

*Qatar University
Gas Processing Center*



Prof. Ibnelwaleed A. Hussein

Detailed CV

May 2017

Ibnelwaleed Ali Hussein, Ph.D., P.Eng.

1. Personal Information

a) Personal Details

Name: Ibnelwaleed Ali Hussein
Date of Birth: March 23, 1961
Country of Birth: Sudan
Nationality: Canadian
Languages: Arabic/English
Address: Gas Processing Center
College of Engineering, PO Box 2713
Qatar University
Doha, Qatar

Phone: +974 31031055; E-mail: ihussein@qu.edu.qa
web address <http://qufaculty.qu.edu.qa/ihussein/>

b) Education

Ph.D., Chemical Engineering, April 1999
University of Alberta
Edmonton, Alberta, Canada

Thesis title: Molecular Order, Miscibility, and Rheology of Molten Polyethylenes

PhD Thesis Supervisor: Prof. Michael C. Williams (one of the first students of Prof. Robert Byron Bird at University of Wisconsin).

PhD External Examiner: Prof. Morton Denn, Albert Einstein Professor of Science and Engineering and Director of the Levich Institute, Levich Institute, City College of CUNY.

GPA 8.33/9

M.Sc., Chemical Engineering, July, 1992
King Fahd University of Petroleum and Minerals, KFUPM.
Dhahran, Saudi Arabia

Thesis title: Hydrogen Production by the Electrolysis of Saline Water

MS Thesis Advisor: Prof. Hussein Abdel Aal.

B.Sc., Chemical Engineering (First Class Honors), November 1985.
University of Khartoum
Khartoum, Sudan

c) Employment

<u>September 2015-todate</u>	Upstream Research Professor, Gas Processing Center, College of Engineering, Qatar University, PO Box 2713, Doha, Qatar.
<u>April 13, 2009- August 2015</u>	Professor, Chemical Engineering Department King Fahd University of Petroleum & Minerals Dhahran 31261.
<u>March 15, 2008 – February 2009</u>	Assistan Director for Technical Affairs (A), Center of Research Excellence in Petroleum Refining and Petrochemicals
<u>January 3, 2005 – April, 2009</u>	Associate Professor, same previous address
<u>January 2000 – January 2, 2005</u>	Assistant Professor, same address
<u>May 1999 – Jan. 2000</u>	Post Doctoral Fellow Chemical & Materials Engineering Department University of Alberta Edmonton, Alberta Canada T6G 2G6 Supervisor: Professor Michael C. Williams.
<u>Sept. 1994 – April 1999</u>	Teaching Assistant Chemical & Materials Engineering Department University of Alberta Edmonton, Alberta Canada T6G 2G6
<u>April - May 1998</u>	Lecturer, Northern Alberta Institute of Technology (NAIT) Edmonton, Alberta, Canada
<u>Sept. 1992 - August 1994</u>	Lecturer, Department of Chemical Engineering King Fahd University of Petroleum & Minerals Dhahran 31261, Saudi Arabia
<u>Sept. 1989 - August 1992</u>	Research Assistant, Department of Chemical Engineering King Fahd University of Petroleum & Minerals Dhahran 31261, Saudi Arabia
<u>Jan. 1986 – Sept. 1989</u>	Commercial Sales Engineer, Mobil Oil Sudan Ltd., Khartoum, P.O. Box 283 Sudan

d) Editorial, Professional Membership and Consultancy

1. **Chair**, Technical Committee of The 5th International Gas processing Symposium, Nov 27-29, 2016, Qatar University.
2. **Consultant**, Ministry of Petroleum, Sudan: “Sudanese-Norwegian Cooperation Program for Sustainable Development and Management of the Petroleum Sector in Sudan”, Dec-March, 2015.
3. **Chemical Engineering Subject Editor**, Arabian Journal for Science & Engineering.
4. **Lead Guest Editor**, Special Issue on EOR, Journal of Chemistry, Published by Hindawi, 2014.
5. **Member**, Editorial Advisory Board, The Open Petroleum Engineering Journal, Published by Bentham Science Publishers Ltd.
6. **Member**, International Representative and Executive Board of the Polymer Processing Society.
7. **Member**, KFUPM Scientific Council (2009-2013). This council is the highest authority at KFUPM that is responsible for research, faculty promotion, guidelines, ..etc.
8. **Registered Professional Engineer**, APEGA (*Association of Professional Engineers and Geoscientists of Alberta*), Alberta, Canada.
9. **Member**, Society of Petroleum Engineers; Chemical Institute of Canada, MCIC; Canadian Society of Chemical Engineers (CSChE); Canadian Society of Rheology; Society of Rheology; AIChE Saudi Arabia Section.

e) Prizes, Awards, and Scholarships

1. *Recipient of KFUPM Excellence in Research Award for the academic year 2014/2015.*
2. *Recipient of KFUPM Excellence in Research Award for the academic year 2009/2010.*
3. KACST Silver Award for a published paper extracted from a KACST Project, Jan 2010.
4. *Nominated by the Chemical Engineering Department for the “Excellence in Teaching” Award, 2006/2007.*
5. *Recipient of Distinguished Faculty for the Academic Year 2005/2006, Department of Chemical Engineering, King Fahd University of Petroleum & Minerals, June 2006.*
6. *Recipient of KFUPM Excellence in Research Award for the academic year 2004/2005.*
7. *Recipient of Distinguished Faculty for the Academic Year 2001/2002, Department of Chemical Engineering, King Fahd University of Petroleum & Minerals, May 2002; Recipient of Deanship of Student Affairs Award for the same academic year.*
8. *Recipient of Distinguished Faculty for the Academic Year 2000/2001, Department of Chemical Engineering, King Fahd University of Petroleum & Minerals, May*

2001. *Recipient* of Deanship of Student Affairs Award for the same academic year.

9. *Recipient* of the 1999 Canadian Society of Rheology Graduate Student Award.
10. The *Nominee* of the Department of Chemical and Materials Engineering for the 1999 Governor General's Gold Medal Award, University of Alberta, Canada.
11. *Recipient* of Province of Alberta Graduate Fellowship, from May 1998 to April 1999, University of Alberta, Edmonton, Alberta.
12. *Recipient* of Province of Alberta Graduate Fellowship, from May 1997 to April 1998, University of Alberta, Edmonton, Alberta.
13. *Recipient* of University of Alberta Ph.D. Scholarship, from Sept. 1994 to August 1996, University of Alberta, Edmonton, Alberta.
14. Top student in the Faculty of Engineering and Architecture for the 1985 batch, U. of Khartoum, Khartoum, Sudan.
15. *Recipient of* Mobil Oil Sudan Ltd Scholarship for 1984 and 1985.
16. *Recipient of* Sudan Engineering Society Prize for best performance in final year Project, 1985, U. of Khartoum, Khartoum, Sudan.
17. *Recipient of* University Prize for best performance in final year Chemical Engineering, 1985, U. of Khartoum, Sudan.
18. *Recipient of* University Prize for best performance in 4th year Chemical Engineering, 1984, U. of Khartoum, Khartoum, Sudan.
19. *Recipient of* Syd Moh. Abd Rubbo Prize for the best performance in 3rd year Chemical Engineering, 1983, U. of Khartoum, Khartoum, Sudan.

f) Conference and Workshops Organization

1. Member of the Steering Committee, International EOR & Heavy Oil Conference, March 2013, Oman.
2. Chaired a session on Rheology in the 26th Annual Meeting of the Society of Polymer Processing, Banff, Canada, July 4-8, 2010.
3. Co-chaired a session in “Well Stimulation & Enhanced Oil Recovery” conference held in Dalian, China, April 12-15, 2010.
4. Member of Steering Committee, Improved Oil Recovery Workshop, Athens, June 1-5, 2009.
5. Member of Steering Committee, International EOR Produced Water Management Workshop, Luxor, Egypt, Dec. 1-4, 2008.
6. Chaired a session in “EUROPOLYMER 2007 Conference”, Gargnano, Italy, May 27- June 1, 2007.
7. Co-chaired a session on Polymers, 6th Saudi Engineering Conference, Dhahran, KFUPM, Saudi Arabia, November, 2002.
8. Chaired a session on “Rheology of Blends”, 3rd Pacific Rim Conference on Rheology, Vancouver, Canada, July 8-13, 2001.
9. Chaired the “Masson Award Plenary Lecture” delivered by Professor Michael C. Williams, 3rd Pacific Rim Conference on Rheology, Vancouver, Canada, July 8-13, 2001.

