

## **Prof. S. M. Javaid Zaidi, Ph.D. (Laval Univ. Canada)**

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**Nationality:** Canadian  
**Date of Birth:** 11/07/1963

**Research Interests:** Advanced nano-structured membranes and materials for water, wastewater and energy applications, fuel Cells, CNT based electrocatalyst for fuel cells and carbon capture. Thin Film composite membranes for water treatment.

### **Qualifications**

**Ph.D.** Chemical Engineering, Laval University, Canada, 2000  
Thesis title: *Development of composite membranes for applications in fuel cell*

**M.Sc.** Chemical Engineering, King Fahd University of Petroleum and Minerals (KFUPM), Saudi Arabia, 1991.

**B.Sc.** Chemical Engineering (First Class Honors), Aligarh University, India, 1986.

### **Experience (Past and Current Positions)**

**02/2013 –Present** *Senior Research Fellow*  
Australian Institute for Bioengineering and Nanotechnology  
The University of Queensland,  
Brisbane, Australia

**05/2010 – 02/2013** *Professor and Group Leader/ Head of Fuel Cell Research*  
Chemical Engineering Department,  
King Fahd University of Petroleum & Minerals(KFUPM)  
Dhahran 31261, Saudi Arabia

**11/2006 – 09/2010** *Associate Professor*  
Chemical Engineering Department,  
King Fahd University of Petroleum & Minerals(KFUPM)  
Dhahran 31261, Saudi Arabia

- 08/2000 – 11/2006**      *Assistant Professor*  
Chemical Engineering Department,  
KFUPM, Dhahran 31261, Saudi Arabia
- Summer 2009-to 2013**      *Visiting Professor, MIT Center for Clean Water and Clean Energy*  
Massachusetts Institute of Technology (MIT), USA
- 11/ 2007 – 12/2012**      *Head, Fuel Cell Research*  
Center of Research Excellence in Renewable Energy  
A National Research Center, KFUPM, Saudi Arabia.
- 01/ 1996 – 07/ 2000**      *Research Fellow*  
Chemical Engineering Department  
Laval University, Quebec, Canada
- Summer 1999**      *Guest Worker, Institute of Chemical Process and*  
Environment Technology, National Research Council  
of Canada, Ottawa, Canada
- 05/1991 – 12/1995**      *Research Engineer, Petroleum & Gas Technology Division*  
Research Institute, King Fahd University of Petroleum & Minerals,  
Dhahran 31261, Saudi Arabia
- 9/1987 – 01/1991**      *Research Assistant, Department of Chemical Engineering*  
KFUPM, Dhahran 31261, Saudi Arabia.

## **Grants - Funding Secured**

External Funding : 2008-2014 -- (approx. \$ 6 Million USD)

- Zinc Oxide Australia, **AUD11,000** , May 2013 (Zaidi and Vinu)
- Saudi Arabia, King Fahd University, **\$ 48,200** and **\$30,000**, March 2013 (Vinu and Zaidi)
- National Science, Technology and Innovation Plan Grant: **Ca. 8 million Saudi Riyals (3 million USD)** from 2009 to 2013
- CoRe-Renewable Energy-Project Leader: **Ca. 7.5 million Saudi Riyals (2 million USD)** from the Saudi Arabian Ministry of Higher Education, title: Development of membranes and Catalytic Materials for Fuel Cells and CO<sub>2</sub> conversion, 2008-20112.
- MIT/KFUPM Collaborative Research Grant: **ca. 3.5 million Saudi Riyals (1 million USD)**, 2008-2014.
- KACST/TIC Carbon Capture Grant: **ca. 2 million Saudi Riyals(650,000 USD)**, 2012-2014.
- KFUPM/DSR: **600000 Saudi Riyals (200,000 USD)**, 2006-2008
- SABIC/KFUPM: **40000 Saudi Riyals (120,000 USD)**, 2003-2005.
- KACST: **2 million Saudi Riyals (1.2 millionUSD)**, 2001-2003

- Petroleum Energy Center, MITI, Japan: **5 million Saudi Riyals (1.5 million USD)** under Saudi-Japanese Research Collaboration for the Development of Hydrocracking Catalysts for Heavy Oil Upgrading 1994-2000.
- Saudi Aramco: 4 million Saudi Riyals (**1.2 million USD**), 1992-1995
- Canada: NSERC, CANMET Grant: **500000 USD**, 1996-2000.

## **Awards, Prizes and Honours**

1. Almarai Prize for *Scientific Research Innovation*, 2011-2012, Saudi Arabia's most prestigious research innovation award.
2. Indian Engineering Forum (IEF) award for contribution in Research given by the H.E. Hamid Ali Rao, Indian Ambassador to Saudi Arabia in November 2012.
3. *Excellence in Research Award for the year 2005-2006*, King Fahd University of Petroleum & Minerals, Dhahran, Saudi Arabia.
4. *Distinguished Researcher Award* for the Year 2004/2005, College of Engineering, King Fahd University of Petroleum & Minerals, Dhahran, Saudi Arabia.
5. *ARWADEX (Arab Desalination) Award*, April 2012.
6. Member of the distinguished KFUPM Research Advisory Board headed by H.E. the Rector of the University, 2006-2010.
7. *Founding member* of the Center of Research Excellence in Renewable Energy, Ministry of Higher Education.
8. *Founding member* of the Technology Innovation Center in Carbon Capture and Sequestration at KFUPM by the Govt of Saudi Arabia.
9. *Member of Executive Committee* of the Center of Research Excellence in Renewable Energy, Ministry of Higher Education.
10. *Member*, Board of Directors, Center of Research Excellence in Renewable Energy
11. *Nominated* for the ENI Energy Prize for the year 2008, Italy
12. *Recipient of KFUPM Patent Award*, 2010.
13. *Invited by UNESCO* to participate in the Ministerial Meeting on Energy and water in its headquarter in Paris, June 2007.
14. Evaluation committee member for Excellence in Research Award of KFUPM. formed by the Dean of Scientific Research, March 2010.
15. *Recipient* of FCAR award from Government of Canada for outstanding performance and excellence in research (1998).
16. *Recipient* of Canadian Government fellowship to pursue Ph.D. in Chemical Engineering at Laval University (1996-2000).
17. *Recipient* of Saudi Arabian Ministry of Higher Education scholarship to pursue M.S. in Chemical Engineering at King Fahd university of Petroleum, Saudi Arabia (1987-91).
18. *Recipient* of Merit Scholarship at AMU in B.Sc. Engineering.
19. Visiting Professor, Massachusetts Institute of Technology, USA
20. Visiting Professor, Ottawa University, Canada
21. Visiting Professor, University of Montreal, Canada
22. Visiting Professor, Queens university, Canada
23. Member of KACST Proposal coordination Committee.
24. Member of Unifying Efforts in Desalination Research Forum, a national body

25. Invited by the European Membrane Society to deliver special lecture in the Middle East-European Membrane Society School at KAUST, Saudi Arabia, May 2012.
26. PhD thesis examiner of Indian Institute of Technology, India.
27. PhD thesis examiner of King Saud University, Saudi Arabia
28. PhD thesis examiner of King Fahd University of Petroleum & Minerals.
29. PhD thesis examiner of Aligarh Muslim University, India.
30. PhD thesis examiner of University Teknologi Malaysia (UTM), Malaysia
31. Evaluation committee member of faculty promotion of King Fahd University of Petroleum & Minerals
32. Chairman of promotion committee of faculty at King Fahd University of Petroleum & Minerals
33. Project review committee member of Emirate Foundation, UAE.
34. Project review committee member of KACST, Saudi Arabia.
35. Project review committee member of Imam University, Saudi Arabia
36. Evaluation committee member of SABIC Design Award for the best student Design Project
37. Evaluation committee member for Excellence in Research Award of KFUPM. formed by the Dean of Scientific Research, March 2010.
38. Chaired session in the 1<sup>st</sup> Saudi Renewable Energy Conference, KFUPM, Dhahran, Saudi Arabia, February 2011.
39. Chaired session in International Scientific Committee, 7<sup>th</sup> International Conference on Membrane Science & Technology, Malaysia, May 2009.
40. Best Paper Award in the International conference on Electrochemical Power Systems, Hyderabad, India, December 20-21, 2004.

### **International Collaborations:**

Massachusetts Institute of Technology (MIT), USA (Prof. Paula Hammond), UNESCO Center for Membrane Science, University of New South Wales, Australia (Prof. Vicky Chen, Center Director), Case Western Reserve University, USA (Prof. Savinell), Center for Clean Energy, University of British Columbia, Canada (Prof. David Wilkinson, Center Director), National Fuel Cell Research Center, Queens University, Canada (Prof. John Pepply, Center Director), Ottawa University, Canada (Prof. T. Matsuura), National Institute of Materials Science, Japan, University of Compostela, Spain (Prof. Velulenga), Laval University, Canada (Prof. Kaliaguine) Indian Institute of Technology (IIT) Delhi, India (Prof. S. Basu), University Teknologi Malaysia (UTM), Malaysia (Prof. Fauzi Ismail), Petroleum Energy Center, MITI, Japan.

### **Invited Lectures**

Have been invited to deliver keynote and plenary invited lectures at various International/National Conferences and reputed institutions upon invitation.

1. The 8th International Conference on Membrane Science and Technology (MST), November 29- December 1, 2010, ITB Bandung, Indonesia, "Development of composite membranes for fuel cell applications" (*Keynote Lecture*).

