Muhammad Tawalbeh

Department of Sustainable and Renewable Energy Engineering
College of Engineering, University of Sharjah
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Personal Information:

- Marital status: married
- Nationality: Canadian and Jordanian
- Languages spoken/written: English and Arabic

Research Interest:

1- Membrane synthesis and separation
2- Desalination and wastewater treatment
3- Carbon dioxide capture
4- Renewable energy
5- Fuel cells
6- Nano fluids
7- Adsorption
8- Modeling and simulation

Academic Qualifications:

Ph.D. - University of Ottawa, Ottawa, Ontario, Canada **2007 – 2013**
Department of Chemical and Biological Engineering
Thesis title: "Silicalite-1 Membranes Synthesis, Characterization, CO_2/N_2 Separation and Modeling"
Courses: Adsorption Separations for Environmental Applications, Advanced Transport Phenomena, Membrane Separation Processes, Adsorption Separation Processes.

M. Sc. - Jordan University of Science and Technology, Jordan **1997 – 2000**
Department of Chemical Engineering
Thesis title: "Production of Activated Carbon from Jojoba Seed Residue by Chemical Activation Using a Static Bed Reactor"
Courses: Mathematical Methods in Chemical Engineering, Advanced Chemical Engineering Thermodynamics, Advanced Transport Phenomena, Advanced Chemical Reaction Engineering, Combustion, Process Analysis and Control, Advanced Mass Transfer, Wastewater Engineering.

B. Sc. - Jordan University of Science and Technology Jordan **1992 – 1997**
Department of Chemical Engineering.
Graduation Project: "Design of Acetic Acid Production Plant"
Elective Courses: Petroleum Refinery Engineering, Experimental design and Data Analysis, Extractive Metallurgy, Properties of Materials and Corrosion

Academic/Teaching Experience:

1. **Sep. 2015 – Present:** Assistance professor at the Department of Sustainable and Renewable Energy Engineering at the University of Sharjah, Sharjah, UAE.

2. **Feb. 2015 – June 2015:** Adjunct professor at the Department of Sustainable and Renewable Energy Engineering at the University of Sharjah, Sharjah, UAE.

3. **Feb. 2014 – June 2014:** Adjunct professor at the Department of Chemical Engineering, Abu Dhabi University, Abu Dhabi, UAE.

4. **Sep. 2007 – May. 2012**: Teaching Assistant at the Department of Chemical and Biological Engineering, University of Ottawa, Canada, for the following courses:
   Chemical Engineering Practice, Adsorption Separations for Environmental Applications, Adsorption Separation Processes, Transport Phenomena, Heat Transfer Operations, Chemical Engineering Laboratory, Phase and Chemical Reaction Equilibria, Introduction to Nuclear Engineering.

5. **Sep. 2002 – Dec. 2004**: Research assistant at the Department of Mining, Metals and Materials Engineering, McGill University, Montreal, QC, Canada.

6. **Oct. 2001 – Aug. 2002**: Visiting scholar at the Department of Chemical Engineering, McGill University, Montreal, QC, Canada.

7. **Sep. 1997 - May 1999**: Teaching Assistant at the Department of Chemical Engineering, Jordan University of Science and Technology, Irbid, Jordan, for the following courses:
   Fluid Mechanics, Materials Science, Applied Mathematics of Chemical Engineers, Petroleum Engineering, Numerical Methods for Chemical Engineers. Chemical Engineering Thermodynamics, Equipment Design, Fluid Mechanics Laboratory, Unit Operations Laboratory, and Materials and Corrosion Laboratory.

Courses Taught:

Thermodynamics, Heat Transfer, Heat Transfer Lab, Statics and Dynamics, Introduction to Energy Science and Technology, Fluid Mechanics Lab, Introduction to Chemical Engineering, Senior Design Project I coordination, Senior Design Project II coordination.

Students Supervision:
40 undergraduate senior design projects at University of Sharjah.