2. Teaching Experience

a) Courses Taught

i. Qatar University

1. CENG 602 Applied Research Methodology (2015/2016)
2. CHNE 421 Plant Design I (2016/2017)
3. CHME 422 Plant Design II (2017)
4. Short Course on “Stimulation of Oil and Gas Wells”, April 2-4, 2017.

ii. KFUPM

1. CHE 201 Introduction to Chemical Engineering (8 times).
2. CHE 202 Principles of chemical Engineering II (1 time).
3. CHE 203 Chemical Thermodynamics (1 time).
4. CHE 204 Transport Phenomena I, Fluid Mechanics (13 times)
5. CHE 306 Equilibrium Staged Separations (1 time).
6. CHE 463 Polymer Technology (3 times).
7. CHE 402 Kinetics & Reactor Design (2 times).
8. CHE 425 Design and Economics (1 time).
9. CHE 495 Integrated Design Course (23 times).
10. CHE 501 Transport Phenomena, **Graduate Course** (3 times).
11. CHE 541 Processing in the Materials Industry, **Graduate course** (1 time).
12. CHE 543 Polymeric Materials, **Graduate course** (3 times).
13. CHE 690 Rheology of Polymers & Other Complex Fluids, **Graduate course** (2 times).
14. OGSF 510 Transport Phenomena, **Graduate course** (2 times).

iii. Northern Alberta Institute of Technology (NAIT), Canada

LIB 460, a course on Chemical Plant Processes (mainly Petroleum Refining).

b) Course Coordination

- i. coordinated CHE 204 in terms 011 and 012
- ii. coordinated a short course on Rheology and Polymer Processing in March 2002.
- iii. coordinated a short course on Polymer Engineering in March 2003.
- iv. coordinated a short course on Polymer Engineering in March 2004
- v. coordinated a short course on Polymer Engineering in March 2005
- vi. coordinated a short course on Polymer Rheology & Extrusion, May 2005.
- vii. coordinated CHE 495 many times.

c) Development and Teaching of Continuing Education Courses

- i. Taught and coordinated a short course on “Polymer Engineering”, December 1-5, 2012.

- ii. Taught and coordinated a short course on Polymer Rheology & Extrusion, May 3-11, 2008.
- iii. Taught in a short course on Polymer Reaction Engineering, April 27- April 31, 2008.
- iv. Taught and coordinated a short course on "Polymer Engineering", March 15-19, 2008.
- v. Taught a short course to Aramco on Physical Properties of Gases and Liquids, 2007-2009 (5 times).
- vi. Taught a short course to Aramco on Vessel Design, 2007.
- vii. Taught and coordinated a short course on Polymer Rheology & Extrusion, May 7-11, 2005.
- viii. Taught and coordinated a short course on "Polymer Engineering", March 19-23, 2005.
- ix. Taught a short course on "Plastics: Materials, Design, Processing, and Practical Applications", January 1-5, 2005.
- x. Taught and coordinated a short course on "Polymer Engineering", March 27-31, 2004.
- xi. Taught a short course on "Plastics: Materials, Design, Processing, and Practical Applications", Dec. 13-17, 2003.
- xii. Proposed, developed course material, and taught a short course on "Polymer Engineering", March 15-19, 2003.
- xiii. Developed course material and taught a short course on "Plastics: Materials, Design, Processing, and Practical Applications", Dec. 28, 2002 – Jan. 1, 2003.
- xiv. Proposed, developed course material, taught and coordinated a short course on "Rheology and Polymer Processing", Feb. 9-14, 2002.

d) Other Teaching Activities

- xv. Developed an online course for CHE 204.
- xvi. participated in workshops on WEBCT training.

e) Supervision of Co-op Students

supervised or co-supervised many coop students and who spent 7 months training in the industry as well as summer training students.

3. Research

My general interests are in polymers and rheology of complex fluids and their applications in petroleum engineering applications. Specific interests include:

- Chemical Enhanced Oil Recovery using polymers, surfactants and nanomaterials with focus on carbonate reservoirs.
- Water control in oil and gas reservoirs using emulsified Polymeric gels.
- Development of new materials for oil-water emulsification and its applications in oil and gas industries.
- Fundamental understanding of emulsification and interfacial phenomena.
- Use of polymers in gas hydrates.

- Utilization of industrial wastes in nanocomposites, CO₂ capturing and asphalt modification.

H-index

Google Scholar

My Google Scholar h-index is 24.

<u>Citation indices</u>	All	Since 2011
<u>Citations</u>	1566	981
<u>h-index</u>	24	16
<u>i10-index</u>	52	38

Source: <http://scholar.google.com/citations?user=Fsd-bkEAAAAJ&hl=en>

Scopus: My Scopus h-index is **19**. My Author ID is 7006902814.

<http://www.scopus.com/authid/detail.url?authorId=7006902814>

<http://orcid.org/0000-0002-6672-8649>

a) Research Projects

i. Current Projects

1. Development of hydrogen sulfide-free Formulations for the Removal of Iron Sulfide Scale from Oil and Gas wells, Lead PI, \$725,000, September 2016-September 2019. Funded by Qatar National Research Fund.
2. Screening of New Cost-Effective Polymer-Based Superplasticizer for Construction Applications, Co PI, QR 120,000, June 2016-June 2017, Funded by Qatar University.

ii. Completed Research Projects

3. Study of Charge collection using interdigitized nanorods in organic solar cell, NSTP, Co-I, Sept 1, 2013-Feb 29, 2016, SR 2 million, **co-I**.
4. Production of Activated Carbon from Waste Fly Ash and Application for Selective Removal of hydrogen sulfide from Natural Gas, KACST-NSTP, Sept 2012-February 28, 2015, Co-I.
5. Design and Synthesis of Novel Organic Molecules for Efficient Dye-Sensitized Solar Cells”, KACST-NSTP, Co-I, March 1, 2012-February 28, 2015, SR 2 Million, **Principal Investigator**.
6. Study of polymer-surfactant interaction for chemical enhanced oil recovery (cEOR) in carbonate reservoirs, Saudi Aramco, Co-I, June 2012-May 2015.
7. Development of a New Cost-Effective Polymer Gel for Water Control in Oil and Gas Wells of Saudi Aramco, KACST, Jan. 2012-Dec 2014, Principal Investigator, SR 1.28 millions.
8. Molecular-scale design and engineering of nanostructured organic solar cells, **KAUST**, September 1, 2010 – June 2014, **Project Manager**, SR 525,000.
9. Design of Smart Fluids for Acid Delivery in Well Stimulation Treatment, **KACST-NSTP, Co-I**, May 1, 2011-April 30, 2013, Budget SR 1.7 millions.

10. Sulfur in Composite materials, **Saudi Aramco**, April 2012-March 2014, **Project Manager**, SR 750,000, April, 2012-March, 2014.
11. Active Site Identification, Mathematical Modeling, Rheological, Thermal and Mechanical Properties of Controlled Microstructure Polyolefins made with Ziegler-Natta Catalysts, **PI**, KACST approved. This project is done in collaboration with Professor Joao Soares, University of Waterloo, Canada, June 1, 2007- Feb 2012, **SR 600,000**.
12. Enhancing the Processability of Polyolefins by using Nanoclay Additives, **PI**, **KACST**, Jan 2009 -Jan 2012, **SR 1,257,000**.
13. Polyethylene/Nanoclay Composites for Aramco gas handling steel pipe lining: Phase I: Formulations and Permeability Measurement, **Principal Investigator**, KACST-NSTP, September 2009-August 2011, **SR 1,000,000**.
14. Synthesis; Solution, Melt, and Solid-State Properties of Metallocene Polyolefins with Controlled Long Chain Branching – Phase I, **PI**, KFUPM, July 2007- May 31, 2011, **SR418,000**.
15. Sulfur Based Polymer Development – Phase II, **ARAMCO** Funded Project; **Project Manager**; CHE 02309; June 1, 2009 – May 31, 2011, **SR 787,500**.
16. Impact of Surface Modification and Characteristics of Carbon Nano Tubes on the Properties of Polyethylene Nanocomposites; **Principal Investigator**, Center of Research Excellence in Petroleum Refining and Petrochemicals; KFUPM, September 1, 2008-Sept. 1, 2010.
17. Separation of binary Organic Mixtures Using Novel Composite Polymeric membranes by Pervaporation”, **Co-Investigator**, Feb. 1, 2006 – Jan 31, 2009, KFUPM funded.
18. Development of Highly Conductive Composite Membranes for Medium Temperature PEM Fuel Cell, KFUPM, **Co-Investigator**, Nov. 2005-April 2008.
19. Utilization of Heavy Oil Ash to Improve Asphalt Binder, Sulfur Asphalt and Asphalt Concrete Performance”, July 2008-Dec 2009 funded by Saudi Aramco.
20. Influence of Hydrophobe Architecture on Self Assembly, Rheology and Interfacial Properties of Amphiphilic ionic Polymers, KFUPM, SR 200,000 Budget, **Co-Investigator**, October 2005-September 2007.
21. Sulfur Modification of Polymers for use in asphalt Binders, **ARAMCO** Funded Project; **Project Manager**; CHE 02279; **SR 503,000**, July 21, 2007 - Dec 30, 2008.
22. “Developing Strategic Alliances with National, Regional and International Institutions”, KFUPM-DAD, SR 59,400 Budget, Sept 2006- April 2007, Team Member.
23. CHE 204 Transport Phenomena I, Online Course, KFUPM-DAD funded, Feb-Nov 2007.
24. Alligning of Research with International Directions and Trends, KFUPM-DAD, SR 61,400 Budget, April 2007-March 2008, Team Member.
25. Sand Modification using Hydrobond Polymers, Project No. – CEW 2288, Bughshan Company, SR 2 million Budget, team member.
26. "Influence of Tacticity and Mw on the Compatibility of PP/LDPE Blends: Rheological, hermal, Mechanical, and Molecular Dynamics Simulation Study", KFUPM- SABIC Grant, **Principal Investigator**, July 2005-November 2006, Budget SR 73,000.