2. European Membrane Society- Middle East School, King Abdullah University of Science and Technology, May 28-31, 2012, “ Status of Fuel Cell Membranes Research in Saudi Arabia”.
3. International Conference on Membrane Science & Technology (MST 2009), May 13-15, 2009, Kuala Lumpur, Malaysia, “Progress in Polymer Electrolyte Membrane Research for Fuel Cell Applications”( *Keynote Lecture* )
4. International Symposium and Exhibition on Fuel Cell Technologies, November 11-13, 2009, Mumbai, India, "Progress and Novel strategies for Membrane Development for PEM Fuel Cell", (**Plenary Speaker**).
5. International Symposium on High-Tech Polymeric Materials, October 26-31, 2008, Beijing, China, "Characterization of Polymeric membrane Materials for Fuel Cell Applications" (**Keynote Speaker**)
6. International Symposium on High Tech polymeric materials", May 14-17, 2006, Beijing, China, "Proton conducting polymer composites as membrane materials for PEM fuel cells applications, (**Keynote Lecture**)
7. National Fuel cell Research Center, Queens University, Kingston, Canada, July 2008, “Development of Composite Membranes for Fuel Cells,.
8. Massachussets Institute of Technology, March 25, 2013USA, “Developmet of Multilayer Membranes for Reverse Osmosis Desalination”.
9. Performnace Evaluation and Testing of New membranes and electro-catalyst for fuel cells, Ministry of Higher Education, Center of Research Excellence in Renewable Energy, KFUPM, November 2009.
10. KFUPM-NUS workshop, January, 2009, KFUPM, Dhahran, “Overview of membrane Research at KFUPM”.
11. National Desalination Workshop, SWCC, Jubail, October 2009, “Desalination Research at KFUPM”.
12. University of Montpelliers, France, July 2008, “Development of Membrane Materials for PEM Fuel Cell”, seminar presented at CNRS
13. National Institute of Materials Science, Skuba, Japan, August 2010, Overview of fuel cell Research activities at KFUPM.
14. MIT, USA, July 30, 2010, “Sharing the experience of collaborative research of KFUPM-MIT Cooperation”.
15. Center of Research Excellence in Renewable Energy, KFUPM, January 2010, Performnace Evaluation composite membranes for fuel cells,
16. KFUPM-MIT Video Conference Meeting, Dhahran, March 2007, “Membrane Research at KFUPM”.
17. GKSS Geeshtat, Germany, March 2007, “Advancements in membrane research for fuel cell applications”, July 2005,

**Citations: 1500**

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## **List of Publications (Patents, Journals, Books, and Conferences)**

### **Patents**

1. **S.M. Javaid Zaidi**, M. Bello, S. Ahmed, S.U. Rahman, “*Methanol Electro-Oxidation Catalyst and Method of Making the Same*”, US Patent No. US 2013165318-A1, June 2013.
2. **S.M. Javaid Zaidi**, M. Bello, S. Ahmed, S.U. Rahman, “*Fuel cell Membrane Electrode Assembly*”, US Patent No., US2012141907 A1, June 7, 2012.
3. **S.M. Javaid Zaidi**, S.U. Rahman, Nabeel Abo-Ghander, " *Integrated Electrolytic Electrodialytic apparatus and process for recovering metals and metal ions-containing Waste Streams* " United States Patent No. US 7790016 (September 7, 2010).
4. S.Kaliaguine, S.D.Mikhailenko, **S.M.Javaid Zaidi**, " *Composite electrolyte membranes for fuel Cells and methods of making same*", United States Patent no. US 6,716,548 (06/04/2004).
5. S.Kaliaguine, S.D.Mikhailenko, **S.M.Javaid Zaidi**, " *Composite polymer electrolyte membrane for fuel Cell includes inorganic solid acid and polymer matrix which improves protonic conductivity*" , Canadian Patent No. CA 2292703 A, A1 (8/12/1998).
6. Mikhailenko, S; Kaliaguine, S.; **S.M.Javaid Zaidi**, " *Composite Electrolyte membranes for fuel Cell comprises boron phosphate solid electrolyte embedded in polymer matrix*" , Canadian Patent No. CA2256829-A1 (June 2000).
7. **S.M. Javaid Zaidi**, S.U. Rahman, Nedal Abu Thabit, *Fuel Cell Membranes*, US Patent number "14/023,466", September 2013 (*Patent Pending*).
8. **S.M. Javaid Zaidi**, M. Bello, S. Ahmed, S.U. Rahman, “*Novel Method to Prepare High Activity Ternary Methanol Electro-Oxidation Catalysts*”, US Patent No. US 2013172174-A1, July 2013.
9. Safdar, S, **S.M. Javaid Zaidi**, S. Ahmed, S.U. Rahman, “ *Electrocatalysts for electrochemical reduction of carbon dioxide*”, US Patent Application, Docket No. 33000-72 (June 2011).
10. Safdar, S, **S.M. Javaid Zaidi**, S. Ahmed, S.U. Rahman, “ *Titania nanotubes based electrocatalyst for electrochemical reduction of carbon dioxide* ”, US Patent Application, (Nov. 2011).
11. **S.M. Javaid Zaidi**, Farid, F, Z.U. Khan, M. Khaled, P. Hammond, *Polyelectrolyte Multilayer Membranes made by spin assisted Layer by Layer Assembly for Reverse Osmosis Desalination*, US Patent application (Applied in December. 2012).
12. **S.M. Javaid Zaidi**, Farid, F, Z.U. Khan, M. Khaled, P. Hammond, *Nanostructured membranes for Reverse Osmosis Desalination*, US Patent application (Applied in December 2012).
13. Z.U. Khan, Asif Matin, Karen Gleason, Rong Yang, Mazen Khaled, **S. M. Javaid Zaidi**, *Surface Modified RO Membranes Discourage Irreversible Adhesion of Bacteria*, US Patent application (Applied in December 2012).
14. Asif Matin, Z.U. Khan, Karen Gleason, Gozde Ozaydin, Mazen Khaled, **S. M. Javaid Zaidi**, *Amphiphilic Copolymer Films with Molecular-scale Compositional Heterogeneties interfere with Biopolymer Adsorption*, US Patent application (Applied in December 2012).
15. **S. M. Javaid Zaidi** Fahad A. Al-Khaldi, Basil Abusharkh, , Muataz A. Atieh, *Removal of Cadmium from Water Using Fly Ash and Other Carbon Based Adsorbents*, US Patent application (Applied in February 2013).

## **Books**

1. **S.M.J.Zaidi**, T. Matsuura (Eds.): *Polymer membranes in Fuel Cell*, Springer Science & Business media inc., New York, USA., 2009.

## **Book Chapters**

2. **S.M. Javaid Zaidi\***, A. Al-Ahmed, Effect of processing parameters for SPEEK based composite PEMFC membranes, Book Chapter in *Membrane Fabrication*, Hilal, Ismail, Wright (Eds.), Taylor Francis, 2013.
- 3.
4. **S. M. Javaid Zaidi\***, Kirpal S. Lakhi, "Sulfonated Aromatic Polymer Membranes", contribution in *Encyclopaedia of Membranes*, E. Driolo and L. Giorno (Eds), Springer, 2013.
5. **S. M. Javaid Zaidi\***, Kirpal S. Lakhi, "Polyethylene Membranes", contribution in *Encyclopaedia of Membranes*, E. Driolo and L. Giorno (Eds), Springer, 2013.
6. **S.M.Javaid Zaidi\***, Kirpal S. Lakhi, "Sulfonated Block Copolymer Membrane", contribution in *Encyclopaedia of Membranes*, E. Driolo and L. Giorno (Eds), Springer, 2013.
7. **S. M. Javaid Zaidi\***, Kirpal S. Lakhi, "Polyetherimide Membranes", contribution in *Encyclopaedia of Membranes*, E. Driolo and L. Giorno (Eds), Springer, 2013.
8. Amir-Al-Ahmed, Abdullah S. Sultan, **S. M. Javaid Zaidi\***, Sulfonated Polyether-ether ketone (SPEEK): A promising membrane material for Polymer Electrolyte Fuel Cell, Book chapter in *Ion-Exchange Technology: Theory, Materials and Applications*, Inamuddin and Luqman (Eds.), *Springer Publishing co., New York, USA, 2012*.
9. **S. M. Javaid Zaidi\***, M. Abd. Rauf, "Fuel Cell Fundamentals- Properties of fuel cell membranes", Book Chapter in *Polymer Membranes for Fuel Cells*, Zaidi &Matsuura (Eds.), Springer Publishing co., New York, USA, 2009.
10. **S. M. Javaid Zaidi\***, "Research Trends in Polymer Electrolyte Membranes for PEMFC", Book Chapter in *Polymer Membranes for Fuel Cells*, Zaidi & Matsuura(Eds.), Springer Publishing co., New York, USA, 2009.
11. **S. M. Javaid Zaidi\***, S.U. Rahman, "Methanol Permeation through proton exchange membranes" Book Chapter in *Polymer Membranes for Fuel Cells*, Zaidi &Matsuura (Eds.), Springer Publishing co., New York, USA, 2009.
12. **S. M. Javaid Zaidi\*** H.I. Hussein, "Thermal and Mechanical Properties of Fuel Cells Polymeric membranes" Book Chapter in *Polymer Membranes for Fuel Cells*, Zaidi &Matsuura (Eds.), Springer Publishing co., New York, USA, 2009.
13. Deepak Rana, T. Matsuura, **S. M. Javaid Zaidi\***, "Research and Development on Polymeric Membranes for Fuel cells: An Overview ", Book Chapter in *Polymer Membranes for Fuel Cells*, Zaidi &Matsuura (Eds.), Springer Publishing co., New York, USA, 2009.

## **Journal Publications:**

16. Gozde, Ozaydin-Ince, A. Matin, Z.U. Khan, **S. M. Javaid Zaidi**, K. K. Gleason, "Surface Modification of Reverse Osmosis Desalination Membranes by Thin-Film Coatings Deposited by Initiated Chemical Vapor Deposition, *Thin Solid Films*, 539 (2013)181-187. (**Impact Factor 2.014**)

