

*Curriculum Vitae***IQBAL AHMED, PH.D**

No26, Kampung Parit Warijo Lintang, Seri Medan, 83400, Batu Pahat, Johor, Malaysia

Tel. /O: +609-5492881 • Cell: +60-12-5614631 • Email: [riadr007@hotmail.com](mailto:riadr007@hotmail.com)

**PROFESSIONAL PROFILE**

- Accomplished technical executive (chemicals) career reflects 7 years' experience in operational leadership, textile/tanneries chemicals utilization, and new chemical products development according to the needs of industries.
- Six years innovative research and development experience with extensive chemical engineering skills and mechanical/electrical knowledge; accomplished the projects to strict deadlines within technically demanding environments and work well with individuals at all levels. Recognized as resource person, problem solver and creative leader.

**SIGNIFICANT ACHIEVEMENTS**

- Designed and developed new temperature control microwave closed heating system assisted with fluid sealed stirring device for materials synthesis.
- Developed fasted polymeric membrane fabrication process.
- Developed new solvent/melt spinning apparatus for synthetic yarn, hollow fiber and tubular membranes.
- Developed a reliable novel membrane testing module.
- New Gas Extruding process for commodities/engineered polymers
- Li-halides high performance ultrafiltration membrane
- Biocompatible Nylon 66 membrane for hemodialysis

**TEACHING INTEREST**

Thermodynamics., Heat Transfer., Fluid mechanic., Refining Technology., Membrane Technology., Science & Engineering Materials., Physical Chemistry

**RESEARCH INTEREST**

- Microwave/UV/Cathode rays assisted materials synthesis particularly polymers and uniform size nanoparticle and magnetic nanoparticles.
- New pressure/temperature gradient membrane process for the separation of fatty acids.
- Forward osmosis desalination and hybrid wastewater treatment processes.
- Hybrid conduction, convection and irradiation method for chemical synthesis & purification
- High surface area Li-halides super conductive polymer for rechargeable flexible battery cell
- Uniform size magnetic nanoparticles processing techniques & applications
- Carbon nanotubes/zeolite matrix membrane for greenhouse gases separation
- Development of High performance with High Surface Area Solar Cell
- Hybrid & self-sustained pyrolysis process design and module

- Future generation restoring processing techniques of waste polyolefin polymers
- Conversion of Green House Gases into Valuable Products by Catalytic Photosynthesis Techniques

#### ADVANCED TECHNICAL AND CHARACTERIZATION SKILLS

Brookfield Viscometers, Rheometers, Cloud Points, Phase Diagram, Gas Pycnometer, Tensiometers, Contact Angle, DSC, GC, TLC, HPLC, FTIR, XRD, NMR, SEM-EDX analysis, SPSS software, Microsoft Office professional and Visio.

No.	Qualification	Field	Institution/Country	Year
1.	PhD	Membrane Engineering: Fabrication to Application	University Technology Malaysia, Malaysia	2008/2009
Dissertation Title		High Performance Ultrafiltration Polyethersulfone Membrane Using Microwave Assisted Technique		
2.	MSc (Applied Chemistry)	Principals of Chemical Processing	University of Karachi, Pakistan	1997
Industrial Training & Project Report		Investigate the fluid friction losses of Pakistan Oil Refinery Ion Exchange processing plants		
3.	BSc	Physics, Chemistry, Math.	Sindh University, Pakistan	1993
4	BSc	Industrial Technology	Mehran University of Engineering & Technology, Pakistan.	1995

#### ACADEMIC/RESEARCH HONORS & AWARDS

Year	
2006	Partial Support Scholarship award from HEC, Pakistan
6/004-5/008	Research Scholarship Grant from MOSTI
2008	<b>GOLD MEDAL</b> , Industrial Art and Technology Exhibition ( <b>INATEX</b> ). A novel microwave synthesized PES/Li-halide membranes for UF purposes.
	<b>BRONZE MEDAL</b> , Industrial Art and Technology Exhibition ( <b>INATEX</b> ). Retrofitted microwave apparatus for synthesizing polymeric membranes.
2009	<b>SILVER MEDAL</b> , Malaysia Technology Expo ( <b>MTEX</b> ), Microwave method of synthesizing PES/Li-halide membrane using two solvent systems.
	<b>SILVER MEDAL</b> , Malaysia Technology Expo ( <b>MTEX</b> ), Retrofitted microwave apparatus for synthesizing polymeric membrane.
	<b>SILVER MEDAL</b> , International Invention & Technology Exhibition ( <b>ITEX</b> ), An economical automatic microwave assisted distilled water production
	<b>GOLD MEDAL</b> , International Invention & Technology Exhibition ( <b>ITEX</b> ), The potential of natural waste for production of environmental friendly biodegradable film.
	<b>SILVER MEDAL</b> , Seoul International Invention Fair ( <b>SIIF</b> ), Microwave synthesized PES/Li-halide UF membranes.
	<b>BRONZ MEDAL</b> , Malaysia Technology Expo ( <b>MTEX</b> ), A Novel Hybrid Induction Heating

	Distillation System For Ultra-Pure Water.
2010	<b>BRONZ MEDAL</b> , Bio Malaysia, Kenaf fibre reinforced polyester composites for the production of corrugated sheets for rural housing applications.
2011	<b>GOLD MEDAL, Creation, Innovation, Technology and Research Exposition (CITREx)</b> , Spinning apparatus for continuous hollow fiber membrane using pressure driven phenomenon.
	<b>GOLD MEDAL</b> , Creation, Innovation, Technology and Research Exposition (CITREx), Corrosion resistant roofing materials from polymer composites.
	<b>SILVER MEDAL</b> , Creation, Innovation, Technology and Research Exposition (CITREx), Low cost modified polyester centrifugal pump housing.
	<b>SILVER MEDAL</b> , Creation, Innovation, Technology and Research Exposition (CITREx), An economical and reliable membrane testing cell.
	<b>SILVER MEDAL</b> , Creation, Innovation, Technology and Research Exposition (CITREx), An integrated membrane contractor for the removal of hazardous gases and impurities for industrial wastewater.
	<b>SILVER MEDAL</b> , Creation, Innovation, Technology and Research Exposition (CITREx), Integrated modified microwave hybrid system for dissolution & extraction process.
	<b>BRONZE MEDAL</b> , Creation, Innovation, Technology and Research Exposition (CITREx), High performance diesel blend for internal combustion system.
	<b>GOLD MEDAL</b> , International Invention & Technology Exhibition (ITEX), Spinning apparatus for continuous hollow fiber membrane using pressure driven phenomenon.
	<b>GOLD MEDAL</b> , International Invention & Technology Exhibition (ITEX), Corrosion resistant roofing materials from polymer composites.
	<b>SILVER MEDAL</b> , PECIPTA, Development of plywood adhesive formulation using muf resin band natural fillers.
	<b>GOLD + PLATINUM SPECIAL</b> , British Invention Show (BIS). Spinning apparatus for continuous hollow fiber membrane using pressure driven phenomenon.
	<b>Gold + Double Gold</b> , British Invention Show (BIS). Ultrasonicated membrane anaerobic system (UMAS) for wastewater treatment
	<b>Bronze</b> , Seoul International Invention Fair (SIIF), Corrosion and heat resistant housing materials from green composites.
2012	<b>GOLD-2, and SILVER-5</b> ; Creation, Innovation, Technology and Research Exposition (CITREx 2012)
	<b>Bronze; ITEX</b>
	<b>Silver; ITEX</b>