27. 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, October 2003-September 1, 2006, Budget SR 867,000.
28. Rheological Testing of Polyolefins, June 2006, Project # CHE 2770, SABIC, SR 5,000.
29. Synthesis, Thermal, and Rheological Characterization of Composite Membranes for Fuel Cell Applications, KFUPM, Fast Track, **Co-Investigator**, Budget SR75,000, April 1, 2002 – February 29, 2004.
30. Investigation of Structure-Conformation Relationships in molten m-Polyethylenes by Rheological and Molecular Simulation Techniques, **Project Manager**, KFUPM-ARI Grant, Budget SR 75,000, November 2002 – December 2003.
31. 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 CGS, **Principal Investigator**, Budget SR 1.28 million, April 2001-April 2004.
32. A study to improve SABIC Polymers for the Performance Modification of Saudi-Asphalt binders”, SABIC, **Co-Investigator**, April 2003- Nov. 2004, Budget SR 240,000.
33. Potential of polymer and nanomaterials in fluid drag reduction of emulsified acids used in oil stimulation, KACST-NSTIP, Co-I, June 2010- Jan 2013, SR 1,300,000.
34. Treatment of Waste Oil Fly Ash for improvement of Asphalt Binder and Asphalt Concrete Performance; KACST, September 2010,- Jan 2013, Co-I, SR 725,600.
35. Enhancing Properties of Sulfur Asphalt, Saudi Aramco, March 2011-Nov 2012, Project Manager, SR 760,000, May 1, 2011-Feb 28, 2013.

b) Patents, Publications and Presentations

i. Patents Issued

- P1.** Mohammed Al-Mehthel, Hamad I. Al-Abdul Wahhab, **Ibnelwaleed A. Hussein**, “Utilization of heavy oil fly ash to improve asphalt binder and asphalt concrete performance”, **Patent # US8062413 B1**, May 21, **2013**.
- P2.** Ali A. Yaumi, Reyad A. Shawabkeh, **Ibnelwaleed A. Hussein**, “Carbon Dioxide Adsorbent Composition”, **Patent # US 8545781 B1**, October 1, **2013**.
- P3.** **Ibnelwaleed A. Hussein**; Mohammed H. Al-Mehthel; Hamad I. Al-Abdul Wahhab; Saleh H. Al-Idi and Mohammed. A. Suleiman “Asphalt Compositions with Sulfur modified Polyvinyl Acetate”, **Patent # US 8,721,215 B2**, May 13, **2014**.
- P4.** Mohammed Al-Mehthel, Mohammad Anwar Parvez, Hamad I. Al-Abdul Wahhab, **Ibnelwaleed A. Hussein**, Saleh H. Al-Idi, “Sulfur extended asphalt modified with crumb rubber for paving and roofing”, Patent # US9181435 B2, November 10, **2015**.

P5. Ibbelwaleed A. Hussein, H.I. Al-Abdul Wahhab, M.H. Al-Mehthel & S. H. Al-Idi, J. Sleem, “Sulfur extended polymer for use in asphalt binder and road maintenance”, **US Patent # 9,012,542 B2**, April 21, **2015**.

P6. Ibbelwaleed A. Hussein, Mohammed H Al-Mehthel, Hamad I. Al-Abdul Wahhab, Saleh H. Al-Idi, Mohammed A Suleiman, “Sulfur modified polyvinyl acetate (PVAc)”, **US Patent # 9,243,167 B2**, Jan 26, **2016**.

P7. M Al-Mehthel, HI AA Wahhab, SH Al-Idi, **IA Hussein**, “Heavy oil ash in roofing, damp-proofing, and water proofing applications”, **US Patent # 9,249,304**, February 2, **2016**.

P8. Mohammed Al-Mehthel, Hamad I. Al-abdul Wahhab, Saleh H. Al-idi, **Ibbelwaleed A. Hussein**, “Sulfur Asphalt in Roofing, Damp-proofing and Water Proofing”, **US Patent # 9,309,441**, April 12, **2016**.

P9. Mohammed Al-Mehthel, Dhahran, Saleh H. Al-Idi, Hamad I. Al-Abdul Wahhab, **Ibbelwaleed A. Hussein**, “Foamed Sulfur Asphalts for Pavement Recycling and Soil Stabilization”, **US Patent # US 9,346,956 B2**, May 24, **2016**.

P10. Mohammad Anwar Parvez, **Ibbelwaleed A. Hussein**, Hamad I. Al-Abdulwahab, Mohammed Al-Mehthel and Saleh Al-Idi, “Enhancing properties of sulfur extended asphalt using polyethylene wax”, **World PCT/US2014/033144**, published on Oct 16, 2014.

P11. Mohammed Al-Mehthel, Dhahran, Saleh H. Al-Idi, Hamad I. Al-Abdul Wahhab, Ibbelwaleed A. Hussein, “Sulfur Asphalt in Roofing, Damp-Proofing and Water Proofing” **US Patent # 9,637,635**, May 2, **2017**.

ii. Patents Pending

P11. Ibbelwaleed A. Hussein, M. Al-Yaari, A. Al-Sarkhi, “Acid Emulsion for Acid Treatment of Oil Reservoirs”, Patent Application # US 14/090,678, May 28, **2015**, **Patent Pending**.

P12. Hamad I. Al-Abdul Wahhab, Mohammad Anwar Parvez, **Ibbelwaleed Ali Hussein**, Reyad A. Shawabkeh, “Asphalt Concrete with modified oil fly ash”, US Patent Application # 14/069937 May 7, 2015, **Patent Pending**.

P13. Mohammed Al-Mehthel, Mohammad Anwar Parvez, Hamad I. Al-Abdulwahab, **Ibbelwaleed A. Hussein**, Saleh Al-Idi, “Sulfur Extended Asphalt Modified with Crumb Rubber in Paving and Roofing”, **World Patent Application # PCT/US2014/050028**, Patent # 9624351, April 18, 2017.

P14. Ibbelwaleed A. Hussein, Ahmad A. Adewunmi Abdullah S. Sultan, Ghaithan Al-Muntasheri, Khaled El-Karsani, “Use of Organoclay as emulsifier for Polymeric gels used in water-shut-off treatments”, US Patent Application # US 14/258,486, Publication date: Oct 22, **2015**, **Patent Pending**.

P15. Umer Mehmood, Shakeel Ahmed, Ibnelwaleed A. Hussein, Organic Dyes Incorporating the Oxadiazole Moiety for Efficient Dye-Sensitized Solar Cells, Patent Application number # 2016/0343515 A1, Patent filed, May 20, 2015, Published Nov 24, **2016**.

P16. Umer Mehmood, Shakeel Ahmed, Ibnelwaleed A. Hussein, Organic Dyes Incorporating the Oxadiazole Moiety for Efficient Dye-Sensitized Solar Cells, Patent Application number # 2016/0343516 A1, Patent filed, May 20, 2015, Published Nov 24, **2016**.

iii. Patents Submitted

P17. Hamad I. Al-Abdul Wahhab, Mohammad Anwar Parvez, Ibnelwaleed Ali Hussein Reyad A. Shawabkeh, Chemical Treatment of Oil Fly Ash and its use in Asphalt Application, Docket # 35000.38. submitted to USPTO.

P18. Musaab I. Magzoub, Mustafa Saleh Nasser, Ibnelwaleed A. Hussein, Mohamed Mahmoud, Abdullah S. Sultan, "Thermochemical Upgrading of Ca-Bentonite for oil and gas drilling applications, submitted to USPTO.

P19. Ibnelwaleed A. Hussein, Shanmugam Nagendiran, Adel Badghaish, Mohammed H. Al-Mehthel, Utilization of elemental sulfur in unsaturated polyester composites, submitted to USPTO.

P20. Ibnelwaleed A. Hussein, Adel Badghaish, Shanmugam Nagendiran, Mohammed H. Al-Mehthel, Abdelrahman Nasr Shuaib, Sarfaraz Ahmed Furquan, "Development of a UV stable formulation based on Oil Fly Ash for use in Epoxy composites", submitted to USPTO.

P21. Khalid S Elkarsani, Ghaithan A Al-Muntasheri, Ibnelwaleed A. Hussein, Abdullah S. Sultan, "Development of a PAM/PEI/NH₄Cl Polymeric Gel System for Water Control in Sandstone and Carbonate Reservoirs", submitted to USPTO.

P22. Reyad A. Shawabkeh, Ibnelwaleed A. Hussein, H.M. Zaheer Aslam, Nadhir A. Al-Baghli, "Synthesis of mesoporous activated carbon from waste oil fly ash and its application for removal of H₂S from gas stream", Submitted to USPTO.

iv. Book Chapter

B1. Ibnelwaleed A. Hussein and S.M.J Zaidi "Thermal and Mechanical Properties of Polymeric Membranes: Literature Review" in S. M. J. Zaidi and T. Matsuura eds., Polymer membranes for fuel cells, Springer, New York, 2008.

v) Refereed Journals (published/in press/submitted/under preparation)

J1. H.K. Abdel Aal and **I.A. Hussein**, "Parametric Study for Saline Water Electrolysis: Part I- Hydrogen Production", *Int. J. Hydrogen Energy*, 18(6), 485 - 489, **1993**.