17. C. Satija, J. A. Jyothsa, S. U. Rahman, **S. M. Javaid Zaidi**, S. Basu, "Development of Sn/Al<sub>2</sub>O<sub>3</sub> catalyst for carbon dioxide electro-reduction to organic compounds", *Int. J. of Hydrogen Energy* (**Impact Factor 4.05**), accepted (Jan. 2013).
18. M. AbdurRauf, S. Ahmed, **S. M. Javaid Zaidi\***, "Comparative studies for fuel cell performance and mechanical tensile properties of pure and composite sulfonated polyether ether ketone (SPEEK) membranes", *J. Membrane Science* (**Impact Factor 4.3**), under review (Feb. 2013).
19. **S. M. Javaid Zaidi**, "Solution viscosity behavior of sulfonated poly(ether ether ketone)/polyetherimide and polysulfone polymers used in fuel cell applications", *e-Polymers* (**Impact Factor 0.515**), accepted, December 2012.
20. Farid Fadhillah, **S. M. Javaid Zaidi**, Z. Khan, M. Khaled, P. Hammond, Modified Ultrafiltration membranes via LBL assembly for NF/RO application in Desalination", *Desalination Journal* (**Impact Factor 2.59**), accepted, Feb. 2013.
21. F. Fadhillah, **S. M. Javaid Zaidi\***, Zafarullah Khan, Mazen M.M. Khaled, F. Rahman, Paula T. Hammond (2013), "Development of Polyelectrolyte Multilayer Thin Film Composite Membrane for water desalination application", *Desalination*, 318 (2013) 19-24 (**Impact Factor 2.59**)
22. F. Fadhillah, **S. M. Javaid Zaidi\*** (2012) Zafarullah Khan, Mazen M. Khaled, Paula T. Hammond (2012), "Development of Polyelectrolyte Multilayer Thin Film Composite Membrane Fabricated through Spin Assisted Layer by Layer Assembly", *J. Applied Polymer Science*, vol 126(4), 1468-1474 (**Impact Factor 1.289**).
23. N. Abu-Thabit, Nedal; Ali, Shaikh Asrof; **S. M. Javaid Zaidi\*** (2012); Mezghani, Khaled (2012), Novel Sulfonated Poly(ether ether ketone) / Phosphonated Polysulfone Polymer Blends for Proton Conducting Membranes, *Journal of Materials Research*, 27(15), 1958-1968 (Cover page image) (**Impact Factor 1.434**) .
24. A. S. Sultan, Amir-Al-Ahmed, **S. M. Javaid Zaidi\*** (2012) Morphology, Viscosity and Rheology of Sulfonated Poly(ether ether ketone): PEM fuel cell Membrane material, *Macromol. Symp.*, 313-314, 182-193 (**Impact Factor 0.93**).
25. A.S. Sultan, Amir-Al-Ahmed, **S. M. Javaid Zaidi\*** (2011) Reduced Viscosity, Rheology and Morphological Properties of Sulfonated Poly (ether ether ketone): Polyetherimide blends, *European Polymer Journal*, vol. 47(12), 2295-2305 (**Impact Factor 2.739, Citations: 5**).
26. A. Al-Ahmed, M. Bello, S. Hossain, **S. M. Javaid Zaidi\***, S.U. Rahman (2012), Application of titanium dioxide (TiO<sub>2</sub>) based photocatalytic nanomaterials in solar and Hydrogen Energy: A Review, *Materials Science Forum*, vol. 712, 25-47 (**Impact Factor 0.88**).
27. S. Chauhan, G. P. Mane, C. Anand, D. S. Dhawale, B.V. Subba Reddy, **S. M. Javaid Zaidi**, Salem S. Al-Deyab, V.V. Balasubramanian, T. Mori, and A. Vinu\*, Low temperature synthesis of pyrano- and furo[3,2-c]quinolines via Povarov reaction using highly ordered 3D nanoporous catalyst with a high acidity, *Synlett*, 15, 2237-2240, 2012 (**Impact Factor 2.710**).
28. N. Abu Thabit, Sk. Ali, **S. M. Javaid Zaidi\*** (2010), "New Highly Phosphonated Polysulfone Membranes for PEM Fuel Cells", *Journal of Membrane Science*, 360 2010, pp 26-33 (**Impact Factor 3.85, Citations: 7**).



29. M. Inamuddin, M, **S. M. Javaid Zaidi\***, S.U.Rahman (2010) “Three Dimensional Numerical Investigations for the Effects of Gas Diffusion Layer on PEM Fuel Cell Performance”, *Renewable Energy*, 36(2), 529-535 (**Impact Factor 3.2, Citations:4**).
30. **S. M. Javaid Zaidi** (2011) “Comparative Study of Electrochemical Methods for Determination of Methanol Permeation through Proton Exchange Membranes”, *Arabian Journal for Science and Engineering*, 36, 689-701 (**Impact Factor 0.93, Citations: 21**).
31. K. P. S. Prasad, D. Dhawale, S. Sivakumar, S. Aldeyab, **S. M. Javaid Zaidi**, K. Ariga, A. Vinu, (2011), Fabrication and textural characterization of nanoporous carbon electrodes embedded with CuO nanoparticles for supercapacitors, *Science and Technology of Advanced Materials*, 12(4), 044602(**Impact Factor 3.513, Citations: 10**).
32. S. A. Ali, A. J. Hamdan , Ali A. Al-Taq, and **S. M. Javaid Zaidi**, M. T. Saeed (2011), “In search of a functionality for an efficient inhibition of mild steel corrosion both in HCl and H<sub>2</sub>SO<sub>4</sub>” *Corrosion Engineering Science and Technology*, 46(7), 794-806, (**Impact Factor 0.658, Citations: 1**).
33. A. Ali, **S.M. Javaid Zaidi**, Ali Taq (2012), "Cyclopolymers from N,N-Diallyl-N-propargyl-(12- N'-formylamino)-1-dodecylammonium Chloride and Their Use as Inhibitors for Mild Steel Corrosion", *Polymer Bulletin*, 69 (4), 491-507(**Impact Factor 1.532**)
34. P. Kalita, B. Sathyaseelan, A. Mano, **S. M. Javaid Zaidi**, M. A. Chari, A. Vinu (2010) “Synthesis of Superacid-Functionalized Mesoporous Nanocages with Tunable Pore Diameters and Their Application in the Synthesis of Coumarins” *Chemistry- A European Journal*, 16(9), 2843-2851(**Impact Factor 5.925, Citations: 7**).
35. M. Adharvana Chari, G. Karthikeyan, T. Siddulu Naidu, B. Sathyaseelan, and Javaid **S.M. Zaidi**, A. Vinu (2010) “Synthesis of Triazolo Indazolones using 3D Mesoporous Aluminosilicate Catalyst with Nanocage Structure” *Tetrahedron Letters*, 51(19), 2629-2632(**Impact Factor 2.683, Citations: 13**).
36. B. Sathyaseelan, C. Anand, A. Mano, **S. M. Javaid Zaidi**, Ramasamy Jayavel, K. Sivakumar, K. Ariga, Ajayan Vinu (2010) “Ultrafast Microwave Assisted Synthesis of Mesoporous SnO<sub>2</sub> and its Characterization” *Journal of Nanoscience and Nanotechnology*, 10, 8362, 2010(**Impact Factor 1.563, Citations: 2**).
37. B. Sathyaseelan, C. Anand, A. Mano, **S. M. Javaid Zaidi**, R. Chakravarti, R.Jayavel, K. Sivakumar, Salem S. Al-Deyab and A. Vinu (2010) “High Temperature Microwave-assisted Synthesis and the Physicochemical Characterisation of Mesoporous Crystalline Titania”, *International Journal of Nantechnology*, 7, 1067-1076(**Impact Factor 1.335, Citations: 10**).
38. S. Alam, **S. M. Javaid Zaidi**, Salem S. Al-Deyab, A. Vinu (2011) “Iron Oxide Nanoparticles Embedded onto 3D Mesochannels of KIT-6 with Different Pore Diameters and their Excellent Magnetic Properties”, *Chemistry-An Asian Journal*, 6(3), 834-841(**Impact Factor 4.5, Citations: 3**).
39. S. Chauhan, **S. M. Javaid Zaidi**, Salem S. Al-Deyab, A. Vinu\* (2010) “Efficient synthesis of 2,3,4-trisubstituted quinolones via Friedländer annulation with mesoporous cage type aluminosilicate ALKIT-5 catalyst”, *SYNLETT*, 17, 2597-2600 (**Impact Factor 2.710, Citations: 3**).
40. T. S. Naidu, V.V. Balasubraminiam, T. Mori, M. A. Chari, **S. M. Javaid Zaidi**, Salem S. Al-Deyab, B.V. Subba Reddy, A. Vinu, (2010) “Highly Efficient Friedel-Crafts alkylation of indoles and pyrrole catalyzed by mesoporous 3D aluminosilicate catalyst with

- electron deficient olefins”, *SYNLETT*, No. 18, pp 2813-1817. (**Impact Factor 2.710, Citations: 4**).
41. S. Tamil Selvan, Salem S. Aldeyab, **S. M. Javaid Zaidi**, Dakshinamoorthy Arivuoli, Katsuhiko Ariga, Toshiyuki Mori and Ajayan Vinu (2011), Morphological Control of Porous SiC Templated by As-synthesized Form of Mesoporous Silica, *Journal of Nanoscience and Nanotechnology*, Volume 11 ( 8), pp. 6823-6829(7) (**Impact Factor 1.563, Citations: 4**).
  42. S. T. Selvan, Salem S. Aldeyab, **S. M. Javaid Zaidi**, D. Arivuoli, K. Ariga, A. Vinu (2011), Preparation of highly ordered mesoporous SiC with rod shaped morphology and tunable pore diameters using polycarbosilane precursor *J. Mater. Chem.*, 2011, 21, 8792-8799(**Impact Factor 5.97, Citations: 11**).
  43. S. T. Selvan, Salem S. Aldeyab, **S. M. Javaid Zaidi**, D. Arivuoli, K. Ariga, A. Vinu (2011), Synthesis and Morphological Control of Europium doped cadmium sulfide Nanocrystals, *J. Nanosci. Nanotech.*, 11, 7783(**Impact Factor 1.563, Citations: 10**).
  44. **S. M. Javaid Zaidi**, (2010), Advanced Membrane Materials for Fuel Cell applications, *Materials Science Forum*, vol 657, 88-115, 2010 (**Impact Factor 0.88**).
  45. A. Matin, Z. Khan, **S. M. Javaid Zaidi\***, M. C. Boyce (2011), Biofouling in Reverse Osmosis Membranes for Seawater Desalination: Phenomena and Prevention, *Desalination*, 281, 1-16, 2011(**Impact Factor 2.59, Citations: 9**).
  46. A. Matin, Gozde Ozaydin-Ince, Zafarullah Khan, **S. M. Javaid Zaidi\*** (2011) Karen Gleason (2010), “Damien Eggenpiller Random Copolymer Films as Potential Antifouling Coatings for Reverse Osmosis Membrane”, *Desalination and Water Treatment* 34, 100-105, 2011(**Impact Factor 0.79, Citations: 11**).
  47. F. Fadhillah, **S. M. Javaid Zaidi\*** (2011), Zafarullah Khan, Mazen Khaled, P.T. Hammond (2011), “Reverse Osmosis Desalination Membrane Formed From Weak Polyelectrolytes by Spin Assisted Layer By Layer Technique”, *Desalination and Water Treatment*, 34, 44-49, 2011(**Impact Factor 0.79, Citations: 1**).
  48. M. Bello, **S. M. Javaid Zaidi\***, S. U. Rahman, (2009), "Assessment of Methanol Crossover of SPEEK/TPA/MCM 41 and SPEEK/TPA-Y zeolite Composite Membranes for Fuel Cell Applications" *ECS Transactions*, volume 17(1), 477-483 (**Impact Factor 2.59**).
  49. M. Bello, **S.M. Javaid Zaidi\***, S. U. Rahman, (2008) “Proton and methanol transport behavior of SPEEK/TPA/MCM-41 composite membranes for fuel cell application”, *Journal of Membrane Science*, 322, 218-224 (**Impact Factor 4.314, Citations: 17**).
  50. **S. M. Javaid Zaidi\*** (2010), "Removal of Acid Gases from Natural Gas Stream by Membrane Technology", *Advances in Gas Processing*, 2, 139-144 (**Impact Factor 1.389**).
  51. **S. M. Javaid Zaidi\*** (2010) "Overview of Conversion of greenhouse gas Carbon dioxide to Hydrocarbons", *Advances in Gas Processing*, 2 115-120 (**Impact Factor 1.389**).
  52. M. Bello, N. M. Faqir, **S. M. Javaid Zaidi\*** (2010), "Multi-objective Function Optimization for PEM Fuel Cell Systems", *ECS Transactions*, 26(1), pp 77-88 (**Impact Factor 2.59**).
  53. **S. M. Javaid Zaidi\***, Md. Abdur Rauf (2010), “Fuel Cell Testing and Mechanical Characterization of Composite SPEEK membranes using heteropolyacid supported on Y-zeolite” *Canadian Journal on Chemical Engineering & Technology* (in press) (Impact Factor pending).