<b>WORKING EXPERIENCE</b>		
<b>Industrial Experience</b>		
<b>Year</b>	<b>Designation</b>	<b>Company</b>
6/1997-3/2001	<i>Technical Sales Executive</i>	Chemi-Dyestuffs Industries (Pvt) Ltd. Pakistan
<b>Job Responsibilities:</b> involve actively managing all customer accounts promoting the textile dyes & auxiliaries' products and technical support capabilities.		
5/2001-11/2003	<i>Technical Marketing Manager:</i>	Ortho Chemicals Pakistan Pvt. Ltd. Pakistan, (Sister Concern Ortho Chemicals Australia Pty Ltd as Technical)
<b>Job Responsibilities:</b>		
<ul style="list-style-type: none"> <li>• Overall Sales and Marketing activities of the textile division of the company</li> <li>• To develop good and effective contacts with Managing director/Processing Manager or engineers/Applicators/Projects/Customers/Stockists Effective Team Handling</li> <li>• New business generation were also an element of the role</li> </ul>		
1/2003-6/2004	<i>Area Sales Manager</i>	Radiant Chemicals (Pvt) Ltd. Pakistan(Former ICI distributor Sindh and Balochistan Pakistan)
<b>Job Responsibilities:</b>		
<ul style="list-style-type: none"> <li>• Overall Sales and Marketing activities of the textile division of the company</li> <li>• To develop good and effective contacts with Managing director/ Processing Manager or engineers/Applicators/Textile processing /Projects/ Customers/ Stockists Effective Team Handling</li> <li>• New products development according to the desired needs of textile processing</li> </ul>		
<b>Academics/Research Experience</b>		
8/2008-12/2008	<b>Research Assistant</b>	Dept. of Bioprocess Engineering, University Technology Malaysia, Skudai, Johor, Malaysia.
12/2008-1/2012	<b>Sr. Lecturer</b>	Department of Gas Eng., Faculty of Chemical & Natural Resources Engineering University Malaysia Pahang, Lebuhraya Tun Razak, 26300 Kuantan, Pahang, Malaysia.
<b>Job responsibilities:</b>		
<ul style="list-style-type: none"> <li>• Teaching including tutorials and seminars, supervision of practical work and placements, monitoring on projects and other personally undertaken student enterprises;</li> <li>• Preparing course materials;</li> <li>• Researching and publishing both individual and collaborative, in priority areas established by the University;</li> <li>• Continuous assessment of students, setting and marking of examination papers including dissertations within established time-frames;</li> <li>• Participating in the administration of academic affairs at academic and university levels;</li> <li>• Contributing to national and regional development particularly in the area of specialization and through cooperation with governmental, intergovernmental, regional and non-governmental institutions and services.</li> </ul>		
01/2012-08/2012	<b>Research Fellow</b>	Dept. of Research & Innovation, University Malaysia Pahang, Lebuhraya Tun Razak, 26300 Kuantan, Pahang, Malaysia
<b>Main Duties and Responsibilities:</b>		
<ul style="list-style-type: none"> <li>• To independently undertake advanced research in the relevant discipline area using, or developing, the appropriate methods and/or techniques and managing associated staff and/or student contributions to the project.</li> </ul>		

<ul style="list-style-type: none"> <li>To lead the production of high-quality research reports and/or publications as required by the funding body or for dissemination to the wider academic community.</li> <li>To lead and promote activities designed to develop collaborative research with research colleagues and support staff internally and to actively develop appropriate external contacts and networks relevant future collaboration and funding opportunities.</li> <li>To lead bids for major research and/or consultancy projects.</li> <li>To lead relevant meetings associated with the research project or related activities.</li> <li>To undertake any other duties relevant to the programme of research &amp; development.</li> </ul>		
<i>08/2012-untill</i>	<i>Sr. Lecturer</i>	Chemical Engineering Department., Faculty of Engineering Universiti Teknologi PETRONAS Bandar Seri Iskandar, 31750 Tronoh, Perak Darul Ridzuan Malaysia
<b>Courses Taught &amp; Academic Evaluations at Undergraduate Level</b>		
<b>Year</b>	<b>Subjects</b>	<b>Evaluation Performance</b>
<i>2008/2009</i>	Heat Transfer, Engineering Mechanics*, Refining Technology*, and Chemical Reaction Eng. Lab. I, Plant Design Projects	Sem. I: 80.1% Sem. II: 81.8%
<i>2009/2010</i>	Engineering Society*, Science & Engineering Materials, Refining Technology*, and Chemical Eng. Lab. II., Chemical Eng. Lab. III, Plant Design Projects	Sem. I: 82.2% Sem. II: 82.7%
<i>2010/2011</i>	Chemical Engineering Thermodynamics*, Refining Technology*, Applied Physical Chemistry, Applied Organic Chemistry*, and Chemical Plant Utilities Laboratory, Plant Design Projects	Sem. I: 84.5%
*Subject coordinator		

<b>Projects Completed During PhD</b>		
During my doctoral studies, I have assigned for designing and developing various engineering projects for undergraduate and postgraduate taught course students		
<b>Year</b>	<b>Projects Name</b>	<b>Level</b>
2006-2008	High Performance CA/PES Ultrafiltration Membranes for Waste Water Treatment (Ms. Ho Wan Jxe, Malaysia) Production of Flat Sheet Dialysis Membrane and its Performance in Formic Acid Solvent ( Mr. Mark Francis Bakir, Malaysia) The Characterization & Comparison of PES Membranes (PES) and Modified PESMembranes (Mr. Mohd Redza Bin Abd Rahman, Malaysia) Novel Cellulose Acetate Dialysis Membranes using Monosodium Glutamate Additives (Ms Chan Mieow Kee, Malaysia) Cellulose Acetate/Chitosan Blend Membranes by Microwave Technique (Mr. Edziani, Malaysia) Cellulose Acetate/Polyethersulfone Blend with Low Molecular Weight Additive Hollow Fiber Ultrafiltration Membranes by Microwave Technique (Mr. Hizami, Malaysia)	<i>Under Graduate Final Year Projects:</i>

	An Economical and Environmentally Blend membranes by Microwave Technique (Mr. Akhlaque Ansari, India) Microwave Assisted Polyethersulfone Asymmetric Membrane with Low Molecular Weight Additive (Mr. Deepak Verma, India) Performance of Microwave Post Treated PES/DMF/LiBr Asymmetric Hollow Fiber Membrane (Mr. Omar, Libya)	<i>Post Graduate Final Year Projects:</i>
2008-2012	Supervised Plant Design Projects: 20 Students	Undergraduate
2008-2012	Supervised Final Year Undergraduate Research: 20 Students	Undergraduate