J2. H.K. Abdel Aal, S.M. Sultan, and **I.A. Hussein**, "Parametric Study for Saline Water Electrolysis: Part II - Chlorine Evolution, Selectivity, and Determination", *Int. J. Hydrogen Energy*, 18(7), 545-551, **1993**.

- J3.** H.K. Abdel Aal and **I.A. Hussein**, “Parametric Study for Saline Water Electrolysis: Part III – Precipitate Formation and Recovery of Magnesium Salts”, *Int. J. Hydrogen Energy*, 18(7), 553 - 556, **1993**.
- J4.** **Ibnelwaleed A. Hussein** and Michael C. Williams, ‘Rheological Evidence for High-Temperature Phase Transitions in Melts of High-Density Polyethylene’, *Macromolecular Rapid Communication*, 19, 323-325, **1998**.
- J5.** **Ibnelwaleed A. Hussein** and Michael C. Williams, ‘Anomalous Nonlinearities in Steady Shear Rheology of Polyethylene Melts’, *J. Non-Newtonian Fluid Mech.*, 86(1-2), 105-118, **1999**.
- J6.** **Ibnelwaleed A. Hussein** and Michael C. Williams, "DSC Evidence for Microstructure and Phase Transitions in Polyethylene Melts at High Temperatures", *Macromolecules*, 33, 520-522, **2000**.
- J7.** **Ibnelwaleed A. Hussein**, Kam Ho, Shivendra K. Goyal, Elizabeth Karbaszewski, Michael C. Williams, "Thermomechanical Degradation in the Preparation of Polyethylene Blends", *Polymer Degradation and Stability*, 68(3), 381-392, **2000**.
- J8.** **Ibnelwaleed A. Hussein** and Michael C. Williams, "Rheological Study of the Miscibility of LLDPE/LDPE Blends and the Influence of T_{mix} ", *Polymer Engineering & Science*, 41(4), 696-701, **2001**.
- J9.** Basel F. Abu-Sharkh and **Ibnelwaleed A. Hussein**, “MD Simulation of the Influence of Branch Content on Collapse and Conformation of LLDPE Chains Crystallizing from highly Dilute Solutions, *Polymer*, 43(23), 6333-6340, **2002**.
- J10.** Tayyab Hameed and **Ibnelwaleed A. Hussein**, “Rheological Study of the Influence of Mw and Comonomer Type on the Miscibility of m-LLDPE and LDPE, *Polymer*, 43(25), 6911-6929, **2002**.
- J11.** **Ibnelwaleed A. Hussein**, “Influence of Composition Distribution and Branch Content on the Miscibility of m-LLDPE and HDPE Blends: Rheological investigation”, *Macromolecules*, 36(6), 2024-2031. Erratum: 36(12), 4667, **2003**.
- J12.** **Ibnelwaleed A. Hussein**, Tayyab Hameed, Basel F. Abu Sharkh, Khaled Mezghani, “Miscibility of hexene-LLDPE and LDPE Blends: Influence of Branch Content and Composition Distribution”, *Polymer*, 44(16), 4665-4672, **2003**.
- J13.** **Ibnelwaleed A. Hussein** and Michael C. Williams, “Melt Flow Indexer Evidence of High-Temperature Transitions in Molten High-density Polyethylenes”, *J. Applied Polymer Science*, 91(2), 1309-1313, **2004**.
- J14.** Tayyab Hameed and **Ibnelwaleed A. Hussein**, “Effect of Short Chain Branching of LDPE on its Miscibility with Linear HDPE”, *Macromolecular Materials & Engineering*, 289(2), 198-203, **2004**.

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J110. Umer Mehmood, M. Zaheer Aslam, R. A. Shawabkeh, Ibnelwaleed A. Hussein, Waqar Ahmad, Adeem Ghaffar Rana, “Improvement in Photovoltaic Performance of Dye Sensitized Solar Cell Using Activated Carbon-TiO₂ Composites-Based Photoanode”, IEEE Journal of Photovoltaics, 6 (5), 7488191, 1191-1195, **2016**.

- J111.** Shifa M.R. Shaikh, M. S. Nasser, **Ibnelwaleed A. Hussein**, Abdelbaki Benamor, “Investigation of the effect of polyelectrolyte structure and type on the electrokinetics and flocculation behavior of bentonite dispersions”, Chemical Engineering Journal, Vol 311, 265-276, **2017**.
- J112.** G. R. Berdiyrov, M. Neek Amal, **I.A. Hussein**, F. M. Peeters, Large CO₂ uptake on a monolayer of CaO, Materials Chemistry A, Vol 5 (5), pp. 2110 – 2114, **2017**.
- J113.** Md. Anower Hossain, Rashad Al-Gaashani, Hicham Hamoudi, Mohammed J.F. Al-Marri, **Ibnelwaleed A. Hussein**, Abdelhak Belaidi, Belabbes A Merzougui, Fahhad H Alharbi, Nouar Tabet, “Controlled Growth of Cu₂O Thin Films by Electrodeposition Approach”, Materials Science in Semiconductor Processing, vol 63, 203-211, **2017**.
- J114.** Mohammed Eliebid, Mohamed Mahmoud, Reyad Shawabkeh, Salaheldin Elkatatny, **Ibnelwaleed A. Hussein**, “Effect of CO₂ adsorption on the Enhanced Natural Gas Recovery by CO₂ and Sequestration in Carbonate Reservoirs”, J. Natural Gas Science & Engineering, **in press**.
- J115.** Abdelhalim I.A. Mohamed, **Ibnelwaleed A. Hussein**, Abdullah S. Sultan, Ghaithan A. Al-Muntasheri, “Gelation of Emulsified Polyacrylamide / Polyethylenimine at High Temperature High Salinity Conditions: Rheological Investigation”, **under review**.
- J116.** Abdelhalim I.A. Mohamed, Abdullah S. Sultan, **Ibnelwaleed A. Hussein**, Ghaithan A. Al-Muntasheri, “Use of organoclay as a stabilizer for water-in-oil emulsions under HTHS conditions”, J. Petroleum Science & Engineering, **under review**.
- J117.** Muhammad Shahzad Kamal, Abdullah S. Sultan, and **Ibnelwaleed A. Hussein**, “Review on Surfactant Flooding: Phase Behavior, Retention, IFT and Field Applications”, Energy & Fuel, **under review**.
- J118.** Abdelhalim I.A. Mohamed, Ibnelwaleed A. Hussein, Abdullah S. Sultan, Ghaithan A. Al-Muntasheri, “Formation of Stable Water in Oil Emulsions under High Temperature High Salinity Conditions: Surfactant Selection”, J. of the American Oil Chemists’ Society, **under review**.
- J119.** Umer Mehmood, M. Irfan Malik, **Ibnelwaleed A. Hussein**, Amir Al-Ahmed, Fahad A. Al-Sulaiman, Khalil Harrabi, Novel oxadiazol based organic photosensitizer for dye-sensitized solar cell, Journal of Dyes and Pigments, **under review**.
- J120.** Khaled Zedan, Mohamed Mahmoud, **Ibnelwaleed A. Hussein**, “Stimulation of High Temperature Carbonate Gas Reservoirs using Seawater and Chelating Agents: Reaction Kinetics”, J. Natural Gas Science & Engineering, **under review**.
- J121.** Mustafa Nasser, Musaab Magzoub, **Ibnelwaleed Hussein**, Abdelbaki Benamor, Sagheer Onaizi, A.S. Sultan, M Mahmoud, “Effects of Sodium Carbonate Addition,

Heat and Agitation on Swelling and Rheological Behavior of Ca-Bentonite Colloidal Dispersions”, Colloids and Polymer Science, **under review**.

J122. Farrukh Shehzad, **Ibnelwaleed A. Hussein**, Muhammad Shahzad Kamal, Waqar Ahmad, Abdullah S. Sultan, Mustafa S. Nasser, “Polymeric Surfactants and Emerging alternatives used in the Demulsification of Produced Water: Review”, J. Polymer Reviews, **under review**.

J123. Shifa M.R. Shaikh, M. S. Nasser, **Ibnelwaleed A. Hussein**, Abdelbaki Benamor, Hazim Qiblawey, Sagheer A. Onaizi”, Influence of Polyelectrolytes and Other Polymer Complexes on the Flocculation and Rheological Behaviors of Clay Minerals: A Comprehensive Review”, Separation and Purification Technology, **under review**.

J124. Shifa M.R. Shaikh, Mustafa Nasser, **Ibnelwaleed Hussein**, Abdelbaki Benamor, Hazim Qiblawey, Sagheer A. Onaizi, “Influence of Polyelectrolyte Complexes on the Electrokinetics and Rheological Behaviors of Clay Minerals: A Comprehensive Review”, Advances in Colloid and Interface Science, **under review**.

J125. Mohammed K. Al-Arfaj, Abdullah S. Sultan, Abdulazeez Abdulraheem, **Ibnelwaleed A. Hussein**, “Molecular Simulation Study of Hydrated Illite-Smectite Mixed Layer”, J. of Molecular Modeling, **under review**.

J126. Mustafa Nasser; Fatemeh Khodadady; Ibnelwaleed Hussein, Muftah H. El-Naas, Abdelbaki Benamor; Hazim Qiblawey; Muneer M. Ba-Abbad, “The Influence of Superplasticizers on the Electrokinetics and Rheological Behaviors of Cement and Concrete Mixtures: A Comprehensive Review", Int. J. of Concrete Structures and Materials, **under review**.