54. **S. M. Javaid Zaidi\***, Md. Abdur Rauf , S. U. Rahman , Shakeel Ahmed (2010) , Fuel Cell Testing and Mechanical Properties of Composite TPA/MCM41/SPEEK Membranes, *Electrochimica Acta* (accepted in December 2012) (**Impact Factor 3.832**).
55. M. Bello, S. U. Rahman, **S. M. Javaid Zaidi\*** (2007), "Evaluation of Methanol Crossover through SPEEK/TPA/Y-zeolite Composite Membranes by Electrochemical Method", *J. Electrochemical Society, ECS Transactions, Volume 5(1)*, 69-78(**Impact Factor 2.59**).
56. **S. M. Javaid Zaidi\***, S. U. Rahman, H. H. Redawi (2007), R & D Activities of Fuel Cell Research at KFUPM", *Desalination*, 209, 319-327(**Impact Factor 2.59, Citations: 6**).
57. M. I. Ahmed, S. U. Rahman, **S. M. Javaid Zaidi\*** (2006), "Novel SPEEK/Heteropolyacids loaded Y-zeolite Composite Membranes for Medium Temperature Fuel cell Applications", *Desalination*, volume 193, 387 - 397(**Impact Factor 2.59, Citations: 42**).
58. M. I. Ahmed, S. Ahmed, S. U. Rahman, **S. M. Javaid Zaidi\*** (2006). Conductivity and Characterization of Heteropolyacids loaded Y Zeolite: A Novel Proton conducting material, *Microporous and Mesoporous Materials*, 91, 296-304 (**Impact Factor 3.285, Citations: 10**).
59. M. I. Ahmed, **S. M. Javaid Zaidi\*** (2006). "Novel SPEEK/Heteropolyacids loaded MCM-41 Composite Membranes for Fuel Cell Applications, *Journal of Membrane Science*, 279,5 48-557(**Impact Factor 4.314, Citations: 29**).
60. M. I. Ahmed, S. Ahmed, **S. M. Javaid Zaidi\*** (2006), " Proton Conducting Composites of Heteropolyacids loaded onto MCM-41", *Journal of Power Sources*, 157, 35-44.
61. **S. M. Javaid Zaidi\***, S. U. Rahman, H.H. Redawi (2006), "R & D Activities of Fuel Cell Research at KFUPM", *Desalination*, 332-340 (**Impact Factor 2.59, Citations: 6**).
62. **S. M. Javaid Zaidi\*** (2005), "Preparation and Characterization of composite membranes using blends of SPEEK/PBI with boron phosphate", *Electrochimica Acta*, 50,4771-77 (**Impact Factor 3.832, Citations: 47**).
63. **S. M. Javaid Zaidi\***, S. U. Rahman (2005), "Perfluorinated ionomer-boron phosphate composite membranes for DMFC Applications", *Journal of Electrochemical Society*, vol. 152, no. 8.A1590-A1594 (**Impact Factor 2.59, Citations: 8**).
64. **S. M. Javaid Zaidi\*** (2003), "Polymer sulfonation: a versatile route to prepare proton-conducting membrane material for advanced technologies", *Arabian Journal for Science and Engineering*, vol. 28:2B,183-94 (**Impact Factor 0.92, Citations: 21**).
65. S. D. Mikhailenko, **S. M. Javaid Zaidi** , S. Kaliaguine (2001), Sulfonated Poly ether-ether ketone based composite polymer electrolyte membranes, *Catalysis Today*, vol. 67, no.1-3, 225-236 (**Impact Factor 3.584, Citations: 122**).
66. N. S. Abo-Ghander, S. U. Rahman, and **S. M. Javaid Zaidi\***, A modified electrochemical cell to recover heavy metals from wastewater, *Purtogese Electrochimica acta* (in press).
67. A. Nafees, S.U. Rahman, **S.M. Javaid Zaidi**, "Electrochemical Removal of Carbon Monoxide from Hydrogen Using Ni Catalyst", *Electrochimica Acta* (accepted in December 2012) (**Impact Factor 3.832**).
68. **S. M. Javaid Zaidi**, S. D. Mikhailenko, M. D. Guiver, S. Kaliaguine (2000), `Proton Conducting Composite Membranes from Poly (ether ether ketone) and heteropolyacids for fuel cell applications, *J. Membrane Science*, 173, 17-34 (**Impact Factor 4.314, Citations: 671**).

69. **S. M. Javaid Zaidi**, S. D. Mikhailenko, S. Kaliaguine (2000), 'Electrical Properties of Sulfonated Polyether ether ketone/Polyetherimide blend membranes doped with inorganic acids', *J. Polymer Sci., Part B: Polymer Physics*, 38, 1386-1395 (**Impact Factor 1.53, Citations: 39**).
70. **S. M. Javaid Zaidi**, S. F. Chen, S. D. Mikhailenko and S. Kaliaguine (2000). 'Proton Conducting Membranes based on Polyoxadiazoles', *J. New Materials for Electrochemical Systems*, 3, 916-925 (**Impact Factor 0.92, Citations: 36**).
71. C. Danuma, **S. M. Javaid Zaidi\***, G. Xu, N. Voyer, S. Giasson, and S. Kaliaguine(2000). 'Siliceous Mesoporous Molecular Sieves derived from Crown ether Surfactants', *Microporous and Mesoporous Materials*, 37, 21-32 (**Impact Factor 3.285, Citations: 10**).
72. M. H. Zahedi, **S. M. Javaid Zaidi**, and S. Kaliaguine (1999), Acidic properties of titanium aluminophosphate molecular sieves, *Microporous and Mesoporous Materials*, 32, 251-255(**Impact Factor 3.285, Citations: 30**).
73. M. H. Zahedi, **S. M. Javaid Zaidi**, and S. Kaliaguine (2000), Comparative study of vanadium aluminophosphate molecular sieves VAPO-5,-11,-17 and-31, *Appl. Catal. Part A General*, 196, 9-24 (**Impact Factor 3.96, Citations: 23**).
74. S. D. Mikhailenko, **S. M. Javaid Zaidi\***, E. Ghali, S. Kaliaguine (1999). 'The influence of aluminium substitution on the proton conductivity of BPO4', *J. New Mater. Electrochem. Systems*, vol. 2, 161-169 ((**Impact Factor 0.53, Citations: 5**)).
75. S. D. Mikhailenko, **S. M. Javaid Zaidi**, and S. Kaliaguine (1998), 'Electrical conductivity of boron orthophosphate in presence of water', *J.C.S. Faraday Trans.*, 94(11), 1613-1618((**Impact Factor 3.58, Citations: 15**)).
76. D. Tron On, **S. M. Javaid Zaidi**, S.Kaliaguine (1998). 'Stability of mesoporous aluminosilicate MCM-41 under vapor treatment, acidic and basic conditions, *Microporous and Mesoporous Materials*, 22, 211-224(**Impact Factor 3.285, Citations: 49**)).
77. A. A. Shaikh and **S. M. Javaid Zaidi** (1998). Kinetics of catalytic oxidation of aqueous sodium sulfite, *React. Kinet. Catal. Lett.*, 64(2), 343-349 (**Impact Factor 1.878, Citations: 8**)).
78. M. A. Ali, M. M. Abdillahi and **S. M. Javaid Zaidi** (1998). Thermal Analysis of crude oils, comparison with Simdist and TBP data, *J. Thermal Analysis*, 51, 037-319 (**Impact Factor 1.604, Citations: 8**)).
79. C. Danuma, **S. M. Javaid Zaidi**, N. Voyer, S. Giasson, and S. Kaliaguine (1998). 'Templating effects in the synthesis of MCM-41/48 phases', *Stud. Surf. Sci. & Cat.*, vol.117,281 (**Impact Factor 1.66, Citations: 8**)).
80. J. A. Anabtawi, S. A. Ali, M. A. B. Siddiqui and **S. M. Javaid Zaidi** (1995). Factors influencing the performance of naphtha hydrodesulfurization catalysts, *Stud. Surf. Sci. & Cat.*, 100, 235-40. (**Impact Factor 1.66, Citations: 2**)).
81. A. A. Shaikh, and **S. M. Javaid Zaidi** (1995) Review of laboratory contactors for studying kinetics of gas-liquid reactions, *King Saud Univ. J. Eng. Sciences*, vol 7, pp 151-169 (**Impact Factor 0.92, Citations: 5**)).
82. M. Atiquallah, A. K. Rahman and **S. M. Javaid Zaidi** (1993). Effect of kinetics and transport parameters on accelerated migration of additives from plastic sheet, *Poly. Eng. and Sci.*, 33, pp 1644-52 (**Impact Factor 1.3, Cations: 1**)).

83. A. A. Shaikh and **S. M. Javaid Zaidi** (1993). Kinetics of oxygen absorption in aqueous sodium dithionite solutions, *J. Chem. Technol. & Biotechnol.*, vol 56, pp 139-145. (**Impact Factor 2.168, Citations: 11**)
84. A. A. Shaikh, **S. M. Javaid Zaidi**. Review of laboratory contactors for studying kinetics of gas-liquid reactions. *King Saud Univ. J. Eng. Sciences*, **1995**, 7, 151-169 (**Impact Factor 0.92, Citations: 5**).