Industrial Experience:

1. May 1999 – Oct. 2001: Operation Engineer, Jordan Petroleum Refinery, Zarqa, Jordan.

2. July 1997 – Apr. 1999, Quality Control Engineer, Al Fawz for Detergents and Disinfectants Industries, Irbid, Jordan

Research Experience:

1. Development of composite membranes for direct hydrocarbon proton exchange membrane fuel cells.
2. Development of a novel solar desalination unit using integrated parabolic trough concentrated solar power (CSP) and membrane distillation (MD).
3. Investigation of the efficiency and performance enhancement of solar thermal collectors and solar photovoltaic (PV) systems using nano-fluids.
4. Investigation of thermal energy storage using adsorption technologies to utilize the benefits of renewable energy and waste heat recovery.
5. Development of polymer/zeolite nanocomposite Proton-Exchange membranes for fuel cell applications.

6. Investigation and development of new technologies for carbon dioxide capture and utilization.
7. Synthesis, characterization and utilization of the new zeolite membranes in environmental sustainability applications.
8. Investigation of gas mixtures separation using zeolite membranes.
9. Modeling the pure and gas-mixtures permeation through adsorptive membranes.
10. Investigation of the adsorption of pure gases using volumetric and gravimetric systems.
11. Studying the formation of MgOHCl during the dehydration of magnesium chloride hydrates for the magnesium electrolytic production process for.
12. Studying the thermal properties of electrolytic magnesium production process feed.
13. Studying the kinetics of electrolytic magnesium feed dissolution and reactions.
14. Investigation of the deposition of diamond-like films using Arc Ion Plating (AIP) source.
15. Synthesis and characterization of new activated carbon from Jojoba seed residue using chemical activation.
16. Investigation of the effect of agricultural practices on runoff water quality.

Awards & Distinctions:

1- 2011 – 2012 Excellence Scholarship from University of Ottawa, Ottawa, Canada, of a value of $13,500 CAN/year.

2- 2011 – 2012 Ontario Graduate Scholarship (OGS) of a value of $ 15,000 CAN.

3- 2007 – 2011 PhD Admission Scholarship from University of Ottawa, Ottawa, Canada, of a value of $18,500 CAN/year.

4- 2002 – 2003 Horace G. Young Scholarship for the year 2002 from Mining, Metals and Materials Engineering Department, McGill University, Montreal, Canada, of a value of $ 2000 CAN.

5- 2001 – 2002 M.W. Welch **International Scholarship** for the year 2002 from International Union for Vacuum Science, Technology and Applications, of a value $ 15,000 US.

6- 1997 – 2000 Scholarship for the Master degree from Jordan University of Science and Technology, Jordan.

7- 1992 – 1997 Royal Scholarship for the Bachelor degree from the government of Jordan, Jordan.

Publications:

1- A. Eisa, A. Al-Othman, M. Al-Sayah, **M. Tawalbeh**, Novel composite membranes based on polyaniline /ionic liquids for PEM fuel cells applications, Journal of Key Engineering Materials Aug. 2019 (Accepted).

2- **M. Tawalbeh**, Kinetics study of the digestion of magnesium chloride dihydrate in a molten salt electrolyte, Journal of Key Engineering Materials Aug. 2019 (Accepted).

3- N. Abdelwahab, A. Al-Othman, **M. Tawalbeh**, M. El Haj Assad, K. Khanafer, The effect of the membrane thickness on the performance of direct methanol fuel cell: Factorial design, Journal of Porous Media June 2018 (Accepted).

4- M. Alkasrawi, A.S. Rajangam, **M. Tawalbeh**, F. Kafiah, A. Al-Othman, T. Kurniawan, Q. Sun, Paper mill sludge characterized by scanning electron microscopy: A renewable feedstock for chemicals and biofuels production, International Journal of Energy Research, In Press. DOI: 10.1002/er.5667.

5- A. Al-Othman, P. Nancarrow, **M. Tawalbeh**, A. Kaki, K. El-Ahwal, B. El Taher, M. Alkasrawi, Novel composite membrane based on zirconium phosphate-ionic liquids for high temperature PEM fuel cells, International Journal of Hydrogen Energy, In Press. DOI:10.1016/j.ijhydene.2020.02.112.