J127. Zaheer Aslam, Waqar Ahmed, Ibnelwaleed Hussein, Ihsanullah Khan, Mohammad Parvez, Reyad Shawabkeh, “Adsorption kinetics and modeling of H₂S by chemically treated Oil Fly Ash”, Journal of Hazardous Materials, **under review**.

J128. Mostafizur Rahaman, **Ibnelwaleed A. Hussein**, Ali Aldalbahi, Mohammad Parvez, Joao Soares, “Synthesis of metallocene catalyzed ethylene 1, 7-octadiene copolymer: effect of copolymerization on polymer properties”, **under review**.

vi) Invited Presentations

- 1. Ibnelwaleed A. Hussein**, “Potential use of Nanomaterials as Polymer Processing aids, 2nd Kingdom Polymers and Plastics Forum 2014, Sofitel, Al Khobar, December 8-10, **2014**.
- 2. Ibnelwaleed A. Hussein**, “Water soluble polymers for upstream applications”, SPE Workshop on “Specialty Oilfield Chemicals I: development and applications”, Al Khobar, Saudi Arabia, December 14-15, **2014**.
- 3. Ibnelwaleed A. Hussein**, Invited Lecture, Product Quality Enhancement and Profitability: a partnership between KFUPM AND SAUDI KAYAN CO., Saudi Kayan Co., Sept 18, **2011**.

4. **Ibnelwaleed A. Hussein**, Invited Lecture, "Polymer Technology", Jubail Industrial College, March 14, **2011**.
5. Feasibility study of a Polymer Mixing Plant for Khartoum Water Corporation, Khartoum, Dec 9, **2010**.
6. **Ibnelwaleed A. Hussein**, "Sudan Petroleum Research Institute: Why and How?", Ministry of Energy & Mining, Sudan, Nov **2009**.
7. **Ibnelwaleed A. Hussein**, key note speaker, Rheology of Gelling Polymers Used in Water Shut-Off Treatments, Global Produced Water Management, Interactive Technology Workshop, Luxor, Egypt, December 1-4, **2008**.
8. **Ibnelwaleed A. Hussein**, Invited Lecture, "Fundamentals of Polymer Technology", Jubail Industrial College, May **2003**.
9. **Ibnelwaleed A. Hussein** and Michael C. Williams, "Influence of T_{mix} on Rheology and Miscibility of Polyethylene Blends", Award Presentation, Proceedings of Polyblends '99, Boucherville, Quebec, October 13-15, **1999**.

vii) Refereed Conference Presentations

1. Mohammed Eliebid, Mohamed Mahmoud, Reyad Shawabkeh, Salaheldin Elkatatny, **Ibnelwaleed A. Hussein**, "Effect of CO₂ Content on the Natural Gas Production from Tight Gas Sandstone Reservoirs". MEOS 2017. : SPE-183661-MS.
2. Mohammed Eliebid, Mohamed Mahmoud, Reyad Shawabkeh, Salaheldin Elkatatny, **Ibnelwaleed A. Hussein**, "Effect of CO₂ adsorption on the Enhanced Natural Gas Recovery by CO₂ and Sequestration in Carbonate Reservoirs", The 5th International Gas Processing Symposium, Qatar University, Doha, November 28-29, **2016**.
3. Shifa M.R. Shaikh, Mustafa Nasser, **Ibnelwaleed Hussein**, "Effect of polyacrylamide charge type and density on the degree of flocculation of bentonite dispersions", The 5th International Gas Processing Symposium, Qatar University, Doha, November 28-29, **2016**.
4. Shifa M.R. Shaikh, Mustafa Nasser, **Ibnelwaleed Hussein**, Abdelbaki Benamor, "Effect of Charge Type and Density of Polyacrylamide on the Electrokinetics Behaviour of Flocculated Bentonite Suspensions", AIChE Annual Meeting, Sa Francisco, US, November, 13-18, **2016**.
5. Mohmmmed Jaber Al-Marri, Umer Mehmood, **Ibnelwaleed A. Hussein**, "Enhancement of power conversion efficiency of dyesensitized solar cells using nanocomposites of carbonaceous materials with TiO₂", European Advanced Materials Congress, Stockholm, Sweden, August 23-25, **2016**.
6. Kamal, M.S., Matar, A.-A., Sultan, A.S., **Hussein, I.A.**, "Predicting interfacial tension using advanced meso-scale modelling technique", SPE Asia Pacific Enhanced Oil Recovery Conference, EORC 2015, Kuala Lumpur, Malaysia, August 2015, Code 118471.
7. Azad, M.S., Sultan, A.S., Nuaim, S.A., Mahmoud, M.A., **Hussein, I.A.**, "Could VES be a part of a hybrid option to recover heavy oil in complex

heavy oil reservoirs”, SPE Heavy Oil Conference Canada 2014; Calgary; Canada; 10 June 2014 through 12 June 2014; Code 108134.

8. Azad, M.S., Sultan, A.S., Nuaim, S.A., Mahmoud, M.A., **Hussein, I.A.**, “Rheological assessment of VES as an EOR fluid in carbonate reservoirs”, SPE EOR Conference at Oil and Gas West Asia 2014: Driving Integrated and Innovative EOR; Muscat; Oman; 31 March 2014 through 2 April 2014; Code 106794.
9. Muhammad Shahzad Kamal, **Ibnelwaleed A. Hussein**, Abdullah S. Sultan, Usamah A. Al-Mubaiyedh, “Rheological study of a novel hydrophobically associating polyacrylamide-surfactant system for enhanced oil recovery”, International conference of the polymer processing society, Cleveland, Ohio, USA, June, **2014**.
10. A.S. Sultan, M.S. Azad, **I.A. Hussein**, M.A. Mahmoud, SPE-169744-MS, SPE EOR Conference at Oil and Gas West Asia, 31 March-2 April, Muscat, 2014, DOI: <http://dx.doi.org/10.2118/169744-MS>.
11. Umer Mehmood, **Ibnelwaleed A. Hussein**, Shakeel Ahmed, Khalil Harrabi, “Density functional theory (DFT) study of the electronic structure properties of TiO₂ and N-doped TiO₂: A supreme metal oxide semiconductor for dye-sensitized solar cells (DSSCs)”, The 3rd Laboratory Technology conference & Exhibition, Bahrain, **2014**.
12. Al-Yaari, M, Al-Sarkhi, A., **Hussein, I**, Abbad, M., Chang, F., Abu-Sharkh, B., “Pressure drop reduction of stable water-in-oil emulsion flow: Role of water fraction and pipe diameter” IPTC 2013, Beijing, China, March 26-28, 2013; Code 98701.
13. M. Al-Yaari, A. Al-Sarkhi, **I.A. Hussein**, and B. Abu-Sarkh, "Influence of Drag Reducing Polymers on Water-in-Oil Emulsion Flow", *16th International Conference on Multiphase Production Technology*, BHR group, Cannes, France, June 12-14, **2013**.
14. Muhammad Shahzad Kamal, Abdullah S. Sultan, Ibnelwaleed A. Hussein, Ming Han, “Rheological Properties of Thermoviscosifying Polymers in High-Temperature High-Salinity Environment”, AICHE annual meeting 2013, San Francisco, CA, USA, November 3 – November 8, **2013**.
15. Muhammad Shahzad Kamal, Abdullah S.Sultan, Ibnelwaleed Ali Hussein, “Rheological Investigation of Interactions between Anionic Surfactant and Polyacrylamide for Chemical Flooding In Saudi Arabian

- Reservoirs”, Fourth student conference, Makkah, Saudi Arabia, April-May, **2013**.
16. Muhammad Shahzad Kamal, Abdullah S. Sultan, Ibnelwaleed Ali Hussein, “Review on Chemical EOR for high temperature/high salinity reservoir conditions”, International EOR & Heavy Oil Conference, Muscat, Oman, March **2013**.
 17. Muhammad Shahzad Kamal, Abdullah S.Sultan, Ibnelwaleed Ali Hussein, “Thermal Stability of fluorocarbon Surfactant and Interactions with polymers used For EOR”, Young Professional Technical Symposium, Dhahran, April **2013**.
 18. M. Al-Yaari, **I. A. Hussein**, A. Al-Sarkhi, M. Abbad, and F. Chang, "Pressure Drop Reduction of Stable Emulsions: Role of the Aqueous Phase Salinity", *SPE-SAS-618, 2013 Annual Technical Symposium & Exhibition*, Al-Khobar, Saudi Arabia, May 19-22, **2013**.
 19. M. Al-Yaari, A. Al-Sarkhi, **I. A. Hussein**, F. Chang, M. Abbad and B. Abu-Sarkh, "Pressure Drop Reduction of Stable Water-in-Oil Emulsion Flow: Role of Water Fraction and Pipe Diameter", *IPTC 16883, the 6th International Petroleum Technology Conference*, Beijing, China, 26–28 March **2013**.
 20. M. Al-Yaari, A. Al-Sarkhi, **I. A. Hussein**, F. Chang, M. Abbad and B. Abu-Sarkh, "Effect of Water Fraction on Surfactant Stabilized Water-in-Oil Emulsion Flow Characteristics", *SPE 164350, 18th Middle East Oil and Gas Show and Exhibition*, Manama, Bahrain, 10–13 March **2013**.
 21. Reyad Shawabkeh; Muhammad J. Khan; Abdulhadi A. Al-Juhani; Hamad I. Al-Abdul Wahhab; **Ibnelwaleed A. Hussein**, “Enhancement of Surface Properties of Waste Oil Fly Ash by Chemical Treatment”, Crete, Sept 12-14, 2012.
 22. Muhammad Shahzad Kamal, Abdullah S. Sultan, Usamah A. Al-Mubaiyedh, Ming Han and **Ibnelwaleed A. Hussein**, “Impact of salinity and temperature on the rheology of partially hydrolyzed polyacrylamide solutions”, 28th International conference of the polymer processing society, Pattaya, Thailand, December 2012.
 23. Ali Yaumi, Reyad A. Shawabkeh, and **Ibnelwaleed A. Hussien**, Chemisorption of Carbon Dioxide on Chemically Treated oil Fly Ash Surface: Experimental and kinetics modeling, AIChE Annual meeting, October 28 - November 2, 2012, Pittsburg.