*International Conferences Publications/Proceedings/presentations*

85. **S. M. Javaid Zaidi\***, F. Fadillah, Z.U. Khan, "Development and Testing of New class of Membranes for RO Desalination", Proc: 10<sup>th</sup> Water Desalination Conference in the Arab Countries (ARWADEX-12), April 8-11, 2012, Riyadh, Saudi Arabia.
86. Amir-Al-Ahmed, Abdullah S. Sultan, **S.M. Javaid Zaidi\***, Reduced Viscosity, Rheology and Morphological Properties of Sulfonated Poly (ether ether ketone) and poetherimide blends, Proc: International Conference on Fronteriors in Polymers and Advanced Materials, May 22-26 2011, Pretoria, South Africa.
87. Amir-Al-Ahmed, Abdullah S. Sultan, **S. M. Javaid Zaidi\***, Viscosity, Rheology and Morphological Properties of Sulfonated Poly (ether ether ketone): effects of solvent and temperature, 11th Annual UNESCO/IUPAC, Conference on Functional Polymeric Materials & Composites, 26 29 April 2011, Stellenbosch, South Africa.
88. A. Matin, Z. Khan, **S. M. Javaid Zaidi\***, G. Ozaydin-Ince, K. Gleason, M. Boyce, Random Copolymer Films as Potential Antifouling Coatings on Reverse Osmosis Membranes, International Membrane Science & Technology Conference (IMSTEC 10), November 22-26, 2010, Sydney, Australia.
89. Farid Fadhillah a, **S. M. Javaid. Zaidi\***, Zafarullah Khan, M.M. Khaled, Reverse Osmosis Desalination Membrane Formed From Weak Polyelectrolytes by Spin Assisted Layer By Layer Technique, International Membrane Science & Technology Conference (IMSTEC 10), November 22-26, 2010, Sydney, Australia.
90. **S. M. Javaid Zaidi\***, " Overview of Desalination Research at KFUPM", 1st International conference on Desalination and Environment: A Water Summit, Oct 29- Nov. 1, 2011, Abu Dhabi, UAE.
91. F. Fadhillah, **S. M. Javaid Zaidi\***, Z.U. khan, Bi-Polar Polyelectrolyte Thin Films Prepared by Spin Assisted Layer by Layer Assembly (SA-LbL) for Potential Water Desalting Applications?, 1st International conference on Desalination and Environment: A Water Summit, Oct 29- Nov. 1, 2011, Abu Dhabi, UAE.
92. **S. M. Javaid Zaidi\***, Development of composite membranes for fuel cell applications, The 8th International Conference on Membrane Science and Technology (MST), November 29- December 1, 2010, ITB Bandung, Indonesia
93. **S. M. Javaid Zaidi\* (2010)**, "Overview of Fuel Cell Research at KFUPM", 7<sup>th</sup> World Renewable Energy Congress and Exhibition, 25-30 September 2010, Abu Dhabi, UAE.
94. Amir Al-Ahmed, S. Hossain, M. Bello, S.U. Rahman, **S.M. J. Zaidi\***, "Hydrogen Highway: An Overview", IEEE International Energy Conference, December 2010, Manama, Bahrain.
95. Hossain S.S., S.U. Rahman, **S. M. Javaid Zaidi\*** (2010), "Solid-state Conversion of Carbon dioxide to Hydrocarbons by Electro-chemical Methods" The 8th International Conference and Exhibition on Chemistry in Industry, October 18 - 20, 2010

96. **S. M. Javaid Zaidi\***, "Proton Conductivity Study of the Family of the Zeolites Molecular Sieves for PEM Fuel Cell Applications", Proc: International Fuel Cell Conference (European Fuel Cell Forum), June 28-July 2, 2009, Lucerne, Switzerland.
97. **S. M. Javaid Zaidi\***, "Progress in Polymer Electrolyte Membrane Research for Fuel Cell Applications", Proc: International Conference on Membrane Science & Technology (MST 2009), May 13-15, 2009, Kuala Lumpur, Malaysia. (**Keynote Lecture**)
98. **S. M. Javaid Zaidi\***, "Progress and Novel strategies for Membrane Development for PEM Fuel Cell", Proc: International Symposium and Exhibition on Fuel Cell Technologies, November 11-13, 2009, Mumbai, India. (**Plenary Speaker**).
99. Inamuddin, **S. M. Javaid Zaidi\*** and S.U. Rahman, Computational Fluid Dynamic Study for the Effects of the Cathode Catalyst layer Parameters on 3D-PEM Fuel Cell Performance, International Fuel Cell Conference and Exhibition, Fuel Cell Seminar, November 16-19, 2009, Palm Springs, California, USA.
100. **S. M. Javaid Zaidi\***, "Novel SPEEK-Based Composite Membranes for Direct Methanol Fuel Cell Application", Proc: International Fuel Cell Conference (European Fuel Cell Forum), June 28-July 2, 2009, Lucerne, Switzerland.
101. **S. M. Javaid Zaidi\***, A. Rauf, "Development and Testing of Novel Materials for Fuel Cell Applications" Proc. World Renewable Energy Congress, July 19-25, 2008, Glasgow, Scotland.
102. **S. M. Javaid Zaidi\***, "Characterization of Polymeric membrane Materials for Fuel Cell Applications", International Symposium on High-Tech Polymeric Materials, October 26-31, 2008, Beijing, China (**Keynote Speaker**)
103. **S. M. Javaid Zaidi\***, "Proton conducting polymer composites as membrane materials for PEM fuel cells applications, International Symposium on High Tech polymeric materials", May 14-17, 2006, Beijing, China. (**Keynote Lecture**)
104. **S. M. Javaid Zaidi\***, S.U. Rahman, M. Bello, Evaluation of methanol cross-over through SPEEK/TPA/zeolite composite membranes by Electrochemical Method, Fuel Cell Seminar, November 13-17, 2006, Honolulu, USA.
105. M. Bello, S. U. Rahman , and **S. M. Javaid Zaidi\***, "Comparative Studies on Measurement Techniques for Methanol Crossover through Polymer Electrolyte Membranes of DMFC" Chemindix 2007, March 2007, Bahrain.
106. S. U. Rahman, **S. M. Javaid Zaidi\***, A. Nafees, "Removal of CO from hydrogen by selective electrooxidation", Poster Presentation, Gordon Research Conference on Fuel Cells, Bryant University, RI, USA, 17-22 July 2005.
107. M.I. Ahmed, **S. M. Javaid Zaidi\***, S.U. Rahman, "Proton conductivity studies of novel composite membranes for medium temperature fuel cells", Proc: International conference on membrane and membrane processes (ICOM 2005), August 21-26, 2005, Soul, Korea.
108. **S. M. Javaid Zaidi\***, "Impact of membrane materials on the performance of fuel cells", Proc: International Mechanical Engineering Conference, IMEC-2004, December 5-8, 2004, p598-615, Kuwait.
109. M.I. Ahmed, A.Nafees, **S. M. Javaid Zaidi\***, S.U. Rahman, Fuel Cells: Trends and directions for Cleaner Energy Production", Proc: International Mechanical Engineering Conference, IMEC-2004, December 5-8, 2004, p86-102, Kuwait.

110. **S. M. Javaid Zaidi\***, M.I. Ahmed, S.U. Rahman, "Recent Progress in Composite Membranes for Direct Methanol Fuel Cell Applications", Proc: 6<sup>th</sup> International Conference on Chemistry in Industry, September 27-29, 2004, Bahrain.
111. Ahmed Nafees, S.U. Rahman, **S. M. Javaid Zaidi\***, " Approaches to solve problem of co poisoning in hydrocarbon based fuel cell system", Proc: 6<sup>th</sup> International Conference on Chemistry in Industry, September 27-29, 2004, Bahrain.
112. S.U. Rahman, A. Nafees, **S. M. Javaid Zaidi\***, "Fuel Options for Fuel Cell Systems", Proc: 6<sup>th</sup> International Conference on Chemistry in Industry, September 27-29, 2004, Bahrain.
113. S. U. Rahman, J.W. Weidner, **S. M. Javaid Zaidi\*** and N. A. Al-Baghli, A. Nafees, "Approaches to hydrocarbon processing for automotive and stationary fuel cell systems", Proc: Petrotech 2003, Sept 30-Oct 1, 2003, Bahrain.
114. **S. M. Javaid Zaidi\***, "Technology of Hydrocarbon-based Fuel Cell", Proc: Fourth National Energy Congress, World Energy Council sponsored Conference: May 10-12, 2003, Tehran, Iran, page 167-179.
115. **S. M. Javaid Zaidi\***, M.I. Ahmed, S.U. Rahman, "Proton conductivity studies of novel composite membranes for medium temperature fuel cells", Proc: International conference on membrane and membrane processes (ICOM 2005), August 21-26, 2005, Seoul, Korea.
116. **S. M. Javaid Zaidi\***, "Impact of membrane materials on the performance of fuel cells", Proc: International Mechanical Engineering Conference, IMEC-2004, December 5-8, 2004, p598-615.
117. **S. M. Javaid Zaidi\***, "Technology of Hydrocarbon-based Fuel Cell", Proc: World Energy Council sponsored Conference: 4th National Energy Conference, May 10-12, 2003, Tehran, Iran.
118. **S. M. Javaid Zaidi\***, Fuel Cells Development for Automobiles Applications, ASME Conference on Engineering Systems Design and Analysis, July 8-11, 2002, Istanbul, Turkey .
119. **S. M. Javaid Zaidi\***, Technology of Direct Methanol Fuel Cell: Progress and Future Prospects, 6<sup>th</sup> Saudi Engineering Conference, October 22-23, 2002, KFUPM, Dhahran.
120. M.I. Ahmed, A.Nafees, **S. M. Javaid Zaidi\***, S.U. Rahman, Fuel Cells: Trends and directions for Cleaner Energy Production", Proc: International Mechanical Engineering Conference, IMEC-2004, December 5-8, 2004, p88-102.
121. A. Nafees, M.I. Ahmed, **S. M. Javaid Zaidi\***, S.U. Rahman, "The promise of fuel cell powered vehicles", Proc: International Mechanical Engineering Conference, IMEC-2004, December 5-8, 2004, p88-102.
122. **S. M. Javaid Zaidi\***, M.I. Ahmed, S.Ahmed, "Characterization and Proton conductivity measurements of solid USY-zeolite loaded with Heteropolyacids", Proc: International conference on Electrochemical Power Systems, December 20-21, Hyderabad, India.
123. **S. M. Javaid Zaidi\***, M.I. Ahmed, S.U. Rahman, "Recent Progress in Composite Membranes for Direct Methanol Fuel Cell Applications", Proc: 6<sup>th</sup> International Conference on Chemistry in Industry, September 27-29, 2004.
124. **S. M. Javaid Zaidi\***, M.I. Ahmed, S.U. Rahman, " Approaches to solve problem of co poisoning in hydrocarbon based fuel cell system", Proc: 6<sup>th</sup> International Conference on Chemistry in Industry, September 27-29, 2004