<b>Supervising Post-Doctoral/Post-Graduate Students</b>			
<b>Post-Doctoral Fellow</b>			
<b>Year</b>	<b>Candidate Name</b>	<b>Project Title</b>	<b>Status</b>
3/2010-10/2011	Dr. Muhammad Shakaib (Pakistan) E-mail: <a href="mailto:ms280674@yahoo.com">ms280674@yahoo.com</a>	<ul style="list-style-type: none"> <li>Development of Reliable Membrane Testing Cell</li> <li>Synthesis and Development of Novel Biocompatible Nylon 66 Dialysis Membrane</li> </ul>	Completed
<b>PhD Students</b>			
12/2008-....	Mr. Asmadi Bin Ali (Malaysia) E-mail: <a href="mailto:asmadi@umt.edu.my">asmadi@umt.edu.my</a>	Preparation and Interpretation of High Grade Ultrafiltration Membrane Using Polysulfone/Cellulose Butyrate with Low Molecular Weight Additives	Thesis writing
6/2009-.....	Miss Faridah Kormin (Malaysia) E-mail: <a href="mailto:faridah_k@hotmail.com">faridah_k@hotmail.com</a>	Development of Temperature control Microwave system for the Extraction of Bioactive Compounds using Epiphytic Fern	Completed
6/2010-.....	Mr. Arkan Hadi (Iraq) E-mail: <a href="mailto:arkanaldoury@yahoo.com">arkanaldoury@yahoo.com</a>	Development of Robust Solvents for Restoring Polyolefin Waste Materials	Thesis writing
6/2010-.....	Mr. Syed Farhan Hasany (Pakistan) E-mail: <a href="mailto:hasany@hotmail.com">hasany@hotmail.com</a>	Synthesizing the Vanadium/Iron oxide magnetic Nanoparticles for Cancer Therapy	Ongoing
6/2010-.....	Mr. Mohib Raza Kazmi (Pakistan) E-mail: <a href="mailto:mrkazmi@uok.edu.pk">mrkazmi@uok.edu.pk</a>	Synthesis of Hydrophilic Polyethylene for the Development of Hybrid Hollow Fiber Nanofiltration Membrane	Ongoing
<b>Master Students</b>			
8/2009-10/2011	Mr. Mohammad Afifi Faiz Bin Azha. (Malaysia)	Production of Bio-Oil from Bio-Mass through Direct Fired Pyrolysis	Completed
6/2009-	Miss. Nehan Ann. (Malaysia)	To Optimize the Dosage and Application Frequency of Fertilizer to Produce the Optimum Patchouli Oil Yield and Oil Quality	Thesis writing
8/2009-11/2011.	Mr. Muhammad Saad Khan. (Pakistan):	Influence of Hydrogen Peroxide On Diesel Fuel Performance	Completed
8/2011-	Mr. Mohammad Fairuz. (Malaysia)	Development of Self Sustained Integrated fast Pyrolysis System for Multiple Biomass	Ongoing

**Other Research/Academic activity:****Visiting Lecturer as Foreign Faculty Staff**

- i. Faculty of Mechanical & Manufacturing Engineering, NED University of Engineering & Technology, Karachi, Pakistan
- ii. International Center of Chemical & Biological Sciences (ICCBS) & Hussain Ibrahim Jamal Research Institute (HEJ), Karachi University Pakistan

**Lectures/Seminar Speaker**

- i. Dept. of Applied Chemistry University of Karachi, Pakistan
- ii. Excellence of Marine Biology, Karachi University, Pakistan
- iii. Faculty of Environment Engineering, Institute of Business Management, Karachi Pakistan
- iv. Ministry of Science and Technology. Govt. of Pakistan
- v. Dept. of Polymer Engineering and Textile Processing, National Textile University, Faisalabad, Pakistan.
- vi. Dept. of Petroleum Engineering, Faculty of Chemical Engineering, Mehran University of Engineering & Technology, Pakistan.
- vii. Faculty of Environment Engineering, Quaid-e-Awam University of Engineering, Nawab Shah Pakistan

**Invited for research collaboration and joint EU project under FP7 frame work****October 26-28, 2011**

Institute for Materials Research & Innovation, University of Bolton United Kingdom

Project: Future Generation Restoring Processing Technique for Waste Polyolefin Plastic.

Department of Chemical Engineering University College London

Project: High Surface Area Superconductive Flexible Battery Cell

**CONSULTANCY PROJECTS**

Project Title: Development of PVDF Membrane and Hybrid Integrated Hollow fiber Membrane Module for Water Desalination Process

Main project responsible: Assistant Prof. Dr. Ahmad Hussain ([ahmadutm@gmail.com](mailto:ahmadutm@gmail.com))

Department of Chemical and Materials Engineering, King Abdul Aziz University, Saudi Arabia

Project title: Development of continuous hollow fiber membrane processing system

Project Leader: Associate Prof. Dr. Shakiab Ahmed ([mshakaib@neduet.edu.pk](mailto:mshakaib@neduet.edu.pk))

Faculty of Mechanical & Manufacturing Engineering, NED University of Engineering & Technology, Karachi, Pakistan

**PUBLICATIONS****PATENTS**

1. Ani, I., **Iqbal, A** and Noordin, M. Y. (2008), Microwave Assisted Polymer Dissolution Apparatus for Membrane Production. **Malaysian Patent PI20080270**
2. Ani, I., **Iqbal, A** and Noordin, M. Y. (2008), A microwave irradiation method for producing polyethersulfone membrane. **Malaysian Patent. PI 2008 1128**
3. **Iqbal Ahmed.**, Farida Kormin. Rosli bin Mohd Yunus, (2009). An Economical Automatic Continuous Microwave Assisted Distilled Water Production System. **Malaysian Patent #. PI 20094768**
4. Novel hybrid microwave system for water purification Malaysian Patent Application No.: **PI 2010002229**
5. Norashikin Binti Mat Zain, Mohd Zamri bin Ibrahim, **Iqbal Ahmed**, (2009), Biodegradable Composition Based on Agricultural Waste and Method for Preparation Thereof, **Malaysian Patent #. PI 20093235**
6. **Iqbal, A.**, Rosli bin Mohd Yunus and Farida Kormin. (2010). Assembled and Disassembled Polymeric Fluid Sealed Stirring Device, **Malaysian Patent** Application No.: **PI 2010002228**
7. **Iqbal A.**, Rosli bin Mohd Yunus and Farida Kormin. (2010). Spinning apparatus for continuous hollow fiber membrane spinning process Using Pressure Driven Phenomenon. **Malaysian Patent** Application No.: **PI 2010002227**
8. **Iqbal Ahmed**, M. Shakaib, Rosli M. Yunus (2010). Membrane Filter Device. **Malaysian Patent** Application No.: **PI 2011004547**
9. A.H. Noor., A.H. Azhari., **Iqbal Ahmed**. A novel Ultrasonicated Membrane Anaerobi System (UMAS) for Wastewater Treatment. **Malaysian Patent** Application No.: **PI 2011004075**
10. **Iqbal, A.**, Rosli bin Mohd Yunus and Farida Kormin. (2010). Fabrication of integrated hybrid hollow fiber membrane module, Malaysian patent no. 2010002196
11. **Iqbal Ahmed**, M. Shakaib (**2011**), Method of Modified Polyamide Biocompatible Hemodialysis Membrane in progress Malaysian patent no.

