chuah, Suzana Yusup, Jiri Jaromir Klemes, **Majid Majeed Akbar**, Ruzaimah Nik M. Kamil, *"Cleaner production of rubber seed oil methyl ester using a hydrodynamic cavitation: optimisation and parametic study"*. Journal of Cleaner Production DOI 10.1016/j.jclepro.2016.04091, 136 (2016) 31-41. **(Impact Factor = 4.959)**
- Lai Fatt Chuah, Awais Bokhari, Suzana Yusup, Jiri Jaromir Klemes, **Majid Majeed Akbar**, Sugesvarran Saminathan, *"Optimisation on Pretreatment of kapok seed (Ceiba pentandra) oil via esterification reaction in an ultrasonic cavitation Reactor"*. Biomass Conversion and Biorefinery DOI 10.1007/s13399-016-0207-9, (2016).(Available online 4 May 2016)
- Lai Fatt Chuah, Awais Bokhari, Suzana Yusup, Jiri Jaromir Klemes, Bawadi Abdullah, **Majid Majeed Akbar**, *"Optimisation and Kinetic Studies of Acid Esterification of High Free Fatty Acid Rubber Seed Oil"*. Arabian Journal for Science and Engineering DOI 10.1007/s13369-015-2014-1, (2015).(Available online 29th December 2015) **(Impact Factor = 0.728)**
- **Majid Majeed Akbar**, Fareeda Chemet, Appusamy Arunagiri, Thanabalan Murugesan, *"Density and excess properties of N-methydiethanolamine (MDEA) with 1-hexyl-3-methylimidazolium tris (pentafluoroethyl) trifluorophosphate"*. Journal of Thermal Analysis Calorimetry DOI 10.1007/s10973-015-4957-6, (2015).(Available online 23 August 2015) **(Impact Factor = 1.781)**
- **Majid Majeed Akbar**, Asim Hassan Rizvi, *"CO_2 Solubility in aqueous monoethanolamine with 1-ethyl-3-methylimidazoium tetrafluoroborate"*. Journal of Faculty of Engineering & Technology, JEET 22(2) (2015) 21-26.
- Malyanah Mohd taib, **Majid Majeed Akbar**, Thanapalan Murugesan, *"Physical and excess properties of tenary mixtures of 1-butyl-3-methylimidazoium tetrafluoroborate + monoethanolamine + water at temperature from (303.1 to 353.15) K"*. Journal of Molecular Liquids, 190 (2014) 23-29. **(Impact Factor = 2.740)**
- **Majid Majeed Akbar**, Thanabalan Murugesan, *"CO_2 solubility in the aqueous 1-ethyl-3-methylimidazolium bis(trifluoromethylsulfonyl)imide ([emim][Tf_2N]) and monoethanolamine (MEA) solutions"*. Journal of the Pakistan Institute of Chemical Engineers, 42(1), (2014) 23-29.
- **Majid Majeed Akbar**, Thanabalan Murugesan, *"Densities, Refractive indices and excess molar volumes for the binary mixtures of 1-propyronitrile-3-hexylimidazolium bromide [C_2 CN Him Br] with Monoethanolamine (MEA) at T = 293.15 to 313.15 K"*. Journal of the Pakistan Institute of Chemical Engineers, 42(2), (2014) 7-13.
- **Majid Majeed Akbar**, Thanabalan Murugesan, *"Densities, Refractive Indices and Excess Properties for the binary mixtures of 2-Hydroxyethanaminium Formate [HEF] with Monoethanolamine (MEA) at T = 293.15 to 313.15 K"*. Journal of the Pakistan Institute of Chemical Engineers, 42(1), (2014), 13-22.

- **Majid Majeed Akbar**, Thanabalan Murugesan,*"Carbon Dioxide absorption in aqueous diethanolamine (DEA) with 1-ethyl-3-methylimidazolium bis(trifluoromethylsulfonyl)imide ([emim][Tf_2N]) mixtures at pressures from 100 to 1600 kPa"*. Journal of the Pakistan Institute of Chemical Engineers, 42(2),(2014)1-6.
- Malyanah Mohd Taib, **Majid Majeed Akbar**, Thanapalan Murugesan, *"Densities, refractive index and excess properties of bis(2-hydroxyethyl)ammonium acetate ([bheaa])+monoethanolamine+water system at temperatures from 303.15 to 353.15 K"*. Journal of Molecular Liquids, 181 (2013) 121-126. **(Impact Factor = 2.740)**
- **Majid Majeed Akbar**, Thanapalan Murugesan, *"Thermophysical properties of 1-hexyl-3-methylimidazolium tetrafluoroborate [hmim][BF_4] + N-methyldiethanolamine (MDEA) at temperatures (303.15 to 323.15) K"*. Journal of Molecular Liquids, 177 (2013) 54-59. **(Impact Factor = 2.740)**

- **Majid Majeed Akbar**, Thanapalan Murugesan, *"Thermophysical properties for the binary mixtures of 1-hexyl-3-methylimidazolium bis(trifluoromethylsulfonyl)imide [hmim][Tf_2N] + N-methyldiethanolamine (MDEA) at temperatures (303.15 to 323.15) K"*. Journal of Molecular Liquids, 169 (2012) 95-101. **(Impact Factor = 2.740)**

Conference

- Presented research paper titled "Experimental Viscosities of the binary mixtures of 1-hexyl-3-methylimidazolium tris(pentafluoroethyl)trifluorophosphate with *N*-methyldiethanolamine" in World Engineering, Science and Technology Congress ESTCON (12^{th} to 14^{th} Jun. 2012) at Kuala Lumpur Convention Centre, Malaysia.