6- **M. Tawalbeh**, A.S. Rajangam, T. Salameh, A. Al-Othman, M. Alkasrawi, Characterization of paper mill sludge as a renewable feedstock for sustainable hydrogen and biofuel production, International Journal of Hydrogen Energy, In Press. DOI: 10.1016/j.ijhydene.2020.02.166.

7- H. Mohammed, A. Al-Othman, P. Nancarrow, Y. Elsayed, **M. Tawalbeh**, Enhanced proton conduction in zirconium phosphate/ionic liquids materials for high-temperature fuel cells, International Journal of Hydrogen Energy, In Press. DOI: 10.1016/j.ijhydene.2019.09.118.

8- **M. Tawalbeh**, A. Al-Othman, K. Singh, I. Doub, D. Kabakebji, M. Alkasrawi, Microbial desalination cells for water purification and power generation: A critical review, Energy 209 (2020) 118493.

9- Z. Al-Qodah, **M. Tawalbeh**, M. Al-Shannag, Z. Al-Anber, K. Bani-Melhem, Combined electrocoagulation processes as a novel approach for enhanced pollutants removal: A state-of-the-art review, Science of the Total Environment 744 (2020) 140806.

10- T. Salameh, **M. Tawalbeh**, A. Juaidi, R. Abdallah, S. Issa and A. H. Alami, "A novel numerical simulation model for the PVT water system in the GCC region," 2020 Advances in Science and Engineering Technology International Conferences (ASET), Dubai, United Arab Emirates, 2020, pp. 1-5, doi: 10.1109/ASET48392.2020.9118264.

11- T. Salameh, **M. Tawalbeh**, A. H. Alami, A. Al-Othman, S. Issa and M. Alkasrawi, "Life Cycle Analysis Comparison between Single Crystalline Solar Cells and poly Crystaline Gallium in UAE," 2020 Advances in Science and Engineering Technology International Conferences (ASET), Dubai, United Arab Emirates, 2020, pp. 1-6, doi: 10.1109/ASET48392.2020.9118328.

12- T. Salameh, A. Al-Othman, A. G. Olabi, S. Issa, **M. Tawalbeh** and A. H. Alami, "Comparative life cycle assessment for PEMFC stack including fuel storage materials in UAE," 2020 Advances in Science and Engineering Technology International Conferences (ASET), Dubai, United Arab Emirates, 2020, pp. 1-5, doi: 10.1109/ASET48392.2020.9118189.

13- A. H. Alami, N. Alblooki, **M. Tawalbeh**, Z. Almerashi, A. Alkharousi and T. Salameh, "Compressed air for light vehicle propulsion," 2020 Advances in Science and Engineering

Technology International Conferences (ASET), Dubai, United Arab Emirates, 2020, pp. 1-6, doi: 10.1109/ASET48392.2020.9118278.

14- A.H. Alami, K. Aokal, **M. Tawalbeh**, M. Faraj, A. Majeed, T. Salameh, D. Zhang, A. Al-Othman, "Synthesis and Characterization of Polycrystalline Copper Iodide (CuI) Thin Films," 2020 Advances in Science and Engineering Technology International Conferences (ASET), Dubai, United Arab Emirates, 2020, pp. 1-5, doi: 10.1109/ASET48392.2020.9118282.

15- **M. Tawalbeh**, T. Salameh, M. Albawab, A. Al-Othman, M. El Haj Assad a, A.H. Alami, Parametric study of a single effect lithium bromide-water absorption chiller powered by a geothermal heat source, Journal of Sustainable Development of Energy, Water and Environment Systems 8 (3) (2020) 464-475.

16- A.H. Alami, M. Faraj, K. Aokal, A.A. Hawili, **M. Tawalbeh**, D. Zhang, Investigating various permutations of copper iodide/FeCu tandem materials as electrodes for dye-sensitized solar cells with a natural dye, Nanomaterials 10 (4) (2020) 784; DOI: 10.3390/nano10040784.