**International Patents**

- Iqbal Ahmed**, Rosli M. Yunus (2012). A Method of Novel Reliable Membrane Filter Device. **US Patent Filled**
- Iqbal Ahmed**, M. Shakaib, Rosli M. Yunus (2012). Method of Modified Polyamide Biocompatible Hemodialysis Membrane., **US Patent** in progress.
- Iqbal A.**, and Rosli bin Mohd Yunus (2012). Spinning apparatus for continuous hollow fiber membrane spinning process Using Pressure Driven Phenomenon. **US Patent** in progress
- Iqbal A.**, and Rosli bin Mohd Yunus, Ahmad Hussain, Hani Sait (2012) A Method of Low Cost Modified Polymeric Centrifugal pump housing., **Saudian Patent** in progress
- Iqbal A.**, and Rosli bin Mohd Yunus, Ahmad Hussain, Hani Sait (2012) A Method Of Restoring Polyolefin Waste Materials By Solvents Technique And Thereof., **Saudian Patent** in progress

**Patents Pending**

- **Iqbal A.** (2011). Robust Solvent for the Dissolution of Waste Plastics, Filled for Malaysian patent.
- **Iqbal A.** Arkan Hadi, (2011). A New Method for the Production of Sulfuric Acid by Catalytic Photosynthesis Technique Using SO<sub>2</sub> gas, Filled for Malaysian patent.



- **Iqbal A.** (2011), Low Cost Modified Polymeric Centrifugal pump housing, Filled for Malaysian patent.
- **Iqbal Ahmed**, Faridah Kormin, Rosli bin Mohd Yunus (2011), Temperature control Integrated Microwave Hybrid System for Digestion and Extraction Process, Filled for Malaysian patent.
- **Iqbal Ahmed**, (2011), A Method of Hybrid Nanofiltration Membrane for The Removal of Hazardous Gases and Impurities from Industrial Wastewater Filled for Malaysian patent.
- **Iqbal Ahmed**, Zulkafli Bin Hassan, Muhammad Saad Khan, (2011), A Method of High Performance Diesel Blend for Internal Combustion System. Filled for Malaysian patent.
- **Iqbal Ahmed**, Asmadi Ali, Rosli M. Yunus (2011), A Method of Polysulfone/Cu-halides Membranes. Filled for Malaysian patent
- **Iqbal Ahmed**, Asmadi Ali, Rosli M. Yunus (2011), A Method of Polymer blend/Cu-halides Ultrafiltration Membranes. Filled for Malaysian patent
- **Iqbal Ahmed** (2011), A Method of Uniform Quality Polymer Solvent Spinning Hollow Fiber Method and process for producing the same. Filled for Malaysian patent
- **Iqbal Ahmed** (2011), An Economical Hollow Fiber Membrane Cartridge for Filtration and process for producing the same. Filled for Malaysian patent
- **Iqbal Ahmed** (2011), An Energy Efficient Fast Pyrolysis process and producing the same. Filled for Malaysian patent

#### International Journal Publications

1. Ani, I and **Iqbal, A.** (2007). Performance of cellulose acetate/polyethersulphone blend membrane prepared using microwave heating for palm oil mill effluent treatment. *Water Science Technology*. **56(8):169-77.**
2. Ani, I and **Iqbal, A.** (2008). Viscosity behavior of microwave-heated and conventionally heated poly(ether sulfone)/dimethylformamide/lithium bromide polymer solutions. *Journal of Applied Polymer Science*. **108 (1): 302-307.**
3. Ani, I and **Iqbal, A.** (2007), A Production of Polyethersulfone Asymmetric Membranes Using Mixture of Two Solvents and Lithium Chloride as Additive, *Jurnal Teknologi, 47(F) Keluaran Khas, Dis.: 25-34.*
4. Ani Idris, Chan Mieow Kee and **Iqbal Ahmed**, (2008). Effect of Monosodium Glutamate Additive on Performance Of Dialysis Membrane. *Journal of engineering Science and Technology*. **3(2): 172 - 179**
5. Ani, I and **Iqbal, A.** (2009). Novel High Performance Hollow Fiber Ultrafiltration Membranes Spun from LiBr Doped Solutions. *Desalination*, 249(2): 541-548.
6. **Iqbal, A.**, Ani, Nasrul Che Pa. (2009), Novel Method of Synthesizing Polyethersulfone Membrane Containing Two Solvents and Lithium Chloride Additive and its Performance, *Journal of Applied Polymer Science*, **115(3): 1428.**
7. Ani Idris, **Iqbal Ahmed**, Mazaitul Asmah Limin (2009), Influence of lithium halide additives on performance of polyethersulfone membranes and its application in the treatment of palm oil mill effluent. *Desalination*, **250(2):805-809.**
8. Faridah Kormin, **Iqbal Ahmed\***, Rosli bin Mohd Yunus, Zainal Abidin Mohd Yusof, The Potential of Modified Microwave Extraction System (Mmes) to Extract Bioactive Components from Ferns,

*International Journal of Engineering & Technology IJET-IJENS* Vol:10 No:02.