125. **S. M. Javaid Zaidi\***, M.I. Ahmed, S.U. Rahman, "Fuel Options for Fuel Cell Systems", Proc: 6<sup>th</sup> International Conference on Chemistry in Industry, September 227-29, 2004.
126. S. U. Rahman, **S. M. Javaid Zaidi\*** and N. A. Al-Baghli, "Approaches to hydrocarbon processing for automotive and stationary fuel cell systems", Proc: Petrotech 2003, Sept 30-Oct 1, 2003, Bahrain.
127. S. U. Rahman, **S. M. Javaid Zaidi\***, "Status and promise of methanol fuel cell technology", Proceedings, Petrotech 2003, Sept 30-Oct 1, 2003, Bahrain.
128. **S. M. Javaid Zaidi\*** and S. U. Rahman, "Technological advancements in membrane development for PEM fuel cells" Proc: Scientific Advances in Fuel Cell Systems, Amsterdam, Netherlands, 24-26 September 2002.
129. A.S. Sultan and **S. M. Javaid Zaidi\***, Pilot Plants in Refining and Petrochemicals, 5<sup>th</sup> International Conference on Chemistry and Industry, October 14-16, 2002, Bahrain.
130. **S. M. Javaid Zaidi\***, S.D.Mikhailenko, S. Kaliaguine (2001), Development of composite membranes for DMFC, Proc: 4th International Symposium on New Materials for Electrochemical systems, July 8-11, Montreal, Canada,.
131. **S. M. Javaid Zaidi\***, S.F.Chen, S.D.Mikhailenko and S. Kaliaguine (1999), Proton Conducting membranes based on Polyoxadiazoles, Proc: 3<sup>rd</sup> International Symposium on New Materials for Electrochemical systems, Montreal, Canada, 4-6 July.
132. **S. M. Javaid Zaidi\***, S.D.Mikhailenko and S. Kaliaguine (1998), 'Solid polymer composite electrolytes for PMFC', Proc: 33<sup>rd</sup> Intersociety Engineering Conference on Energy Conversion, Colorado Springs, CO, August 2-6.
133. **S. M. Javaid Zaidi\*** (1995). Impact of gasoline reformulation on the refining Industry, Proc. 4th Saudi Eng. Conf., November 5-8, vol V, pp 303-308, K. A.A. University, Jeddah, Saudi Arabia.
134. **S. M. Javaid Zaidi\*** (1995). Role of Technology in meeting environmental regulations in the petroleum refining Industry, Proc. First Int. conf. on Environmental Issues in Petroleum and Petrochemical Industries, December 4-6, Organized by Air & Waste Management Association (Saudi Arabian section) and Bahrain society of Engineers, pp 553-563, Manama, Bahrain.
135. **S. M. Javaid Zaidi\*** and A.A. Shaikh (1994). Kinetics and mass transfer of gas-liquid and gas-liquid-solid reactions in a novel contactor, Proc. 2nd Int. Conf. on Chemistry in Industry, Oct. 24-26, pp 480-488, Manama, Bahrain.
136. Yeboah, Y.D., S.A. Ali, **S. M. Javaid Zaidi\*** and M.A.B. Siddiqui(1994). Comparison of the activity of steam reformer catalysts, Proc. 2nd Int. Conf. on Chemistry in Industry, Oct. 24-26, pp 1075-1083, Manama, Bahrain.
137. **S. M. Javaid Zaidi\***, A. S. Sultan, I.A. Hussein (2007) "Solution Viscosity Behavior of polymeric materials used in Fuel Cell Application: Sulfonated Poly(ether ether ketone), Polyetherimide and Polysulfone", European Polymer Conference, EUPO-227, May 27-June 1, 2007, Gargnano, Italy
138. **S. M. Javaid Zaidi\***, A.S. Sultan, I.A. Hussein (2007), Rheological Properties of Aqueous Solutions of Sulfonated Poly(ether ether ketone), Polyetherimide and Polysulfone, ", European Polymer Conference, EUPO-227, May 27-June 1, 2007, Gargnano, Italy



139. **S. M. Javaid Zaidi\***, Abdur-Rauf (2007), Recent advances in Polymer Membranes for PEMFC Applications, ", European Polymer Conference, EUPO-227, May 27-June 1, 2007, Gargnano, Italy.
140. **S. M. Javaid Zaidi\***, S.U. Rahman, Overview of Fuel Cell Research at KFUPM", Middle East Conference on Fuel Cell and Hydrogen Economy, December 6-7, 2005, Duba, UAE (**Invited Presentation**)
141. **S. M. Javaid Zaidi\***, "Proton conducting polymer composites as membrane materials for PEM fuel cells applications, CNRS, University of Montpellier, France, July 13, 2006 (**Invited Presentation**)
142. A. Nafees, S. Rahman and **S. M. Javaid Zaidi\***, "Carbon Monoxide Removal from Reformate on Nickel Catalyst for PEM Fuel Cell", 208th Meeting of The Electrochemical Society, Los Angeles, California, October 16 - 21, 2005.
143. **S. M. Javaid Zaidi\***, S.U. Rahman, "Perfluorinated ionomer-boron phosphate composite membranes for PEM Fuel Cell Applications", 205<sup>th</sup> Meeting of the Electrochemical Society, San Antonio, May 9-13, 2004
144. **S.M.J. Zaidi\***, S.U. Rahman, Halim H. Redhwi, :R & D Activities of Fuel Cell Research at KFUPM", Proc: 8<sup>th</sup> Arab International Solar Energy Conference & Regional World Renewable Energy Congress, 8-10 March, 2004, Bahrain.
145. **S. M. Javaid Zaidi\***, S. U. Rahman, Nabeel Abo-Ghander (2004), "An Integrated Electrolytic Electrodialytic Method for Removal of Heavy metal from wastewater, 16th International Congress of Chemical and Process Engineering CHISA 2004, Prague,
146. **S. M. Javaid Zaidi\***, S.U. Rahman, Nabeel Abo-Ghander (2004), "Metal Ions from Wastewater using a Novel Integrated Electrolytic Electrodialytic Process"*Electrochemistry Society Meeting, Greece, August 2004*
147. **S. M. Javaid Zaidi\***, "A Systematic Study of Conductivity of Zeolites, *Proc: 2nd European Polymer Electrolyte Fuel Cell Forum*, June 30-4 July, 2003, Lucerne, Switzerland.
148. **S. M. Javaid Zaidi\***, S. D. Mikhailenko, M. D. Guiver, S. Kaliaguine (2000), Proton conducting composite membranes for direct methanol fuel cell, 4<sup>th</sup> International conference on Catalysis in membrane reactors, July 3-5, Zaragoza, Spain.
149. S. D. Mikhailenko, **S. M. Javaid Zaidi\***, and S. Kaliaguine (1998). 'On the possibility to use boron phosphate as solid electrolyte', 15<sup>th</sup> Canadian Symposium on Catalysis, May 17-20, Quebec City, Canada.
150. Danuma, C; **S. M. Javaid Zaidi\***, N.Voyer, S.Giasson, and S. Kaliaguine (1998). 'Templating effects in the synthesis of MCM-41/48 phases', 15<sup>th</sup> Canadian Catalysis Symposium, May 17-20, Quebec City, Canada.
151. Danuma, C; **S. M. Javaid Zaidi\***, N.Voyer, S.Giasson, and S. Kaliaguine (1998). 'Templating effects in the synthesis of MCM-41/48 phases', 1st International Symposium on mesoporous Molecular Sieves, July10-12 Baltimore, USA.
152. Anabtawi, J.A., M.M. Abu Shbak, A.G. Maadhah and **S. M. Javaid Zaidi\*** (1996), Recent Technology development in conversion of LPG to Aromatics, Proc. 2<sup>nd</sup> Symposium on Technologies, Economics, & Investment Opportunities in Petrochemical Industries in the Kingdom of Saudi Arabia, October 15-17, Riyadh, Saudi Arabia.
153. Anabtawi, J.A., S.A. Ali, M.A.B. Siddiqui and **S. M. Javaid Zaidi\*** (1996). Evaluation of naphtha reforming catalysts by accelerated deactivation tests, Fifth World Congress of Chem. Eng., July 14-16, San Diego, Calif., U.S.A.

154. Anabtawi, J.A., M.M. Abu Shbak, A.G. Maadhah and **S. M. Javaid Zaidi\*** (1995), Recent Technology development in conversion of LPG to Aromatics, Fifth Annual Workshop on Catalysis in Petroleum Refining and Petrochemicals, Dec.2-3, Research Institute, King Fahd University of Petroleum and Minerals, Dhahran, Saudi Arabia.
155. Anabtawi, J.A., S.A.Ali, M.A.B. Siddiqui and **S. M. Javaid Zaidi\*** (1995). Factors Influencing the performance of naphtha HDS catalysts, 2nd Int. Conf. on Catalysis in Petroleum Refining and Petrochemical Industries, April 22-26, Kuwait.
156. Anabtawi, J.A., S.A.Ali, M.A.B. Siddiqui and **S. M. Javaid Zaidi\*** (1994). Pilot plant evaluation of naphtha reforming catalysts, 13th Canadian Symposium on catalysis, May 24-27, Sarnia, Ontario, Canada.
157. **S. M. Javaid Zaidi\*** (1994). The Phenomenon of Migration of additives from plastic into foodstuffs, "POLYMER 94", Indian Petrochem. Corp., Feb. 1-3, Baroda, India.
158. Anabtawi, J.A., S.A.Ali, M.A.B. Siddiqui and **S. M. Javaid Zaidi\*** (1993). Catalyst selection for naphtha desulfurization, 3rd Saudi-Japanese Symposium on Petroleum Refining and Petrochemicals, Oct.31-Nov.1, Research Institute, King Fahd University of Petroleum and Minerals, Dhahran, Saudi Arabia.
159. Yeboah, Y.D., S.A.Ali, **S. M. Javaid Zaidi\***, and M.A.B. Siddiqui(1993). Activity of commercial steam reformer catalysts, 3rd Saudi-Japanese Symposium on Petroleum Refining and Petrochemicals, Oct.31-Nov.1, Research Institute, King Fahd University of Petroleum and Minerals, Dhahran, Saudi Arabia.
160. Yeboah, Y.D. and **S. M. Javaid Zaidi\*** (1993). Recent trends in LTS catalysts, Preprints First European Congress on catalysis, Sep. 12-17, Montpellier, France.
161. Shaikh, A.A. and **S. M. Javaid Zaidi\*** (1992). Kinetics of natural gas treating reactions: Review experimental methods, Symposium on Production and Processing of Natural Gas, Feb.29-March 2, King Saud University, Riyadh, Saudi Arabia.
162. **S. M. Javaid Zaidi\***, "Development of Composite Membranes for Fuel Cell" Invited Lecture, GKSS Research Center, September 2001, Hamburg, Germany.
163. **S. M. Javaid Zaidi\***"Development of Polymer Electrolyte membrane for DMFC", Presentation at H Power Enterprise of Canada, Montreal, June 2000.