17- A.H. Alami, A.A. Hawili, K. Aokal, M. Faraj, **M. Tawalbeh**, Enhanced heat transfer in agitated vessels by alternating magnetic field stirring of aqueous Fe-Cu nanofluid, Case Studies in Thermal Engineering 20 (2020) 100640.

18- F. Almomani, R. Bhosale, M. Khraisheh, A. Kumar, **M. Tawalbeh**, Electrochemical oxidation of ammonia on nickel oxide nanoparticles, International Journal of Hydrogen Energy, 45 (2020) 10398-10408.

19- T. Salameh, M. El Haj Assad**, M. Tawalbeh**, C. Ghenai, A. Merabet, H.F. Öztop, Analysis of cooling load on commercial building in UAE climate using building integrated photovoltaic façade system, Solar Energy 199 (2020) 617-629.

20- A.H. Alami, A. Abu Hawili, **M. Tawalbeh**, R. Hasan, L. Al Mahmoud, S. Chibib, A. Mahmood, K. Aokal, P. Rattanapany, Materials and logistics for carbon dioxide capture, storage and utilization, Science of The Total Environment 717 (2020) 137221.

21- T. Salameh, **M. Tawalbeh**, M. Al-Shannag, M. Saidan, K. Bani Melhem, M. Alkasrawi, Energy saving in the process of bioethanol production from renewable paper mill sludge, Energy 196 (2020) 117085.

22- A. Al-Bsoul, M. Al-Shannag, **M. Tawalbeh**, A.A. Al-Taani, W.K. Lafi, A. Al-Othman, M. Alsheyab, Optimal conditions for olive mill wastewater treatment using ultrasound and advanced oxidation processes, Science of the Total Environment 700 (2020) 134576.

23- A. Ashkanani, F. Almomani, M. Khraisheh, R. Bhosale, **M. Tawalbeh**, K. AlJaml, Bio-carrier and operating temperature effect on ammonia removal from secondary wastewater effluents using moving bed biofilm, Science of the Total Environment 693 (2019) 133425.

24- A. Al Bsoul, M. Hailat, A. Abdelhay, **M. Tawalbeh**, I. Jum'h, K. Bani-Melhem, Treatment of olive mill effluent by adsorption on titaniumoxide nanoparticles, Science of the Total Environment 688 (2019) 1327–1334.

25- A. Al-Othman, P. Nancarrow, **M. Tawalbeh**, A. Kaki, K. El-Ahwal, B. El Taher, Zirconium phosphate-ionic liquid composite membranes for PEM fuel cells operating at 200^{o}C, 8th Global Conference on Global Warming (GCGW-2019) April 22-25, 2019 Doha, Qatar, 332 – 334.

26- **M. Tawalbeh**, F.H. Tezel, M. Al-Ismaily, B. Kruczek, Highly permeable tubular silicalite-1 membranes for CO_2 capture, Science of the Total Environment 676 (2019) 305–320.

27- F, Almomani, R. Bhosale, M. Khraisheh, A. Kumar, **M. Tawalbeh**, Photocatalytic conversion of CO_2 and H_2O to useful fuels by nanostructured composite catalysis, Applied Surface Science 483 (2019) 363–372.

28- E. Bani-Hani, M. El Haj Assad, **M. Tawalbeh**, B. Yousef, A. Sedaghat, Enhancing cooling system of a combustion engine by integrating with a Stirling cycle, Energy Engineering 116 (2019) 41-53.

29- H. Mohammed, A. Al-Othman, P. Nancarrow, **M. Tawalbeh**, M. El Haj Assad, Direct hydrocarbon fuel cells: A promising technology for improving energy efficiency, Energy, Energy 172 (2019) 207-219.

30- A. Al-Othman, N.N. Darwish, M. Qasim, **M. Tawalbeh**, N.A. Darwish, N. Hilal, Nuclear desalination: A state-of-the-art review, Desalination 457 (2019) 39-61.