9. **Iqbal Ahmed**, Zainal Abidin Mohd Yusof\*, M.D.H, Beg. Fabrication of Polymer Based Mix Matrix Membrane - A Short Review, *International Journal of Basic & Applied Sciences IJBAS-IJENS* Vol:10 No:02.
10. **Iqbal Ahmed**; Idris Ani; Rizwan Rajput, High Performance Ultrafiltration Membranes Prepared by the Application of Modified Microwave Irradiation Technique, *Industrial & Engineering Chemistry Research* - 2011, 50, 2272–2283.
11. **Iqbal Ahmed**\*<sup>a</sup>, Nasrul Fikry Che Pa<sup>a</sup>, Mohd Ghazali Mohd Nawawi<sup>b</sup>, Wan Aizan Wan Abd Rahman<sup>c</sup>. Modified Polydimethylsiloxane/Polystyrene Blended IPN Membrane for Ethanol/Water Separation. *Journal of Applied Polymer Science.*, **122(2011): 2666-2679.**
12. **Iqbal Ahmed** \*, Ani Idris, and Rizwan Rajput, Microwave Synthesized Dual Solvent Dope Solution and Lithium Bromide Additives on Poly(ethersulfone) Membranes Performance. *Journal of Chemical Technology & Biotechnology*, **87(2012): 177-188**
13. M. Shakaib, S.M.F. Hasani, **Iqbal Ahmed**, Rosli M. Yunus, A CFD study on the effect of spacer orientation on temperature polarization in membrane distillation modules *Desalination*, **284(2012): 332–340**
14. M. Shakaib, S.M.F. Hasani, M. Ehtesham ul Haq, **Iqbal Ahmed**, Rosli M. Yunus, A CFD study of heat transfer through spacer channels of membrane distillation modules *World Academy of Science, Engineering and Technology*, **72: 2010**
15. Reddy Prasad, Muhammad syaddad Bin Zainol, **Iqbal Ahmed**, Dudduku Krishnaiah, (2011), Kinetic Study of Microwave Assisted Extraction of Hypoglycemic Active Compound from Ceriops Decandra sp. Leaves Using Ethanol: Comparison with Soxhlet Extraction. *Journal of Applied Sciences* 11(13): 2364-2369, 2011.
16. Reddy Prasad\*, F.M. Thorik , Maksudur R Khan , **Iqbal Ahmed** and Rosli bin Mohd Yunus Ultrasonic-Assisted Extraction of Triterpenoid Saponins from Mangrove Leaves. Submitted revised paper with minor correction. *Asia-Pacific Journal of Chemical Engineering*.
17. **Iqbal Ahmed**\*, Faridah Kormin, Ani Idris, Rosli bin Mohd Yunus, Preparation of PES Ultrafiltration Membrane Using Novel Modified Microwave Casting Solution Technique, *Journal of Applied Sciences* 09 (2009): 3-4.
18. Muhammad Shakaib, **Iqbal Ahmed**, Rosli bin Mohd Yunus, Effect of Monosodium Glutamate Additive on Characteristics of Polyamide Dope Solutions. *Journal of Macromolecular Science, Part B.*, **51(1): 2049-2063. 2012**
19. **Iqbal Ahmed** , M. Shakaib, S.M.F. Hasani, Ahmad Hussain, Rosli M. Yunus, Computational modeling for visualization of flow patterns in a membrane testing device., *Separation and Purification Technology* 90 (2012) 1–9.
20. Nasrul Fikry Che Pa, **Iqbal Ahmed**\*, Mohd Ghazali Mohd Nawawi, Wan Aizan Wan Abd Rahman, Influence of Polystyrene on PDMS IPN Blend Membrane Performance., in *Separation Science and Technology.*, 47: 562–576, 2012.
21. M. Shakaib., **Iqbal Ahmed.**, Rosli M. Yunus., Ani Idris., Morphology and Thermal Characteristics of Polyamide/Monosodium Glutamate., International., *Journal of Polymeric Materials*. Accepted (2011) & **Article in Press (DOI:10.1080/00914037.2012.670828).**
22. M. Shakaib, **Iqbal Ahmed**, Rosli M. Yunus, Ani Idris, Influence of monosodium glutamate additive on morphology and permeability characteristics of polyamide dialysis membrane, *J. Appl. Poly. Sci.* (DOI:

**10.1002/app.38377).**

23. Nur Diana Mohd Noor, Ani Idris, **Iqbal Ahmed**, Influence of Sodium Bromide Additive on Polyethersulfone (PES) Ultrafiltration Membrane Prepared by Microwave Irradiation. *Journal of Applied Polymer Science*, Accepted (2012), & now at Online DOI: **10.1002/app.38319**.
24. Ghazi F. Najmuldeen, Ghassan Jasim Hadi, Arkan Jasim Hadi\*, Iqbal Ahmed. Gas-Liquid Equilibrium Prediction of Ternary System (CO<sub>2</sub>-Ethanol-Water) at Moderate Pressures and Different Temperatures Using SRK-EOS. *Physical Chemistry* 2012, 2(1): 1-5.
25. AJ Hadi, GF Najmuldeen, **Iqbal Ahmed**, Polyolefins Waste Materials Reconditioning Using Dissolution/Reprecipitation Method., *APCBEE Procedia*, 3 ( 2012 ) 281 – 286
26. AJ Hadi, GF Najmuldeen, **Iqbal Ahmed.**, Potential solvent for reconditioning polyolefin waste materials., *Journal of Polymer Engineering.*, 2012; 32: 585–591.
27. AJ Hadi, GF Najmuldeen, **Iqbal Ahmed**, Reconditioning Process Of Waste Low Density Polyethylene Using New Technique., *Journal of Purity, Utility Reaction and Environment.*, **8(2012): 400-410**.
28. AJ Hadi, GF Najmuldeen, **Iqbal Ahmed**, Reconditioning Process Of Waste Low Density Polyethylene Using New Technique., Quality restoration of waste polyolefin plastic material through the dissolution-reprecipitation technique. *Chemical Industry and Chemical Engineering Quarterly.*, **00(2012): 119**.
29. AJ Hadi, GF Najmuldeen, **Iqbal Ahmed.**, Gas liquid equilibrium prediction of system (CO<sub>2</sub>-aqueous ethanol) at moderate pressure and different temperatures using PR-EOS., *Chemical Industry and Chemical Engineering Quarterly.*, **00(2012): 67**.
30. Muhammad Shakaib, **Iqbal Ahmed**, Rosli bin Mohd Yunus, Rheological and Thermodynamics properties of PA/MSG Polymer Solution Accepted (2012) in *Journal of Applied Polymer Science*.

### Book Chapters

31. Ani Idris & **Iqbal Ahmed**, Membrane Technologies and Applications, Chapter 2., Taylor & Francis, USA, (2011), Cat. #: K10293, ISBN: 9781439805268.
32. Ani Idris & **Iqbal Ahmed**, Ultrafiltration Membranes for Palm Oil Mill Effluent Treatment, Environmental concerns in the 21st Century, Chapter 17, 2010, Springer

### Book

33. Abdurahman, H. Nour; Azhari, H. Nour; **Iqbal Ahmed**. Ultrasonicated Membrane Anaerobi System (UMAS) for POME Treatment. LAP Lambert Academic Publishing, 2011 (ISBN: 978-3-8465-1562-4).
34. Iqbal Ahmed and Ani Idris. Microwave Assisted Preparation Technique of Polymeric Membrane. In Progress.

### International & National Conference Proceedings

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2. Ani, I, Norashikin, M. Z, Iqbal, A. (Feb. 2006). The role of different molecular weight polyethylene glycol (PEG) additives on PES ultrafiltration membranes. National Seminar on Science and its Application in Industry (SSASI), Malacca Malaysia.
3. Ani Idris\* and Iqbal Ahmad, (2006) Preparation of polysulfone ultrafiltration membrane via microwave