### **Technical Reports**

164. **S. M. Javaid Zaidi**, I.A. Hussein Synthesis, Thermal, and Rheological Characterization of Composite Membranes for Fuel Cell Applications, KFUPM Fast Track, Principal Investigator, Budget SR75, 2005.
165. **S. M. Javaid Zaidi**, S.U. Rahman, Development of New Polymer Composite Membranes for Direct Methanol Fuel Cell, Project Manager KFUPM-ARI Grant, Budget SR 75,000, December 2003.

166. I.A. Hussein, B.F. Abu Sharkh, **147. S. M. Javaid Zaidi**, E.Y Osei-Twum, “Investigation of the Influence of Molecular Structure on Molecular Characteristics of metallocene LLDPE by NMR, Light Scattering, DSC, and MD Simulation Techniques”, Principal Investigator, KACST, Final report September, 2006, Budget SR 867,000.
167. Multi- Scale Design of Next Generation Reverse Osmosis (RO) Membranes for Seawater Desalination, KFUPM-MIT Research Collaboration, Budget SAR 2.0 Million, September 2008-September 2010. *Annual Progress Report*, June 2009.
168. Performnace Evaluation and Testing of New membranes and electro-catalyst for fuel cells, center of Research Excellence in Renewable Energy, Budget SAR 2,751,500, October 2008 – May2012, *Three progress reports*.
169. Membrane and Cell Development for the Electrochemical Cell conversion of CO<sub>2</sub> to Hydrocarbons, center of Research Excellence in Renewable Energy, Budget SAR 2,810,250, October 2008 – May2012 *Three progress reports*.
170. Novel composite membranes and carbon nanotubes based electrocatalyst for PEM fuel cells, National Science, Technology and Innovation Plan and KACST Collaborative Grant, September, 2009- Septembere 2011, Budget SAR 2.0 million (*one progress report*)
171. Development of New Generation Reverse Osmosis (RO) Membranes for Seawater Desalination, National Science, Technology and Innovation Plan and KACST Collaborative Grant, September, 2009- Septembere 2011, Budget SAR 2.0 million.(*one progress report*)
172. Electrochemical conversion of carbon-dioxide to hydrocarbons using solid electrolyte, National Science, Technology and Innovation Plan and KACST Collaborative Grant, September, 2009- Septembere 2011, Budget SAR 2.0 Million.(*one progress report*)
173. Separation of Binary Organic Mixtures using Novel Composite Polymeric Membranes by Pervaporation, KFUPM, Budget SR 425,000, *Two progress reports*.
174. Development of New Polymer Composite Membranes for Direct Methanol Fuel Cell, Project Manager KFUPM-ARI Grant, Budget SR 75,000, *Progress Report*, March ,2003.
175. Development of New Polymer Composite Membranes for Direct Methanol Fuel Cell, Project Manager KFUPM-ARI Grant, Budget SR 75,000, *Progress Report*, July ,2003.
176. Development of New Polymer Composite Membranes for Direct Methanol Fuel Cell, Project Manager KFUPM-ARI Grant, Budget SR 75,000, *Progress Report*, October ,2003.
177. Thermal, and Rheological Characterization of Composite Membranes for Fuel Cell Applications, KFUPM Fast Track, Principal Investigator, Budget SR75, *Two progress reports*.
178. Development of Highly Conductive Composite Membranes for Medium Temperature PEM Fuel Cell. KFUPM, Principal Investigator Final report, Budget SR 638,700, *Five progress reports*.

179. Influence of Molecular Parameters on the Rheology and Miscibility of molten linear low-density polyethylene (LLDPE) in low-density polyethylene (LDPE) and high-density polyethylene (HDPE). KFUPM, Principal Investigator, Budget SR 1.28 million, *five progress reports* April 2001- April 2004.

## **Reviewer of the Journals and Funding agencies**

*Reviewer to various International, Regional and local organizations including:*

- ♦ National Science Foundation (NSF), USA; King Abdul Aziz City for Science and Technology (KACST); Arab Science & Technology Foundation (ASTF), Sharjah, UAE;, Emirates Foundation, Imam Mohammed University, King Saud University, KSA, KFUPM-DSR, King Saud University.

*Reviewer for various International and Regional journals including:*

- Journal of Membrane Science; Electrochimica Acta; Journal of New Materials for Electrochemical Systems; Journal of Electrochemical Society; e-Polymers; Arabian Journal for Science & Engineering; Journal of Science and Engineering (King Saud University journal ) University of Jordan Scientific Journal; Arabian Gulf Journal (Bahrain); Sultan Qaboos University Journal. Int. Journal of Hydrogen Energy, 6<sup>th</sup> Saudi Engineering Conference; Petrotec 2003, ChemIndex, Polymer Bulletin, Desalination,

## **Professional Affiliation**

Member of the following professional societies

- American Institute of Chemical Engineers
- American Chemical Society
- Canadian Catalysts Society
- Electrochemical Society
- Saudi Council of Engineers

## **International Scientific Committee Member**

- Scientific Committee of 1<sup>st</sup> Saudi Renewable Energy Conference, KFUPM, Dhahran, Saudi Arabia, February 2011.
- First International workshop for fuel cells, 2009.
- 4<sup>th</sup> Saudi Engineering Conference, 2005
- International Scientific Committee, 7<sup>th</sup> International Conference on Membrane Science & Technology, Malaysia, May 2009.
- 8<sup>th</sup> International Conference on Membrane Science & Technology, Indonesia, Nov 2011.
- International Conference on Chemistry in Industry, 2007.
- Saudi-Japanese Symposium, King Fahd University of Petroleum & Minerals, Dhahran, Saudi Arabia, 2007, 2008.

## **Academics**

**Chairman of Chemical Engineering Integrated Design Course (Capstone Design) for the last five years (2007-2012).**

### **COURSES TAUGHT**

1. CHE 204: Transport Phenomenon I(Fluid Mechanics)
2. CHE 300: Transport Phenomenon II( Heat Transfer)
3. CHE 304: Transport Phenomenon III( Mass Transfer)
4. CHE 306: Stagewise Operations
5. CHE 402: Kinetics and Reactor Design
6. CHE 425: Engineering Economics and Design Principles
7. CHE 430: Separation Processes/Membrane Technology
8. CHE 440: Catalysis and Catalytic Processes
9. CHE 495: Integrated Design Course (capstone design)
10. CHE 580: Heterogeneous Catalysis
11. CHE 530: Advanced Reactor Design
12. CHE 325: Chemical Eng. Computing Laboratory
13. CHE 309: Chemical Eng. Laboratory I

### **SHORT COURSES OFFERED TO THE LOCAL INDUSTRY**

1. *Fundamentals of Catalysis (four times)*  
May 12-17, 2002, and May 7-11, 2005, and May 2007, 2009,2011.  
In-house course for Saudi Arabian Oil Co. (Saudi Aramco)
2. *Industrial Catalytic Reactors*  
April 9-13, 2005
3. *Element of Applied Process Engineering*  
September, 2003
4. *Membrane Separation Processes(two times)*
5. *Wastewater Treatment*  
October 26-30, 2002.

### **Course Coordination**

- i. Coordinated CHE 495, 2006-2012.
- ii. Coordinated CHE 204, 2005-06
- iii. coordinated CHE 325 in terms 011,012 and 021
- iv. coordinated a short course on Membrane Separation Processes 2003.
- v. coordinated a short course on Membrane Separation Processes in 2005

### **Academic Training**

Attended the following academic workshops and courses:

1. *Designing courses for Significant Learning*, September 3-5, 2006  
Instructor: Prof. Lee Flink, University of Oklahoma, USA
2. *Introduction to WbCT*, July 10-14, 2004,  
Academic Development Center, KFUPM, Dhahran.
2. *Workshop on Critical Thinking*, September 7-10, 2003  
Instructor: Prof. R. J. Swartz, Director, National center for Teaching Thinking, USA
3. *Increasing Effectiveness as a University Teacher*, September 9-11, 2002  
Instructors: Prof. H.I. Ellington and Shirley Earl, Gordon University, UK.
4. *How to be an effective University Teacher*, September 7-8, 2002  
Instructors: Prof. H.I. Ellington and Shirley Earl, Gordon University, UK.
5. *Striving for Excellence in University Teaching and Learning*, August 27-29, 2001  
Instructor: Prof. S.J. Piccini, University of Ottawa, Canada.
6. *Workshop on Enhancing Students Learning*, March 26, 2002,  
Academic Development Center, KFUPM, Dhahran.
7. *Workshop on Preparing to Teach*, August 26-27, 2001,  
Academic Development Center, KFUPM, Dhahran.

### **Administration/Services**

Served in the following Departmental-level, College-level and University Committees:

#### **i) University Standing Committees**

1. Member, KFUPM Research Advisor Committee, headed by his Excellency the Rector.
2. Member, Board of Directors, Center of Research Excellence in Renewable Energy, KFUPM., May 2008 to date
3. Member, Executive Board, Center of Research Excellence in Renewable Energy KFUPM, April 2008 to date.
4. Member, Revision of of PhD program requirements at KFUPM, formed by the Rector, Jan 2008.

#### **ii) University Ad hoc Committees**

1. KACST Proposal coordination Committee (First five year science plan) formed by Vice Rector for Applied Research
2. KACST Desalination proposal committee formed by Vice Rector for Applied Research, Ad Hoc Committee, March/April 2007, team member.
3. Member, Evaluation of Applications for University Excellence in Research Award, formed by the Dean of Scientific Research, March 2010.
4. Member, Committee for the policy and procedures for Centers of Research Excellence appointed by the VR Research
5. Member, Promotion Committee formed by Vice Rector for Applied Research, 2005-2012

#### **iii) Department/College Committees**

1. Chemical Engineering Department Council
2. Graduate Admissions Committee
3. Computer Management Committee
4. Continuing Education Committee
5. Laboratory and Safety Committee
6. Curriculum Committee
7. College Specials Functions Committee
8. Program Assessment and ABET Committee.