31- F. Almomani, A. Al Ketife, S. Judd, M. Shurair, R. Bhosale, H. Znad, **M. Tawalbeh**, Impact of CO_2 concentration and ambient conditions on microalgal growth and nutrient removal from wastewater by a photobioreactor, Science of the Total Environment 662 (2019) 662–671.

32- T. Salameh, **M. Tawalbeh**, M. Albawab, A.H. Alami, A. Al-Othman, M. El Haj Assad, Simulation of a residential space cooling system by geothermal energy in the UAE, The International Conference on Energy, Water & Environmental Sciences (ICEWES 2018) Ras Al Khaimah-UAE, November 13-15, 2018.

33- E. Bani-Hani, **M. Tawalbeh**, A. Al-Othman, M. El Haj Assad, Rheological study on seawater contaminated with oil components, Polish Journal of Environmental Studies 28 (2019), 1-7.

34- A. Hai Alami, K. Aokal, D. Zhang, **M. Tawalbeh**, A. Alhammadi, A. Taieb, Assessment of Calotropis natural dye extracts on the efficiency of dye-sensitized solar cells, Agronomy Research 16 (2018) 1569–1579.

35- **M. Tawalbeh**, A. Al Mojjly, A. Al-Othman, N. Hilal, Membrane separation as a pre-treatment process for oily saline water, Desalination 447 (2018) 182–202.

36- A. Al-Othman, **M. Tawalbeh**, M. El Haj Asaad, T. Alkayyali, A. Eisa, Novel multi-stage flash (MSF) desalination plant driven by parabolic trough collectors and a solar pond: A simulation study in UAE, Desalination 443 (2018) 237–244.

37- M. El Haj Assad, E.H. Bani-Hani, B. Yousef, A. Seagate, **M. Tawalbeh**, Simplified model for thermo- and diffusiophoretic deposition in a heat exchanger, JP Journal oh Heat and Mass Transfer 15 (2017) 1–13.

38- **M. Tawalbeh**, A. Al-Othman, M. El Haj Assad, Graphene oxide - Nafion composite membrane for effective methanol crossover reduction in passive direct methanol fuel cells. 5th International Conference on Renewable Energy Generation and Applications, (ICREGA'18), pp. 192-196, United Arab Emirates. (published in IEEE Xplore DOI: 10.1109/ICREGA.2018.8337596) (2018).

39- M. El Haj Assad, **M. Tawalbeh**, T. Salameh, A. Al-Othman, Thermodynamic analysis of lithium bromide absorption chiller driven by geothermal energy, 5th International Conference on Renewable Energy: Generation and Applications, (ICREGA'18), pp. 76-81, United Arab Emirates. (published in IEEE Xplore DOI: 10.1109/ICREGA.2018.8337607) (2018).

40- T. Salameh, **M. Tawalbeh**, M. El Haj Assad, Experimental and numerical studies of heat transfer using three different types of nanofluid in concentric tube heat exchanger, 5th International Conference on Renewable Energy: Generation and Applications (ICREGA'18), pp. 232-237, United Arab Emirates. (published in IEEE Xplore DOI: 10.1109/ICREGA.2018.8337627) (2018).

41- A.H. Alami, **M. Tawalbeh**, D. Zhang, C. Aokal, L. Elsherbiny, Z. Yasser, A. Abdelghani, Linear Angstrom model applied to weather data collected for the city of Sharjah, 5th International Conference on Renewable Energy: Generation and Applications (ICREGA'18), pp. 150-153, United Arab Emirates (published in IEEE Xplore DOI: 10.1109/ICREGA.2018.8337583) (2018).

42- D. Zhang, A.H. Alami, **M. Tawalbeh**, C. Aokal, A. Alhammadi, A. Taieb, R. Abu Rabah, Efficiency and high-temperature response of dyesensitized solar cells using natural dyes extracted from Calotropis, 5th International Conference on Renewable Energy: Generation and Applications (ICREGA'18), pp. 183-187, United Arab Emirates. (published in IEEE Xplore DOI: 10.1109/ICREGA.2018.8337593) (2018).