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4. Ani Idris and Iqbal Ahmad (2007). Cellulose acetate–polyethersulfone (CA-PS) blend ultrafiltration membranes for palm oil mill effluent treatment. International Conference on Environment: Survival and Sustainability, Turkey.
5. Ani Idris, Iqbal Ahmad (2007). Performance cellulose acetate-polyethersulfone (CA-PS) blend membranes prepared using microwave heating for palm oil mill effluent treatment. Int. Conference on Water Management and Technology Applications in Developing Countries, Kuala Lumpur.
6. Salah Ramadan, Iqbal Ahmed, Ariffin Abu-Hassan\* (2007). Chemical Pre-Treatment in Soap Industry Wastewater by Flocculation Process. 2nd International Conference Environmentally Sustainable Development, Abbottabad, Pakistan.
7. Iqbal Ahmed and Ani Idris\* (2007). A Novel method for fabrication of cellulose acetate blends membrane. CHEMRAWN XII., South Africa, (December 2-5, 2007).
8. Ani Idris, Iqbal Ahmed, Ansari Akhlaque Ah. Nihal Ah. (2008). Influence of Lithium Fluoride Additive on Polyethersulfone Membranes. 14th Regional Symposium on Chemical Engineering 2007. 4-5 December, Bali Indonesia.
9. Iqbal Ahmed and Ani Idris. (2007). Environmental Friendly Novel and Quick Method for Membranes Production. POGEE CONFERENCE 2007, Karachi, Pakistan, 18th-21st May, 2007.
10. Ani Idris and Iqbal Ahmad. (2007). The Effect of Lithium halide on Polyethersulfone Membranes. Poster presentation. 10th EuAs C2S. January 7-11, 2008, Manila, Philippines.
11. Ani Idris, Iqbal Ahmad, Mark Francis Bakir. (2007). Influence of Formic Acid/PEG Ratio on Cellulose Acetate Dialysis Membrane Formation and Urea Clearance. SOMCHE, UTiM. Shah Alam, Selangor, Malaysia.
12. Iqbal Ahmed, Ani Idris, Zubair Ahmed Memon. (2008). New Environmental and Economical Production Technique of Ultrafiltration membranes. First International Conference on Engineering Management 2008. March 4-5, 2008. Mehran University Jamshoro, Sindh, Pakistan.
13. Ani Idris\* and, Iqbal Ahmed. (2008). Novel High Performance Hollow Fiber Ultrafiltration Membranes. BioManufacturing Asia 2008, 15-17 April 2008, Kuala Lumpur Malaysia.
14. Ani Idris, Chan Mieow Kee, Iqbal Ahmed. Influences of MSG on Performance of Dialysis Membrane. BioManufacturing Asia 2008, 15-17 April 2008, Kuala Lumpur Malaysia, Kuala Lumpur, Malaysia.
15. Ani Idris and Iqbal Ahmed\*. (2008). Microwave Assisted Hollow Fiber Ultrafiltration Membranes Using Lithium Halide Additive. 6th Regional Symposium on Membrane Science and Technology 2008. 13th - 14th August, 2008. Bangkok, Thailand.
16. Ani Idris\* and Iqbal Ahmed. (2008). Fabrication of Polyethersulfone Ultrafiltration membrane using Microwave Technique. ChemEng08-28-30 October 2008, Birmingham, United Kingdom.
17. Ani Idris and Iqbal Ahmed. (2008). Influence of Lithium Chloride, Lithium Bromide and Lithium Fluoride Additives on Performance of Polyethersulfone Membranes and its Application in the Treatment of Palm

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18. Ani Idris 1, Chan Mieow Kee1, Iqbal Ahmed. (2008). Effect of Monosodium Glutamate Additives on Performance of Flat Sheet Dialysis Membrane. SOMCHE, 2008 UPM, Kuala Lumpur.
  19. Iqbal Ahmed\*, Faridah Kormin, Rosli bin Mohd Yunus and Ahmad Hussain. (2009). Novel Modified Microwave System for the Extraction of Essential Oil and Bioactive Components. POGEE 09, Karachi, Pakistan.
  20. Iqbal Ahmed\*, Faridah Kormin, Ani Idrisb, Rosli bin Mohd Yunus, Zulkafli bin Hassan. (2009). Preparation of PES Ultrafiltration Membrane Using Novel Modified Microwave Casting Solution Technique. SOMChE-2009, Malaysia.
  21. I. Ahmed\*, A. Idris, R. M. Yunus, M. D. H. Beg and S.A. Isaka. (2009). The Effect of Microwave Assisted Dissolution Technique on the Rheological Properties of Membrane Dope Solution. The 7th International Conference on Membrane. Science & Techonology (MST2009), 13 – 15 May 2009 Kuala Lumpur, Malaysia.
  22. Iqbal Ahmed\*; Ani Idris; Yunus Rosli. A Benchmark Study of Modified Microwave Novel system for Engineered Polymer Dissolution Process. Poster Presentation. ICMAT, Singapore, 28th Jun – 3rd Jul 2009.
  23. Iqbal Ahmed\*, Faridah Kormina Ani Idris , Zulkafli bin Hassan. (2009). A Novel and Economical Method for fabrication of Polyethersulfone Ultrafiltration membrane. Environmental Science and Technology Conference (ESTEC2009) Kuala Terengganu Malaysia, December 7-8.
  24. Faridah Kormin, Iqbal Ahmed\*, Ani Idris, Rosli bin Mohd Yunus, Zulkafli bin Hassan. (2009). An Economical Novel Method of Bioethanol Production by Food Waste. NSFT 2009. Malacca Malaysia.
  25. Iqbal Ahmed\*, Ani Idris and Shahrudin Kormin and Anwar Ali Khan (2009). Preparation of Microwave Assisted CA/PES Dope Solution Blend Membrane for Waste Water Treatment. III World Aqua Congress, 2-4 December New Delhi, India.
  26. M.A.Faiz, A. Iqbal\*, H. Zulkafli. (2009). A Review of Mixed Matrix Membranes in Gas Separation. National Conference of Post Graduate Research, 1st October, University Malaysia Pahang, Kuantan, Malaysia.
  27. Muhammad Saad Khan, Iqbal Ahmed\*, Zulkafli Bin Hassan (2009). Influence of Hydrogen Peroxide on Liquefied Petroleum Gas (LPG) Performance National Conference of Post Gradutae Research, 1st October, University Malaysia Pahang, Kuantan, Malaysia.
  28. Faridah Kormin, Iqbal Ahmed\*, Rosli bin Mohd Yunus. (2009). Production of Bioethanol Using Catalytic Hydrolysis of Epiphytic Fern Biomass. ICEBP 2009, 25-26th Nov. Bandung, Indonesia.
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32. Iqbal Ahmed\*, Ani Idris, M.D.H Beg, Shahrudin Kormin. Influence of Acetone on the Performance of Polyethersulfone Membranes, Proceedings of the International Conference on Mechanical Engineering 2009. (ICME2009) 26- 28 December 2009, Dhaka, Bangladesh.
  33. Iqbal Ahmed\*, Ani Idris and Shahrudin Kormin, The Effect of Lithium Fluoride on Polyethersulfone Ultrafiltration Membranes, The 1st IWA Malaysia Young Water Professionals Conference, 1- 4th March 2010, Kuala Lumpur, Malaysia.
  34. Iqbal Ahmed\* and Faridah Kormina, Production of an Economical Microwave assisted Distilled Water System, International Conference on Fundamental & Applied Sciences 2010 (ICFAS2010), Malaysia.
  35. Faridah Kormin, Iqbal Ahmed\*, Rosli bin Mohd Yunus, The Potential of Modified Microwave Extraction System (MMES) To Extract Bioactive Components from Wild Ferns, International Conference on Process Engineering and Advanced Materials 2010 (ICPEAM2010), Malaysia.
  36. Iqbal Ahmed\*, Muhammad Saad Khan, Zulkafli Bin Hassan, Influence of Hydrogen Peroxide On Diesel Combustion Performance, POGEE, 2010.
  37. Faridah Kormin, Iqbal Ahmed\*, Rosli bin Mohd Yunus, Hybrid Microwave System for Extraction of Essential Oil and Bioethanol Production, National Postgraduate Seminar 2010, Malaysia.
  38. I. Ahmed\*, A. Idris, M. Shakaib, R. Rajput, D.M. R. Prasad (2010). Influence of Microwave Synthesis Dissolution Technique on the Kinetics Properties of Polymer Dope Solution. 2nd Conference on Chemical Engineering and Advanced Materials (CEAM), VIRTUAL FORUM 2010, Section: B2: Rheology.
  39. Ani Idris, M.A. Limin, M.R.Jusoh and I. Ahmed (2010). The Use of PES/LiBr/DMF Hollow Fiber Membranes for Textile Water Treatment. The 1st IWA Malaysia Young Water Professionals Conference. 1- 4 March 2010.
  40. A. Ali, I. Ahmed, R. M. Yunus (2010), Effect of an Inorganic Additive on the Hydrophilicity Property of Polysulfone Ultrafiltration Membranes. 23rd MALAYSIAN SYMPOSIUM ON ANALYTICAL SCIENCES (SKAM-23) 4 – 6 October 2010; Permai Inn, Kuala Terengganu, Terengganu
  41. M. Shakaib, Iqbal Ahmed, Rosli M. Yunus, Effect of permeation velocity on flow behavior and pressure drop in feed channels of membranes, Proceedings of ACSSSR2011 - ASEAN Conference on Scientific and Social Science Research 2011.
  42. M. Shakaib, Iqbal Ahmed, Rosli M. Yunus, CFD modeling for fluid flow and heat transfer in membrane distillation, Proceedings of 2nd International Conference on Environmental Science and Technology, Singapore, Feb 2011.
  43. M. Shakaib, M. Ehtesham ul Haq, Iqbal Ahmed, Rosli M. Yunus, Modeling the effect of spacer orientation on heat transfer in membrane distillation, International Conference on Chemical and Environmental Engineering, Singapore, Dec 2010.
  44. M. Shakaib, Iqbal Ahmed, Rosli M. Yunus, Influence of additive concentration in polymer solution on dope characteristics and membrane tensile strengths, Proceedings of National Conference in Mechanical