24. Jimoh K. Adewole, Abdulhadi A. Al-Juhani, Usamah A. Al-Mubaiyedh, Anwar Ul-Hamid, **Ibnelwaleed A. Hussein**, Experimental studies and modeling of high pressure permeability of natural gas in polyethylene/nanoclay composite, 8th – 10th June, 2011 at the Technical University of Denmark, Lyngby, Denmark.
25. Msalli Al-Otaibi, Ghaithan Al-Muntasheri, **I.A. Hussein**, Frank F. Chang, “Experimental Evaluation of Viscoelastic Surfactant Acid Diversion for Carbonate Reservoirs: Parameters and Performance Analysis”, 17th SPE Middle East Oil & Gas Show and Conference (MEOS), 20-23 March 2011 in Manama, Bahrain, **SPE 141993**.
26. Msalli A. Al-Otaibi, Ghaithan A. Al-Muntasheri, Ibnelwaleed A. Hussein, Frank F. Chang “Experimental Evaluation of Viscoelastic Surfactant Acid Diversion for Carbonate Reservoirs: Parameters and Performance Analysis”, SPE 141993.
27. Ibnelwaleed Hussein, Sarfraz H. Abbasi “Shear & extensional rheology of c18-CNT/LDPE nanocomposites” ANTEC, PENG-11-2010-0095-R2.
28. **Ibnelwaleed A. Hussein**, Joao BP Soares, Mohammed A. Suleiman, “Thermal, Mechanical and Rheological Properties of homo HDPE synthesized at Different Polymerization Conditions”, 26th Polymer Processing Society Meeting, Banff, July 4-8, Canada.
29. Adesina A. Ayuba, Abdulhadi Al-Juhani, **Ibnelwaleed A. Hussein**, “Enhancing the processability of high density polyethylene using different nanoclays”, 26th Polymer Processing Society Meeting, Banff, July 4-8, Canada.
30. Sarfraz H. Abbasi, Muataz Ali Atieh, Abdulhadi A. Al-Juhani, Ibnelwaleed A. Hussein, “Thermal and Mechanical Properties of LDPE/CNT Nanocomposites: Impact of aspect ratio and surface modification”, 26th Polymer Processing Society Meeting, Banff, July 4-8, Canada.
31. Msalli Al-Otaibi, Ghaithan Al-Muntasheri, **I.A. Hussein**, “Laboratory Evaluation of Viscoelastic Surfactant Acid Diversion for Carbonate Reservoirs-Rheology of VES”. Well Stimulation & Enhanced Oil Recovery, Dalian, China, April 12-15, 2010.
32. **I.A. Hussein**, A.A. Al-Juhani, S.H. Abbasi, Impact of surface modification of carbon nanotubes on the rheology of polyethylene nanocomposites, Accepted for presentation at the 25th Polymer Processing Society Meeting, March 2008, Goa, India.
33. **Ibnelwaleed A. Hussein**, Mohammad Ashraful Islam, Alim Rizvi, Mohammed N. Akhtar, UV Degradation of metallocene LLDPE of different short Chain Branching, Accepted for poster presentation at the 25th Polymer Processing Society Meeting, March 2008, Goa, India.

34. S. M. Javaid Zaidi, **I.A. Hussein**, Selection and Characterization of Composite Polymeric Materials for PEM Fuel Cell Applications, Accepted for oral presentation at the 25th Polymer Processing Society Meeting, March 2008, Goa, India.
35. **Ibnelwaleed A. Hussein**; Mohammad A. Parvez; Joao BP Soares, "Fourier Transform Rheology of metallocene LLDPE with controlled long Chain Branching", XVth International Congress on Rheology, Monterey, California, August 2008.
36. N.M. Tukur, B.F. Abu Sharkh, E.Y. Osei-Twum, **I.A. Hussein**, "Impact of Short Chain branching on Molecular order in metallocene LLDPE melts: NMR, Light Scattering and MD simulation Study", EUROPOLYMER 2007 Conference, Gargnano, Italy, May 27-June 1, 2007.
37. M.A. Suleiman, **I.A. Hussein**, A. Meddad, B.F. Abu Sharkh, "Influence of Tacticity on the Melt Miscibility of PP/LDPE Blends", EUROPOLYMER 2007 Conference, Gargnano, Italy, May 27-June 1, 2007.
38. M.A. Kareem, B.F. Abu Sharkh, **I.A. Hussein**, "Influence of Tacticity on the Melt Miscibility of PP/LDPE Blends: MD Simulation Study", EUROPOLYMER 2007 Conference, Gargnano, Italy, May 27-June 1, 2007.
39. S.M.J. Zaidi, A.S. Sultan and **I.A. Hussein**, "Rheological Properties of Aqueous Solutions of Sulfonated Poly(ether ether ketone), Polyetherimide and Polysulfone", to be presented at the EUROPOLYMER 2007 Conference, Gargnano, Italy, May 27-June 1, 2007.
40. M.A. Suleiman, **I.A. Hussein**, "Influence of short chain branching on the Miscibility of PP/LDPE Blends", to be presented at the EUROPOLYMER 2007 Conference, Italy, May 27-June 1, 2007.
41. Md. Ashraful Islam, **Ibnelwaleed A. Hussein**, Halim H. Redhwi, Alim Rizvi, 'Influence of branch content on the degradation of metallocene LLDPE in natural weathering', Chemistry in Industry 2007, Bahrain.
42. **Ibnelwaleed A. Hussein**, "Rheological Investigation of the influence of Branch Content on the UV Degradation of metallocene LLDPE", Proceedings of the 22nd Annual conference of the Polymer Processing Society, Yamagata, Japan, July 2-6, 2006.
43. Ashraful Islam, **Ibnelwaleed A. Hussein**, "Influence of Branch Content, Comonomer Type and Composition Distribution on non-isothermal Crystallization Kinetics of Metallocene LLDPEs", Presented at the 21st Polymer Processing Society Meeting, June 2005, Germany.
44. **Ibnelwaleed A. Hussein**, Hamad I. Al-Abdul Wahhab, Mohammad H. Iqbal, Isam A. Mohammod, "Influence of Polymer Type and Structure on Polymer

- Modified Asphalt Concrete Mix”, Presented at the 21st Polymer Processing Society Meeting, June 2005, Germany.
45. Mohammad H. Iqbal, **Ibnelwaleed A. Hussein**, Hamad I. Al-Abdul Wahhab, Mohamed B. Amin, “Rheological Investigation of the Influence of Acrylate Polymers on the Modification of Asphalt”, Presented at the 21st Polymer Processing Society Meeting, June 2005, Germany.
 46. Ghaithan A. Al-Muntasheri, **Ibnelwaleed A. Hussein**, Hisham A. Nasr-El-Din, Mohamed B. Amin, “Viscoelastic Properties of an Organically x-linked Water Shutoff Polymeric Gel”, Presented at Kuwait Oil and Gas Conference and Exhibition 2005, March 7-9, 2005.
 47. Tayyab Hameed, **Ibnelwaleed A. Hussein**, Compatibilized m-LLDPE/LDPE Blends, Proceedings of the 6th International Conference and Exhibition on Chemistry in Industry, Bahrain, Sept. 27-29, 2004.
 48. **Ibnelwaleed A. Hussein**, Implications of melt Miscibility on Thermal and Mechanical Properties of metallocene LLDPE Blends with HDPE: Influence of Comonomer Type, presented at the 20th Meeting of the Polymer Processing Society, Akron, OH, June 20-24, 2004.
 49. Rehan A. Chaudry, **Ibnelwaleed A. Hussein**, Basel F. Abu Sharkh, “Influence of Molecular Parameters and Processing Conditions on the Rheology of Hydrogenated Nitrile Butadiene Rubbers”, presented at the 20th Meeting of the Polymer Processing Society, Akron, OH, June 20-24, 2004.
 50. **Ibnelwaleed A. Hussein**, Rehan A. Chaudhry, Basel F. Abu Sharkh, “Study of the Miscibility and Mechanical Properties of NBR/HNBR blends”, presented at the 20th Meeting of the Polymer Processing Society, Akron, OH, June 20-24, 2004.
 51. Adam M. Giri, Basel F. Abu Sharkh, **Ibnelwaleed A. Hussein**, Molecular Dynamics Simulation of the influence of branch content on the miscibility of HDPE in metallocene octene-LLDPE”, 6th Saudi Engineering Conference, Dhahran, Nov. 2002.
 52. Tayyab Hameed, Basel F. Abu Sharkh, **Ibnelwaleed A. Hussein**, Molecular Dynamics Simulation of the influence of branch content on the miscibility of LDPE in metallocene octene-LLDPE”, 6th Saudi Engineering Conference, Dhahran, Nov. 2002.
 53. **Ibnelwaleed A. Hussein** and Michael C. Williams, “Rheological Study of the influence of Branch Content on the Miscibility of octene m-LLDPE/LDPE and ZN-LLDPE/LDPE Blends”, 18th Polymer Processing Society meeting, Portugal, June 18-22, 2002.
 54. **Ibnelwaleed A. Hussein** and Michael C. Williams, “Rheological Study of the Miscibility of octene m-LLDPE and LDPE Blends: Influence of Mw and MWD, Polymer Processing Society, Anatalia, Turkey, October 22-24, 2001.