43- A.A. Hachicha, **M. Tawalbeh**, Design of a new concentrated photovoltaic system under UAE conditions, American Institute of Physics (AIP) Conf. Proc. 1850, 110004-1–110004-9; DOI: 10.1063/1.4984478, 2017.

44- M. Albuzaudi, T. Eerikäinen, O. Turunen, M. Ghelawi, M. El Haj Assad, **M. Tawalbeh**, S. Shamekh, Effect of gamma irradiation and heat treatment on the artificial contamination of maize grains by Aspergillus flavus Link NRRL 5906, Journal of Stored Products Research 71, 57–63, 2017.

45- A. Al-Othman, Y. Zhu, **M. Tawalbeh**, A.Y. Tremblay, M. Ternan, Proton conductivity and morphology of new composite membranes based on zirconium phosphates, phosphotungstic acid, and silicic acid for direct hydrocarbon fuel cells applications, Journal of porous materials, 24 (3), 721 – 729, 2017.

46- **M. Tawalbeh,** F.H. Tezel, B. Kruczek, S. Letaief, C. Detellier, Synthesis and characterization of silicalite-1 membrane prepared on a novel support by pore plugging method, J. Porous Materials, 20: 1047 – 1421, 2013.

47- **M. Tawalbeh,** B. Kruczek, F.H. Tezel, S. Letaief, C. Detellier, Separation of CO_2 and N_2 gases using a novel zeolite membrane, Separation Science and Technology, 47: 1606 – 1616, 2012.

48- M. Tawalbeh, M. Allawzi, M. Kandah, Production of activated carbon from Jojoba seed residue by chemical activation using a static bed reactor, Journal of Applied Sciences, 5: 482 – 487, 2005.

49- M. Tawalbeh, and Harris, R., Thermal properties of electrolytic magnesium production feed, Magnesium Technology 2005, Edited by N.R. Neelameggham, H.I. Kaplan, and B.R. Powell, Feb. 17-23, TMS, Warrendale PA, 33 – 37, 2005.

50- M. Tawalbeh, Ng, K.W., and Harris, R., Formation of MgOHCl during dehydration of magnesium chloride hydrates by contacting with molten salt, Light Metals 2004, Edited by D. Gallienne and R. Ghomashchi, METSOC (CIM), 417 – 430, 2004.

Conference Presentations:

1. "A novel numerical simulation model for the PVT water system in the GCC region" 2020 International Conference on Renewable and Sustainable Energy - 2020 Advances in Science and Engineering Technology (ASET) International Conferences, Dubai, United Arab Emirates.
2. "Life Cycle Analysis Comparison between Single Crystalline Solar Cells and poly Crystalline Gallium in UAE" 2020 International Conference on Renewable and Sustainable Energy - 2020 Advances in Science and Engineering Technology (ASET) International Conferences, Dubai, United Arab Emirates.
3. "Novel composite membranes based on polyaniline/ionic liquids for PEM fuel cells applications" ^{6}th International Conference on Materials Science & Smart Materials (MSSM2019) Aston University, Birmingham, UK July 24-26, 2019.
4. "Kinetics Study of the Digestion of Magnesium Chloride Dihydrate in a Molten Salt Electrolyte" ^{6}th International Conference on Materials Science & Smart Materials (MSSM2019) Aston University, Birmingham, UK July 24-26, 2019.
5. "Modeling the transport of CO_2, N_2 and their binary mixtures through thin silicalite-1 membrane using Maxwell−Stefan equations" ^{6}th International Conference on Materials Science & Smart Materials (MSSM2019) Aston University, Birmingham, UK, July 24-26, 2019.
6. "Zirconium Phosphate-Ionic Liquid Composite Membranes for PEM Fuel Cells Operating at 200^{o}C" 8th Global Conference on Global Warming (GCGW-2019) April 22-25, 2019 Doha, Qatar, 332 – 334.
7. **"**Parametric study of a single effect lithium bromide-water absorption chiller powered by a geothermal heat source" The International Conference on Energy, Water & Environmental Sciences (ICEWES 2018) Ras Al Khaimah-UAE, November 13-15, 2018.
8. "Simulation of a residential space cooling system by geothermal energy in the UAE" The International Conference on Energy, Water & Environmental Sciences (ICEWES 2018) Ras Al Khaimah-UAE, November 13-15, 2018.
9. "Graphene oxide - Nafion composite membrane for effective methanol crossover reduction in passive direct methanol fuel cells" 5th International Conference On Renewable Energy Generation and Applications, (ICREGA'18), Al Ain, Abu Dhabi, United Arab Emirates. Feb. 26th to 28th 2018.