Engineering, Pekan, Malaysia, Dec 2010.

45. Mohib Reza Kazimi, Iqbad Ahmed, Che Ku Mohammad Faizal, A short review of hydrophilic Surface Modification Methods for Low Density Poly Ethylene, International Conference on Advanced Manufacturing, 2011 (ICAM2011).
46. M. Z. M. Noor., \*Iqbal Ahmed and A. B. A. Malek. A Preparation of Nitric Acid From Nitrogen Dioxides Using Photocatalytic Method. 3rd CUTSE International 2011, 8-9 November 2011.
47. M. R. Kazimi<sup>1</sup>, \*Iqbad Ahmed<sup>2</sup>, Che Ku Mohammad Faizal<sup>3</sup>, S. F. Hasany., A comparative study of Poly Ethylene Hydrophilic Surface Modification and Characterization Techniques. SOMChE-ICCEIB 2011. 28 Nov- 1 Dec 2011.
48. \*Iqbad Ahmed<sup>2</sup>, S. F. Hasany., A. R. H. Noor., Comparative study of the Preparation Techniques of Iron Oxide Magnetic Nanoparticles – A Review. SOMChE-ICCEIB 2011. 28-29 Nov-2011.
49. Arkan J. Hadi<sup>1</sup>, Iqbal Ahmed\* , and Ghazi Faisal Najmuldeen., Potential of Solvent (C7-C12) for Reconditioning Polyolefin Waste Materials. hird International Multicomponent Polymer Conference (IMPC). 23-25 March 2012, Kottayam, Kerala, India.

#### Submitted Journals (Mar-Apr. 2012)

- Iqbal Ahmed, Ani Idris and Rizwan Rajput, Influence of Microwave Synthesized Polyethersulfone dope solution on Ultrafiltration Asymmetric Membranes. Industrial & Engineering Chemistry Research.
- Iqbal Ahmed, Ani Idris, Rizwan Rajput and Rosli Mohd Yunus, Optimization of pulsed microwave heating on PES/DMF Dope Solution-I. Tetrahedron
- Iqbal Ahmed, Ani Idris and Rizwan Rajput. Rheological and Solubility Properties of Microwave Assisted PES/LiF Dope Solution-I. AIChE
- Iqbal Ahmed, Ani Idris and Rizwan Rajput. Influence of Microwave Synthesis on PES/LiCl Dope Solution. Journal of Applied Polymer Science.
- Iqbal Ahmed and Ani Idris., Novel Microwave Synthesis PES/LiF Casting Solution Technique for Fabrication of Ultrafiltration Membrane. Journal of Membrane Science.
- Iqbal Ahmed, Ani Idris and Farida Kormin. Dielectric Properties of PES/DMF/LiF Polymer Solution. Tetrahedron
- Iqbal Ahmed and Farida Kormin, Performance of Retrofitted Microwave Closed Heating System for Thermoplastic Polymer Dissolution - V. Industrial & Engineering Chemistry Research.
- Iqbal Ahmed and Ani Idris., Novel Microwave Synthesis PES/LiCl Casting Solution Technique for Fabrication of Ultrafiltration Membrane. Journal of Membrane Science.
- Iqbal Ahmed\*<sup>a</sup>, Nasrul Fikry Che Paa, Mohd Ghazali Mohd Nawawib, Wan Aizan Wan Abd Rahmanc. (2011). Mechanical Properties of Modified Polydimethylsiloxane/Polystyrene Blended IPN Membrane, European Polymer Journal.
- Iqbal Ahmed\*<sup>a</sup>, Nasrul Fikry Che Paa, Mohd Ghazali Mohd Nawawib, Wan Aizan Wan Abd Rahmanc. (2011). Surface Characterization of Polydimethylsiloxane/Polystyrene Blended IPN Membrane, Journal of

Applied Polymer Science.

- Kamisah Kormin, Iqbal Ahmed, Ahmed Othman., Building the researcher's capability model from the perspective of opportunity recognition theory: Towards the accomplishment of university technology commercialization in Malaysia. Journal of R&D Management.

#### Evaluation of Refereed Journals

- *Journal of Applied Polymer Science (John Wiley & Sons)*
- *Journal of Chemical Technology & Biotechnology*
- *Journal of Membrane Science (Elsevier)*
- *Desalination (Elsevier)*
- *Current Nanoscience (Bentham Science Publisher)*

#### Information on involvement in professional bodies for the past 3 years:

No.	Name	Duration of membership		Type of membership
		Start	End	
1.	Higher Education Commission Pakistan (HEC)	–	–	Life time Membership
2.	American Chemical Society	Applied for membership		Yearly
3.	European Membrane Society (EMS)	Jun 2010	Jul2012	Associate Member
	North American Membrane Society (NAMS)	Applied for membership		Membrane Quarterly
4.	Australian Membrane Society	Applied for membership		Individual
5.	Pakistan Chemical Society (PCS)	Applied for membership		Fellow
6.	ICheME	Applied for membership		Associate Member
7.	Canadian Engineering Council	Applied for membership		Associate Member