Research Supervision

Ph.D. Chemical Engineering (on going)

- Muhammad Latif CO_2 removal by ionic liquids, deep eutectic solvents & their mixtures

M.Sc. Chemical Engineering

- Muhammad Latif (Session 2013-15) Carbon Dioxide absorption studies using monoethanolamine, diethanolamine, triethanolamine solutions and their blends.
- Muhammad Fahim (Session 2013-15) Extraction of Wax from Indigenous Sugarcane Mud
- M. Javaid Gul Hasan (Session 2013-15) Oil field produced water treatment for safe disposal by electro-floatation technology
- Sibtain Raza (Session 2013-15) Cocos Nucifera Shell activated carbon for water treatment

Workshops and Trainings

- Industrial training (Feb. 15, 2001 to Mar. 14, 2001) at Ittehad Chemicals, Ltd., G.T. Road, Sheikhupura, Pakistan.
- Faculty Training (6^{th} to 10^{th} Sept., 2004) under National Faculty Development Program, conducted at Human Resource Development Centre, University of the Punjab, Pakistan.
- Participated in the Workshop on "Research & Development needs in Textile Processing" (Mar. 28, 2006) at University of the Punjab, under National Core Group in Chemistry, Higher Education Commission Pakistan.
- Participated in the Workshop on "Research & Development needs in Pulp and Paper Industry" (Sept. 20, 2006) at University of the Punjab, under National Core Group in Chemistry, Higher Education Commission Pakistan.
- Participated in the Workshop on "Innovations in Assessment" (Jan. 15, 2007) at Quality Enhancement Cell, University of the Punjab, Pakistan.

- Participated in the "Symposium on Engineering Sciences" (Apr. 30, 2009) at University of the Punjab, Pakistan.
- Participated in the "Workshop on Research Methodologies"(8^{th} to 16^{th} Dec., 2009) at Universiti Teknology PETRONAS, Malaysia.
- Participated and acted as a Judge in the 3^{rd} Invention to Innovation Summit (19^{th} to 20^{th} Mar. 2014) at University of the Punjab, Pakistan.
- Participated in "Indigenous on-Campus Training Program for Management Team" (15^{th} to 19^{th} Dec. 2014) at University of the Punjab, Pakistan.
- Participated in "Workshop on Outcome Based Education and Assessment System of Accreditation" (Mar. 5, 2015) at University of Engineering and Technology, Pakistan.
- Participated and acted as a Judge in the 4^{th} Invention to Innovation Summit (4^{th} to 5^{th} Mar. 2015) at University of the Punjab, Pakistan.
- Participated and acted as a Judge in 5th Invention to Innovation Summit (2^{nd} to 3^{rd} Mar. 2016) at University of the Punjab, Pakistan.
- Participated and successfully completed the Associate Level Training Course on TRIZ (Theory of Inventive Problem Solving) held at Skill Development Centre (16^{th} to 18^{th} Feb. 2016), University of the Punjab, Pakistan.

Memberships

- Member, Pakistan Engineering Council.
- Member, Pakistan Institute of Chemical Engineers.
- Member, Board of Studies, Institute of Chemical Engineering and Technology.
- Member, Board of Faculty, Faculty of Engineering and Technology, University of the Punjab.

Co-Curricular/Administrative Activities

- Working as External Examiner for B.Sc. Chemical Engineering Program of Punjab Institute of Contemporary Sciences, Pakistan.
- Worked as External Examiner for Diploma of Associate Engineering (Glass and Ceramics) Program of Punjab Board of Technical Education, Pakistan.
- Worked as expert with Federal Board of Revenue, Government of Pakistan to assess the consumption of different chemicals for production of finished products.
- Contributed Article on Educational System in "TECHNICO" a magazine of Institute of Chemical Engineering and Technology, University of the Punjab.
- Member, Recreation Committee, Academic Staff Association, University of the Punjab.
- Member, Transport Committee, Academic Staff Association, University of the Punjab.
- Member, Departmental Security Committee, Institute of Chemical Engineering and Technology
- Member, Literary Society, Institute of Chemical Engineering and Technology.
- Interview published in Urdu Daily "Mussawat, Lahore" dated 24^{th} July, 2015.
- Focal person for Student Career Counselling and Placement.
- In-charge, menial staff (25 in number) of Institute of Chemical Engineering and Technology.

Computer Skills

- MS Office
- Sigma Plot

Personal Details

- Date of Birth: 1^{st} Dec., 1978
- Nationality: Pakistani
- Marital Status: Married, have 2 kids.