10. "Thermodynamic analysis of lithium bromide absorption chiller driven by geothermal energy" 5th International Conference on Renewable Energy: Generation and Applications, (ICREGA'18), Al Ain, Abu Dhabi, United Arab Emirates. Feb. 26th to 28th 2018.
11. "Experimental and numerical studies of heat transfer using three different types of nanofluid in concentric tube heat exchanger" 5th International Conference on Renewable Energy: Generation and Applications (ICREGA'18), Al Ain, Abu Dhabi, United Arab Emirates. Feb. 26th to 28th 2018.
12. "Novel GO/Nafion/ZrP composite membrane for effective methanol crossover reduction in pDMFC," 7th Invitational Colloquium on Fuel Cells, Aug. 15th, 2017, Ottawa, Canada.
13. "Graphene oxide – Nafion composite membrane for effective methanol crossover reduction in pDMFC" ICANM2017: International Conference & Exhibition on Advanced & Nano Materials, Toronto, Canada, Aug. 7th to 9th 2017.
14. **"**Graphene/ZrP/PTFE composite membranes for passive DMFC" 11TH International Conference on Composite Science and Technology (ICCST 11), 4th to 6th April 2017, Sharjah, UAE.
15. **"**Graphene Nafion composite membrane as an effective membrane for passive DMFC" 11TH International Conference on Composite Science and Technology (ICCST 11), 4th to 6th April 2017, Sharjah, UAE.
16. "Modeling the diffusion of CO_2, N_2 and their binary mixtures across silicalite-1 zeolite membrane using Maxwell-Stefan (M-S) Equations" 63rd Canadian Chemical Engineering Conference, Oct. 20th to 23th, 2013 Frederiction, NB, Canada.
17. "Separation of greenhouse gases using MFI type silicalite-1 zeolite membranes" 63rd Canadian Chemical Engineering Conference, Oct. 20th to 23th, 2013 Frederiction, NB, Canada.
18. "Separation of CO_2/N_2 and CO_2/CH_4 Gas mixtures with new silicalite-1 adsorbent membranes synthesized on a novel support", 11th Fundamentals of Adsorption Conference, May 19th to 24th, 2013, Baltimore, Maryland, USA.
19. "Silicalite Adsorbent Membranes for Separation of CO_2 and N_2 Gases" AICHE 2012 Annual Meeting Conference, Oct. 28th to Nov. 2nd, 2012, Pittsburgh, PA, USA.
20. "Synthesis, Characterization and Application of Novel Inorganic Membranes Derived from Sepiolite or Zeolite over Porous Support" EUROCLAY 2011 European Clay Conference June 26th to July 1st, 2011 Antalya, Turkey.
21. "Novel Inorganic Membranes for CO_2 and N_2 Separation" 3rd IUPAC Conference on Green Chemistry, August 15th to18th, 2010, Ottawa, Ontario, Canada.
22. "Synthesis, morphology characterization and gas permeation properties of new inorganic membrane" 16th International Zeolite Conference joint with the 7th International Mesostructured Materials (IZC16 – IMMS7) July 4th to 9th, 2010, Sorrento, Italy.
23. "Thermal properties of electrolytic magnesium production feed" 134 Minerals, Metals & Materials Society Annual Meeting & Exhibition (TMS 2005) Feb. 13th to 17th, 2005, San Francisco, California, USA.
24. "Formation of MgOHCl during dehydration of magnesium chloride hydrates by contacting with molten salt" Conference of Metallurgists (COM 2004) Aug. 22th to 25th, 2004, Hamilton, ON, Canada.