55. **Ibnelwaleed A. Hussein** and Michael C. Williams, "Rheological Study of the Miscibility of octene m-LLDPE and LDPE Blends: Influence of some molecular parameters, 3rd Pacific Rim Conference on Rheology, Vancouver, Canada, July 8-13, **2001**.
56. **Ibnelwaleed A. Hussein** and Michael C. Williams, Melt-Indexer Evidence of High Temperature Transitions in Molten High-Density Polyethylenes, 3rd Pacific Rim Conference on Rheology, Vancouver, Canada, July 8-13, **2001**.
57. Basel F. Abu-Sharkh, Nasir M. Tukur, **Ibnelwaleed A. Hussein**, Investigation of Structure-Conformation Relationships in molten m-Polyethylenes by Molecular Simulation Techniques, 3rd Pacific Rim Conference on Rheology, Vancouver, Canada, July 8-13, **2001**.
58. **Ibnelwaleed A. Hussein** and Michael C. Williams, "Effect of Molecular Parameters and Temperature on the Miscibility of Polyethylene Blends, presented at the 71th Annual meeting of the Society of Rheology, Madison, Wisconsin, Oct. 17-21, **1999**.
59. **Ibnelwaleed A. Hussein** and Michael C. Williams, "Thermomechanical Degradation in the Preparation of Polyethylene Blends", 71th Annual meeting of the Society of Rheology, Madison, Wisconsin, Oct. 17-21, **1999**.
60. **Ibnelwaleed A. Hussein** and Michael C. Williams, 'Temperature Dependence of Complex Viscosity in HDPE melts and Evidence of Microstructural Transitions', presented at the EURORHEO99 Conference, Sophia-Antipolis (Nice), France, May 3-7, **1999**.
61. **Ibnelwaleed A. Hussein** and Michael C. Williams, 'Evidence of Liquid Crystalline Rheology in Melts of Polyethylene', presented at the 70th Annual meeting of the Society of Rheology, Monterey, California, Oct. 4-8, **1998**.
62. **Ibnelwaleed A. Hussein** and Michael C. Williams, 'Anomalous Nonlinearities in Polyethylene Melts', *'Mechanics of Nonlinear Materials'* Conference, Banff, Alberta, May 13-16, **1998**.
63. **Ibnelwaleed A. Hussein** and Michael C. Williams, 'Rheology of Immiscible polyethylenes', 69th Annual Meeting of the Society of Rheology, Columbus, Ohio, USA, October 19-23, **1997**.
64. **I.A. Hussein**, Z. Fan, P. Choi and M.C. Williams, 'Phase Behavior of LDPE/LLDPE Blends Prepared at Optimum Blending Conditions', 47th Canadian Chemical Engineering Conference, Edmonton, AB, Canada, October 5-8, **1997**.
65. M. Mohammad, **I.A. Hussein** and M.C. Williams, 'Measuring Density-Temperature Behavior of Polymer Solids and Melts: Comparison of DSC and Densitometer Results for Polyethylenes', 47th Canadian Chemical Engineering Conference, Edmonton, AB, Canada, October **1997**.

66. Z. Fan, **I.A. Hussein**, P. Choi and M.C. Williams, 'D.S.C. Study of the Miscibility of LDPE/LLDPE Blends', *47th Canadian Chemical engineering Conference*, Edmonton, AB, Canada, October **1997**.

viii) Non-Refereed Conference Presentations

65. H.K. Abdel Aal and **I.A. Hussein**, The Precipitation of Mg and Ca Hydroxides in Sea Water Electrolysis, *Proceedings of the 10th Hydrogen Energy Conference*, Florida, **1994**.

66. H.K. Abdel Aal and **I.A. Hussein**, Electrolysis of Saline Water under Simulated Conditions of P.V. Solar Cell, *Proceedings of the 9th Hydrogen Energy Conference*, Paris, **1992**.

c) Supervision of Post Doctoral Fellows and Graduate Students

i. Post doctoral Fellows

1. Dr. Nagendiran Shanmugam, Utilization of sulfur and oil fly ash in Epoxy Composite pipes, 2012-2014, **Supervisor**.
2. Dr. Mostafizur Rahman, Polyolefin blends, 2013-2014, **Supervisor**.
3. Dr. M. Anwar Parvez, Modified asphalts, 2013-2014, **Co-Supervisor**.

ii. Ph.D. Theses, Completed

1. Rohul Amin, "Development and investigation of environmentally degradable plastic bags in Saudi Arabia", Jan 2010, Committee member.
2. Mr. Sarfraz Abbasi, "Impact of Surface Modification and Characteristics of Carbon Nano Tubes on the Properties of Polyethylene Nanocomposites", October 2010, **Thesis Advisor**.
3. Mr. Ayub Adesina, "Enhancing the Processability of Polyolefins by using organically modified clays", May 2011, **Thesis Advisor**.
4. Mohammed Abdullah Al-Yaari, "Pressure drop reduction of stable water-in-oil emulsion flow in pipes", June 2013, **Thesis Advisor**.
5. M.A. Parvez, "Treatment of waste oil fly ash for improvement of asphalt binder and asphalt concrete performance", May 2013, **Thesis Advisor**.
6. Othman Al Hamouz, "Synthesis and Applications of Linear and Cross-linked pH-Responsive Polycarbo-, Polyphospho- and PolySulfobetaines", Department of Chemistry, May 2013, Committee member.
7. Mohammed Al-Yaari, "Pressure Drop Reduction of Stable Water-in-Oil Emulsion Flow in Pipes", April 2013, **Thesis Advisor**.
7. Khalid El-Karsani, "Development of a New Cost-Effective Polymer Gel for Water Control in Oil and Gas Wells of Saudi Aramco", Nov. 2013, **Thesis Advisor**.

8. Shamsuddeen A. Haladu, "Synthesis of New Class of Linear and Cross-linked Polyzwitterion-Anions and their application as Corrosion Inhibitors and Adsorbents", Department of Chemistry, April 2014, Committee member.
9. Omer Y. Bakather, In Situ Copolymerization of Ethelen and Propylene in the presence of Titania nanofillers, Chemical Engineering department, April 2014, Committee member.
10. Muhammad Shahzad Kamal, "Evaluation of Different Surfactant-Polymer Systems for EOR Applications in High-Temperature High Salinity Saudi Carbonate Reservoirs", Nov. 2014, **Thesis Advisor**.
11. Abdulrauf Rasheed Adebayo, "Title: An Experimental Study of the Effect of Super Critical CO₂ on Petrophysical and Electrical Properties of Carbonate Rocks During CO₂ Sequestration", Department of Petroleum Engineering, Nov. 2014, **Committee Member**.
12. Umer Mehmood, "synthesis and characterization of dye sensitized materials for solar cell applications", April, 2015, **Thesis Advisor**.
13. M. H. Zaheer, Removal of H₂S from natural gas using modified oil fly ash, April 2015, **Thesis Co-Advisor**.
14. Badr Bageri, "Filter Cake Removal of Barite Water-based Mud", Petroleum Engineering Department, KFUPM, October 2016, Committee member.
15. Muhammad Dawood, Petroleum Engineering Department, KFUPM, December 2016, Committee member.

iii. M.S. Theses, Completed

1. Adam Giri, "Miscibility of butene-LLDPE in HDPE: Rheological and Molecular Simulation Study, January 2003, **Thesis Supervisor**.
2. Tayyab Hameed, "Rheological and MD Simulation study of the miscibility of metallocene LLDPE in LDPE", January 2003, **Thesis Supervisor**.
3. Esam A. Mahmoud, "Performance Modification of Saudi-Asphalt Binders using SABIC Polymers", January 2003, Thesis Committee Member.
4. Saidu M. Waziri, "Protein Partitioning in pH-Responsive Polymeric Amino Acid and Associating Polymers", May 2002, Thesis Committee Member.
5. Sarfraz H. Abbasi, "Preparation and Characterization of Polypropylene Composite with Palm Fiber", May 2003, Thesis Committee Member.
6. Mohammad Faheem, A study of Tensile and microhardness properties of LDPE and m-LLDPE blends, June 2003, Thesis Committee Member.
7. Chaudry, Rehan, "Investigation of Degradation of NBR and HNBR by Rheological, Light Scattering, and Molecular Modeling Techniques". Jan. 2004, **Co-Supervisor**.
8. Sharif F. Zaman, Diffusion and adsorption of hydrocarbons in molecular sieves by zero length column techniques", Jan. 2004, Thesis Committee Member,
9. M.H. Iqbal, "Effect of Polymer Type and Structure on Modification of Saudi Asphalt", May 2004, **Thesis Supervisor**.