1. *Academic Advisor for Chemical Engineering Students*
2. *Coop Advisor*
3. *Summer Training advisor*

### **Organization of Conferences/Workshops**

Organised workshops/conferences for the center of Research Excellence in Renewable Energy at KFUPM, was the chairman and member of the organizing committee for the workshops. The first workshop was for the establishment of the center.

1. 1<sup>st</sup> Saudi Renewable Energy conference, February 2011, KFUPM, Saudi Arabia.
2. First workshop for the Center of Research Excellence in Renewable Energy (CoRe-RE), November 2007.
3. CoRe-RE second workshop on Advances in Fuel Cells, November 2008
4. CoRe-RE 3rd workshop on Advances in Renewable Energy, November 2009
5. MIT-KFUPM Workshop on clean water and clean energy, Jan. 2010.
6. KFUPM-NUS workshop for research collaboration, KFUPM, Saudi Arabia, 2010
7. CoRe-RE 4th workshop on Advances in Solar Energy, April 2010.
8. MIT-KFUPM Workshop on clean water and clean energy, Jan. 2010, 2011.

### **Other Services**

#### **i) Establishment of Center of Excellence in Renewable Energy at KFUPM**

I was part of the team who actively participated in the establishment of the center awarded by the Ministry of Higher Education starting from proposal writing for the establishment of center to the complete center formation. The center started in 2008.

#### **ii) Establishment of Fuel Cell Research Lab at CoRe-Renewable Energy at KFUPM**

After formation of Renewable Energy center center, I established the fuel cell research lab in the center at Research Institute.

#### **iii) Establishment of Technical Innovation Center in Carbon Capture and Sequestration at KFUPM**

I was part of the team who actively participated in the establishment of the center awarded by the KACST of Saudi Arabia starting from proposal writing for the establishment of center to the complete center formation. The center started in 2012.

### **Graduate Students Supervision**

1. Nidal Abu-Thabit, "*Synthesis of Ionic Polymers for proton Exchange membrane Fuel Cell*", Ph. D. Thesis, Thesis Supervisor, May 2010.
2. M. Bello, *Development of Methanol Electrooxidation Catalyst for Direct Methanol Fuel Cell*, Ph.D. Thesis, Chemical Engineering, Ph.D. Thesis Supervisor, July 2011.
3. Safdar Hossein, *Electrochemical conversion of carbon-dioxide to hydrocarbons*, Ph.D. Thesis, Chemical Engineering, Ph.D. Thesis Supervisor June 2012.
4. Farid fadhillah. "*Polyelectrolyte Multilayer Reverse Osmosis Membrane for Seawater desalination*", Chemical Engineering, Ph.D. Thesis Supervisor June 2012
5. Asif Matin, *Enhancing the bio-fouling resistance of reverse osmosis membranes by dual surface modification*, Ph.D. Thesis, Co-Supervisor, June 2012
6. Fahad Al-Khaldy, *Removal of Chromium and Cadmium from water using carbon based adsorbents*, Ph.D. Thesis, Chemical Engineering, Co-Supervisor, June 2011.
7. Mohammed Shahid, *Electrochemical Reduction of carbon-dioxide to hydrocarbons*, M.S. Thesis, Chemical Engineering, Thesis Co-Supervisor, May 2012.
8. M. Abdul Raouf, "*Performance of composite SPEEK membranes for PEM Fuel Cell*", M.S. Thesis, Chemical Engineering KFUPM, Dhahran, November 2007, Thesis Supervisor
9. M. Bello, "*Methanol Permeation in Novel PEM for Direct Methanol Fuel Cell*", April 2006, M.S. Thesis, Chemical Engineering, Supervisor.
10. Abdullah S Sultan, "*Rheological and Thermal Characterization of Polymeric Membrane Materials for use in Fuel Cell*", May 2006, M.S. Thesis, Chemical Engineering Supervisor.
11. Nafeed Ahmed, "*Electrochemical Removal of CO from Hydrogen using Nickel Catalyst*", 2005, M.S. Thesis, Chemical Engineering, Supervisor.
12. Mohd Irfan Ahmed, "*Development of composite membranes for direct methanol Fuel cell*", 2005, M.S. Thesis, Chemical Engineering, Supervisor.
13. Nabeel S. Abu-Ghander, "*Removal of Heavy Metal Ions using a Novel Intergated Electrolytic-Electrodialytic Process*", December 2003, Supervisor.
14. Tareg M. Al-Soudani, "*Isomerization and separation using a pressure swing adsorption reactor*", December 2003, Co-supervisor.
15. Mohammed Inam, "*Fuel Cell Testing of composite SPEEK-Y-zeolite/HPA membranes for methanol fuel cell*", Co-Supervisor.
16. Mohammed Abdul Kareem, "*Influence of Polymer Structure on the Conformations of Polyolefin Melts and their blends: Molecular dynamics simulation Study*", M.S. Thesis, Chemical Engineering June 2007. Committee Member.
17. Parvez, Mohammad Anwar, "*Rheology of Metallocene Polyethylenes with Controlled Long Chain Branching*", June 2008, Thesis, Chemical Engineering, Thesis Committee Member.
18. Rizwan Ahmed Khan, "*Metal Incorporation in MCM-41 for Hydrodesulfurization*", January 2003, Committee Member.



19. Tayyab Hameed, "Rheological and MD Simulation study of the miscibility of metallocene LLDPE in LDPE", January 2003, Committee Member.
20. Ashraful\_islam, "Influence of Branching on Structure-Property Relationships of metallocene LLDPE ", 2005, Committee Member.
21. Khaled M. Al-Dossary, "Development of a Solid-Liquid Mass Transfer Probe based on Limiting Diffusion Current: Application in Stirred Tanks", Committee Member

## **Research Projects**

1. CO<sub>2</sub> Capture and *in situ* conversion of CO<sub>2</sub> to hydrocarbons by solar energy, funded by Technical Innovation Center (TIC) on Carbon Capture and Sequestration, KACST, Govt. of Saudi Arabia, 2012-2014.
2. Modified composite membranes and alloy catalysts for PEM/DMFC, National Science, Technology and Innovation Plan and KACST Collaborative Grant, September, 2011-September 2013, Budget SAR 2.0 million.
3. Novel composite membranes and carbon nanotubes based electrocatalyst for PEM fuel cells, National Science, Technology and Innovation Plan and KACST Collaborative Grant, September, 2009- September 2012, Budget SAR 2.0 million.
4. Development of New Generation Reverse Osmosis (RO) Membranes for Seawater Desalination, National Science, Technology and Innovation Plan and KACST Collaborative Grant, September, 2009- September 2012, Budget SAR 2.0 million. (*This project is in collaboration with the university of Ottawa, Canada*)
5. Electrochemical conversion of carbon-dioxide to hydrocarbons using solid electrolyte, National Science, Technology and Innovation Plan and KACST Collaborative Grant, September, 2009- September 2012, Budget SAR 2.0 Million.
6. Multi- Scale Design of Next Generation Reverse Osmosis (RO) Membranes for Seawater Desalination, KFUPM-MIT Research Collaboration, Budget SAR 5.0 Million, September 2008-September 2014. (*This project is in collaboration with MIT Center for Clean Water and Clean Energy, Massachussettes Institute of Technology (MIT), USA*)
7. Performnace Evaluation and Testing of New membranes and electro-catalyst for fuel cells, Center of Research Excellence in Renewable Energy, Budget SAR 2,751,500, October 2008 – May2012 (*This project is in collaboration with National Institute of Materials Science, Japan's top research center*).
8. Membrane and Cell Development for the Electrochemical Cell conversion of CO<sub>2</sub> to Hydrocarbons, Center of Research Excellence in Renewable Energy, Budget SAR 2,810,250, October 2008 – May2012.
9. Simulation-Aided Characterization of Bio-inspired Separation Membranes for Water Purification, KFUPM DSR project (Consultant), August 2011-June 2012.
10. Separation of Binary Organic Mixtures using Novel Composite Polymeric Membranes by Pervaporation, KFUPM, DSR Research Grant, Budget SR 425,000, May 30, 2006, duration: 3 years.
11. Synthesis, Thermal, and Rheological Characterization of Composite Membranes for Fuel Cell Applications, KFUPM, Fast Track, Budget SR75,000 April 1, 2002 – Spetember 30, 2003.
12. Development of New Polymer Composite Membranes for Direct Methanol Fuel Cell, KFUPM-ARI Grant, Budget SR 75,000, November 2002 - December 2003.

13. Investigation of the Influence of Molecular Structure on Molecular Characteristics of metallocene LLDPE by NMR, Light Scattering, DSC, and MD Simulation Techniques, KACST grant, October 2003-August 2006, Budget SR 867,000.
14. Development of Highly Conductive Composite Membranes for Medium Temperature PEM Fuel Cell. KFUPM, DSR Research Grant no. 294 , Budget SR 638,700, November 2005-May 2008.
15. Methanol Permeation through PEMFC: Evaluation of Electrochemical Techniques, SABIC Research Grant no. SABIC-2005-20 (SR75000), Sept.1, 2005-August 31, 2006.
16. CHE 204 Transport Phenomena I', Online Course, KFUPM-DAD funded project, January-December 2007.
17. Development of zeolite based polymer membranes for use in methanol Oxidation fuel cell, Laval University Canada, **Natural Resources Canada**, NRC Grant, 1995-1997.
18. Development of composite polymer membranes, Laval University, Canada, **NSERC Grant, Canada**, 1997-1999.
19. Synthesis and characterization of Mesoporous Molecular Sieves and Aluminophosphate molecular sieves (VAPO-5, 11,17,31),Laval University, Canada **NSERC**., 1998-1999
20. Saudi-Japanese Research Project on Heavy Oil Upgrading , Funded by Petroleum Energy Center, Japan, 1994-2000, Team member
21. Pilot Plant Testing of Competitive Hydrotreating Catalysts, Saudi Aramco grant, 1991-93, Task Leader
22. Performance Evaluation of Naphtha Reforming Catalysts, Saudi Aramco grant 1992-94, Team member
23. Performance Evaluation of Steam Reformer Catalysts, Saudi Aramco grant, 1994-95, Task Leader
24. Synthesis of Zeolites for Catalytic Applications, KFUPM grant, 1992-94, Team member
25. Pilot Plant Testing of Naphtha Hydrodesulfurization Catalysts, Jeddah Refinery grant, 1993-94, Task Leader.