#### RESEARCH GRANTS

No.	Title	Year	Result	Funding
1.	An Economical Automatic Continuous Microwave Assisted Distilled Water Production (ACMDW)	May 2009- Apr 2011	RM 31,000 Completed	UMP
2.	A Novel Method of Fully Continuous Ultrasonic Assisted Hollow Fiber Membrane Spinning Process	May 2009- Apr. 2011	RM 33,000 Completed	UMP
3.	High Intensity Ultrasound-Assisted Extraction of Medicinal Blue dye from <i>Jatropha Curca</i>	Aug 2009-July 2011	RM 39,000 Completed	UMP
4.	Production of Composites from Oil Palm Fiber with recycled Polyethylene and Polypropylene	Aug 2009-July 2011	RM 40,000 Completed	UMP
5.	Hybrid Bio membrane Contractor for Refinery Waste Water Treatment	Aug 2009-July 2011	RM 40,000 Completed	UMP



6.	Production of Bio-Oil from Bio-Mass Through Direct Fired Pyrolysis	Aug 2009-July 2011	RM 6,500 Completed	UMP
7.	Influence of Hydrogen Peroxide On Diesel Fuel Performance	Aug 2009-July 2011	RM 6,500 Completed	UMP
8.	Novel Modified Microwave System for The Extraction of Bioactive Compounds and Biofuel Production Using Epiphytic Fern	Sep 2009-Aug 2011	RM 16,500 Completed	UMP
9.	Robust Solvents For Restoring Polyolefin Waste Materials	Sep 2010-Aug 2012	RM 16,500 Completed	UMP
10.	Synthesizing the Vanadium/Iron oxide Nano-magnetic Particles for Cancer Therapy	Sep 2010-Aug 2012	RM 16,500 Completed	UMP
11.	Synthesis of Hydrophilic Polyethylene for the Development of Hybrid Hollow Fiber Nanofiltration Membrane	Sep 2010-Aug 2012	RM 16,500 Completed	UMP
12.	Synthesis and Development of Novel Biocompatible Polyamide Polymer for Dialysis and Hemodialysis Membrane	Mar 2010-Apr 2012	RM 40,000 Completed	UMP
13.	A Fundamental Study on the Mechanism of Hybrid Induction Heating for Separation Process	Apr 2010-Mar 2012	RM 48,000 Completed	FRGS
14.	Separation of Water/Oil Without Surfactant Using Hybrid Novel System	Feb 2010-Mar 2012	RM 40,000 Completed	UMP
15.	Influence of Hydrogen peroxide on the Performance of Diesel Combustion	Feb 2010-Mar 2012	RM 40,000 Completed	UMP
16.	Thermodynamics Study of Modified Pulsed Microwave Heating Dissolution on Amorphous Polymers	July 2011-Aug 2013	RM 115,000	FRGS

COLLABORATION AT INTERNATIONAL RESEARCH GRANTS				
No.	Title	Year	Status	Funding
1.	Quick Method of Small-Scale Biochar Production from Dead Palm Tree for Agriculture Purpose	Apr. 2012	Ongoing	SR 300,000 (MOHE Saudi Arabia) King Abdul Aziz University
2.	Development of PVDF Membrane and Hybrid Integrated Hollow fiber Membrane Module for Water Desalination Process	Feb 2012	Ongoing	SR 93,000 (MOHE Saudi Arabia) King Abdul Aziz University
3.	Preparation of High Performance Nylon 6,6 Membrane For Wastewater Treatment From Lab Scale to Commercial	Sep 2011	Ongoing	SR 45,000 (King Abdul Aziz University Research Grant)
4.	Development of Membrane Engineering and Microwave assisted material synthesis Program in Faculty of Mechanical & Manufacturing Engineering, NED University of Engineering & Technology, Karachi, Pakistan	Nov 2009-Dec 2010	Completed	300,000 PK Rupees
5.	Development of Membrane Science & Technology and electromagnetic material synthesis course & research plane in International Centre of Chemical & Biological Sciences, University of Karachi, under Program President's Programme for care of Highly Qualified Overseas Pakistanis (PPQP)	Jun-July 2012	Completed	300,000 PK Rupees

**REFERENCES**

Professor Dr. Ani Idris  
Dept. Bioprocess Eng. Faculty of Chemical Engineering  
University Technology Malaysia, 81310 UTM Skudai, Johor, Malaysia.  
Phone: +607-553 5603, Fax: +607-558 1463, Cell # 0060197776054  
E.mail: [ani@cheme.utm.my](mailto:ani@cheme.utm.my)/[drani\\_idris@yahoo.com](mailto:drani_idris@yahoo.com)

Professor Dato Dr. Rosli Bin Mohd Yunus, (Deputy Vice Chancellor UMP)  
Faculty of Chemical and Natural Resources Engineering, University Malaysia Pahang  
Lebuhraya Tun Razak, 26300 Kuantan, Pahang, Malaysia  
Ph./O: +6095492004., Cell No.: +60192401134  
E.mail: [rmy@ump.edu.my](mailto:rmy@ump.edu.my)

Professor Dr. Ahmad Fauzi Ismail  
Dean of Research,  
Materials and Manufacturing Research Alliance  
Advanced Membrane Technology Research Center (AMTEC)  
Universiti Teknologi Malaysia, Skudai, Johor 81310 Johor, Malaysia  
Ph./O: +607-5535592, Fax: +607-5535925  
E-mail: [afauzi@utm.my](mailto:afauzi@utm.my) or [fauzi.ismail@gmail.com](mailto:fauzi.ismail@gmail.com)

Prof. Dr. Khalid M. Khan  
H.E.J. Research Institute of Chemistry  
International Center for Chemical and Biological Sciences  
University of Karachi, Karachi-75270, Pakistan Phone: (0092-21)-34824910  
(0092-21)-99261718, Tel Res.: (0092-21)-36906776  
Fax Office: (0092-21)-34819018 and 34819019  
E-Mail: [hassaan2@super.net.pk](mailto:hassaan2@super.net.pk), [khalid.khan@iccs.com](mailto:khalid.khan@iccs.com), [drkhalidhej@yahoo.com](mailto:drkhalidhej@yahoo.com)  
Web page: [www.iccs.edu](http://www.iccs.edu)

Professor Dr. Nazimuddin Qureshi (Dean MME)  
Faculty of Mechanical & Manufacturing Engineering (MME),  
NED University of Engineering & Technology, Karachi, Pakistan  
Phone: +922199261261(Ext. 2329), E-mail: [deanmme@neduet.edu.pk](mailto:deanmme@neduet.edu.pk)

**PERSONAL DATA**

Name	Rana Iqbal Ahmed s/o Rana Moujdin
Permanent Address in Pakistan	Rana Iqbal Ahmed, House # 296-B, near Madni Masjid, Maryam road Mohallah Syed Abbad, Nawab Shah, Sindh, Pakistan
Permanent and Correspondence Address in Malaysia	Dr Iqbal Ahmed, d/a Kamisah Kormin No. 26, Kampung Parit Warijo Lintang, Seri Medan, 83400 Batu Pahat, Johor, Malaysia

Mobile No.	0060-12-7610517
Date of Birth	Feb 11, 1970
Marital Status	Married (4 Children)
Nationality	Pakistan
Languages	English, Urdu, Hindi, Sindhi, Punjabi, and Malay