10. M.S. Mozamder, "Influence of hydrophobe type and Content on Rheological and light scattering Properties of Amphiphilic Polyelectrolytes: Characterization and application in Coagulation/Flocculation", May 2004, Thesis Committee Member.
11. G.A. Al-Muntasheri, "Rheology of Gelling Polymers used in Reservoir Water-Shutoff Treatment", **Thesis Supervisor**.
12. M. Ashraful Islam, "Structure-Property Relationships in Metallocene LLDPE: Thermal, Mechanical and light scattering investigation, **Thesis Supervisor**.
13. Abdullah S Sultan, "Rheological and Thermal Characterization of PEEK Derivatives used for Fuel Cell Membranes", **Co-Supervisor**.
14. Salam Al-Shammari, "Strength and Durability characteristics of aluminum joints bonded by rubber-modified and aluminum filled epoxy adhesives", committee member.
15. Suleiman Awwal, "Miscibility and Mechanical Properties of PP/LDPE Blends", May 2007, **Thesis Supervisor**.
16. M.A. Karim, "Influence of Polymer Structure on the Morphology of Polyolefins and their Blends: MD Simulation Study", May 2007, **Thesis Supervisor**.
17. Rauf, MD Abdur, "Performance of Composite SPEEK Membranes for Medium Temperature Fuel Cells", Nov. 2007, Thesis Committee Member.
18. Al-Lowemi, Saad H., "Development and Characterization of Novel Organic Corrosion Inhibitors", Dec. 2007, Thesis Committee Member.
19. Parvez, Mohammad Anwar, "Rheology of Metallocene Polyethylenes with Controlled Long Chain Branching", **Thesis Supervisor**.
20. Junaid Sleem, "Sulfur Modification of Polymers for Asphalt Binder Applications", **Thesis Supervisor**.
21. Wajdi Al-Sadat, "Rheology of Viscoelastic Surfactants used in Wells' Acid Stimulation", **Thesis Supervisor**.
22. Masihullah Khan, Monte Carlo Simulations of ATFR Polymerization, April 2009, Committee member.
23. Jamal Khan, "UV Degradation of Polymers used in Organic PV Solar Cells", **Co-Advisor**.
24. M. Otaibi, "Laboratory Evaluation of Viscoelastic Surfactant Acid Diversion for Carbonate Reservoirs", **Thesis Supervisor**.
25. Jimoh Adewole, Transport Properties of gases in polyethylene/clay nanocomposites, March 2011, Committee member.
26. Saeed Al-Ghamdi, Synthesis and characterization of activated carbon prepared from Palm seeds and applications for 4-chlorophenol removal from aqueous solution, March 2011, Committee member.
27. Adel Al-Amoudi, "Study of polymer-surfactant interactions for chemical enhanced oil recovery in carbonate reservoirs", May 2014, Committee member.
28. Izhar Maliks, "Surfactant-polymer flooding for EOR in Carbonate reservoirs", May 2014, Committee member.

29. Mustapha Alao Animashaun, "Influence of nanoadditives on the rheology and thermal properties of viscoelastic surfactant used in matrix acidizing", Department of Petroleum Engineering, August 2014, Committee Member.
30. Musaab Magzoub, Petroleum Engineering, "Development of stable bentonite for drilling fluids formulations using local sources", Committee member, Nov. 2014
31. Madhar Sahib Azad, Petroleum Engineering, "Evaluation of novel viscoelastic systems for potential chemical EOR in carbonate reservoirs", Committee member, Nov. 2014.
32. Abdelhalim Mohammed, "Emulsified Polymeric Gel of PAM/PEI in Water Shut-off for Saudi Reservoirs", Petroleum Eng. Dept, **Co-Advisor**, Jan 2015.
33. Internal Examiner, MS Thesis of Ms. Nagla K Y Mohamed on "Influence of Temperature and Flow Rate on Flux Performance in Forward Osmosis", Environmental Engineering Program, College of Engineering, Qatar University.
34. Lionel Talley Fogang, "Study of the Breaker Mechanism of Viscoelastic Surfactant in Well Stimulation", Dec 2015, Petroleum Engineering Department, KFUPM, Committee member.
35. Ziad Sidaoui, "A Novel Approach to Formulation of Emulsified Acid Using Waste Oil and Nano-Particles", April 2016, Committee member.
36. Ahmed Hamza, "Sandstone Acidizing using Chelating Agents", Petroleum Eng. Dept., KFUPM, KFUPM, College of Petroleum & Geosciences, Committee member Committee Member, October 2016.
37. Marwan N. Mohammed, "Development of a New Fracturing Fluid System for Tight Reservoirs", KFUPM, College of Petroleum & Geosciences, Committee member, December 2016.

iv) Ph.D. Theses, In Progress

1. AL-Arfaj Mohammed Khalid, "A Theoretical and Experimental Investigation of Shale-Fluid Interactions", KFUPM, KFUPM, College of Petroleum & Geosciences, Committee Member.

iv) M.S Theses, In Progress

1. Khaleel Jawad Aladham, KFUPM, Civil Engineering Department, Jan 2017.

4. Services

a) Committees

i) Qatar University

1. Chairman, Technical Committee, The 5th International Gas Processing Symposium, Qatar University, November 28-29, 2016.
2. Chairman, Promotion Committee, Gas Processing Center, 2015-2017.
3. Member, Judging Committee, Graduate Students Poster Awards – Science & Engineering, formed by VP Graduate Studies & Scientific Research, April 2017.

ii) KFUPM University Standing Committees

1. Scientific Council, 2010-2013; Chairman of Scientific Research and Publications Sub-Committee.
2. University Housing Committee, 2005/2006.
3. Member, KFUPM Research Advisor Committee, headed by his Excellency the Rector.

iii) KFUPM University Ad hoc Committees

1. Guidelines for avoiding Duplication of equipment at RI, RI equipment selection committee, Ad Hoc Committee, 2005/2006.
2. Evaluation of e-learning at KFUPM, formed by Vice Rector for Academic Affairs, Ad Hoc Committee, March/April 2007, team member.
3. Evaluation of ERP system at KFUPM, formed by Dean of Scientific Research, Ad Hoc Committee Chairman, April 2007.
4. Member, Strategic Planning Functional Team for the College of Graduate Studies, Jan-June, 2011.

iv) KFUPM College of Engineering Committees

1. Engineering booklet committee, 2005/2006, Ad Hoc
2. Faculty of Engineering Annual Report Committee, Ad Hoc, 2005/2006.
3. Prince Mohammed Award Ad Hoc Committee, Ad Hoc 2004
4. Summer Special Assignment – Report Evaluation, Ad Hoc 2006.
5. College Strategic Planning Committee

v) Chemical Engineering Department Committees

• Graduate Advisor, 2007-2008

As the Chairman of the Graduate Committee, I was involved in recruitment of graduate students that involves screening and evaluation of applications, revision of curriculum, and looking after the welfare of our current students.

- IFP-KFUPM MS Program on Oil and Gas Surface Facilities: worked on a committee that developed the joint MS program with IFP (2011).
- Chairman, Faculty Recruitment Committee, 2012-todate.

• Membership of Department Committees

1. *Member* of the CHE graduate committee, 2000-todate
2. *Member* of ABET Ad hoc committee, 2000.
3. *Member* of the Laboratory and safety committee, 2000-2006.
4. *Member* of the Planning committee, 2000-2007.
5. *Member* of ABET Ad hoc committee, 2002.
6. *Member*, Promotion Committee, RI, 2005.

7. Chairman/member of task groups to review the contents and syllabus of different courses.
20. Member, Task Group for remodeling Cubicles in Bldg 1 Lab, 2007.
21. CHE department Library Liaison, 2007/2008.
22. Member, Curriculum Committee, 2007/2008.
23. Chairman, Establishment of Petrochemicals Journal Committee.
24. Chairman or committee member of many Faculty Promotion committees formed by the Vice Rector for Applied Research and the department.

b) Other Services

1. CHE Student Club Advisor, Chemical Engineering Department, KFUPM, Saudi Arabia, 2000/2001. The club received the 1st Prize in Arts and Science competition.
2. CHE Student Club Advisor, Chemical Engineering Department, KFUPM, Saudi Arabia, 2001/2002. The club receive the 2nd Prize in Arts and Science competition.
3. Member, Graduate Student Association Executive Committee, Department of Chemical Engineering, University of Alberta, Edmonton, Alberta, Canada, 1994/95.
4. Secretary of Finance, Michener Park Community Association, University of Alberta, Edmonton, Alberta, Canada, 1997/98.
5. President, Bahri Gezira Student Association, University of Khartoum, Sudan, 1984/85.
6. Secretary of Social Affairs, Bahri Gezira Student Association, University of Khartoum, Sudan, 1983/84.
7. Vice President, Chemical Engineering Department Students' Association, University of Khartoum, Sudan, 1981/82.