

CURRICULUM VITAE

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Biography

I did my bachelors in Mechanical Engineering from NED University of Engg. & Technology, Karachi in 1989. After completing the Masters in Nuclear Engineering from Quaid-e-Azam University, Islamabad, Pakistan, I joined Karachi Institute of Power Engineering in 1991 which is a affiliated with PIEAS, Islamabad. I was associated with this institute as a faculty member and researcher until 2010. In 2002, I was awarded Commonwealth Scholarship for Ph.D in Mechanical Engineering. During my Ph.D I had designed and fabricated my combustion test rig and did a number of experiments on that rig for low grade coal combustion and gasification. I had also done CFD modeling using ANSYSYS FLUENT software for combustion of coal and solid waste. My work focused on utilization of fluidized technology for combustion of biomass waste and low grade coals for energy production. During my stay in Malaysia I was involved in a number of research projects for state owned giants like SIRIM Berhad and Tenaga Nasional Berhad. My work involved CFD modeling and simulations for industrial projects related to flow and combustion modeling. The results of these CFD modeling have already been implemented in the respective projects. I have already got a number of publications to my credit, the details of which shall follow later in my resume. I moved to Saudi Arabia in December 2010 and have worked for King Abdul University at Jeddah Campus for about five years. I was involved in teaching courses on fluid mechanics, thermodynamics, dynamics etc. In addition to that I acquired research funding for various research projects whose details will follow later in my resume. Also got a US patent filed and its about to get a patent number. Joined as Tenure Track Professor at NED University, Karachi in June 2016. Currently working as Director, ORIC at SZABIST, Karachi. I have more than 11 years of post Ph.D experience and a total teaching experience of 26 years.

During my stay at King Abdulaziz University, I worked as Advisor Research for two years. During this period I organized the research publications work at KAU which helped the University to climb up in QS Rankings. A number of grants were also

secured during this period. Later on I was actively involved in the ABET accreditation process. I had attended an extensive course on Engineering Design-I and Engineering Design –II courses which are compulsory for every engineering undergraduate at King Abdulaziz University, Jeddah. Certificate of course participation is attached at the end of the resume. Also attended a course on “Quality standards and academic accreditation”. Had a good experience of using a very handy software for preparing course files based on CLOs and Program outcomes. The program could very easily analyze all the direct and indirect assessment and could present it graphically for easy understanding. I standardize the final year or capstone design projects at KAU and developed course files for then to show continuous improvement process. This experience is now being utilized in implementing OBE in our University. Also I conduct OBE accreditation visits arranged by PEC.

WORK EXPERIENCE (Total Teaching and Research Experience of 26 Years)

- Hamdard University, Karachi (Nov 2017 – todate)
- NED University of Engineering & Technology, Karachi. (June 2016 – Oct 2017- 1.5 years)
- King Abdulaziz University (QS Ranked 50 in Asia), Jeddah, Saudi Arabia (2011-2015 – 5 years)
- Karachi Institute of Power Engineering (KINPOE, PIEAS) (From 1991-2010- 19 years)
- Faculty Member University Technology Malaysia, Johor Bharu Malaysia (2006-2007)

ACADEMICS

Ph.D (Thermo-fluids)	University Technology Malaysia, Johor, Malaysia	2006
M.Sc (Nuclear Engineering)	Centre for Nuclear Studies, Pakistan Institute of Engineering & Applied Sciences, Islamabad, Pakistan	1991
B. E. (Mechanical)	NED University of Engineering & Technology, Karachi., Pakistan	1988

PROFESSIONAL AFFILIATIONS

- ◆ Member of the Accreditation Committee of the Pakistan Engineering Council to visit various engineering universities for zero visits or follow up visits and OBE accreditation visits.
- ◆ Member of the Expert Committee of HEC for Scientific and Engineering Journals – attended various meetings in Islamabad
- ◆ Registered as Professional Engineer with Pakistan Engineering Council, Islamabad, Pakistan (Life Member)

- ◆ Member, American Society of Mechanical Engineers (ASME)
- ◆ Member, Society of Petroleum Engineers (SPE), USA
- ◆ Member IASTED, Canada

26 YEARS OF PROFESSIONAL & ADMINISTRATIVE EXPERIENCE

Worked for about 20 years at Karachi Nuclear Power Complex which is first installed nuclear power plant of Pakistan. I was involved in addressing design related issues of the plant in addition to teaching professional courses related to Plant. Before coming to Saudi Arabia, I was working as Head, Mechanical Department.

1. Ph.D. Research Project on Circulating Fluidized Bed Coal Combustor

The purpose of this study is to investigate the hydrodynamic behavior and thermochemical performance of biomass and coal blends in a Circulating Fluidized Bed (CFB), which is an upcoming technology in Malaysia. Thermochemical studies for palm shell wastes and coal blends were done in a hot circulating fluidized-bed (CFB) test rig, installed at SIRIM Berhad, Shah Alam, Experimental work has given sufficient information on the main process and flue gas characteristics. The gasification and combustion results have been plotted to study the temperature effects. The effects of variation of primary air and feed rate have also been analyzed and their influence on emissions has been established. The concentrations of CO, NO_x, SO₂ and CO₂ in the flue gas were also measured to determine environmentally friendly combustion conditions.

2. Consultation Work For SIRIM Berhad, Malaysia On Municipal Waste Combustion

A consultation work was done for SIRIM Berhad, Shah Alam on the project titled “**Computer modelling of a municipal solid waste combustor for different fuel mixtures** “ from May-July 2004. The work was done keeping in view that the average amount of municipal solid waste (MSW) generated in Malaysia is 0.5–0.8 kg/person/day and has increased to 1.7 kg/person/day in major cities. Due to rapid development and lack of space for new landfills, big cities in Malaysia are now switching to incineration. However, a major public concern over this technology also is the perception of the emission of pollutants of any form. Design requirements of high-performance incinerators are sometimes summarized as the achievement of 3Ts (time, temperature, and turbulence). An adequate retention time in hot environment is crucial to destroy the products of incomplete combustion and organic pollutants. Also turbulent mixing enhances uniform distributions of temperature and oxygen availability. CFD modeling has now become a useful tool for 3D modeling of the complex geometry and flow conditions in the incinerators. CFD flow simulations can enable detailed parametric variations of design variables. CFD modeling of an industrial scale MSW incinerator was done using FLUENT Ver. 6.1. The 3D modeling was based conservation equations for mass, momentum and energy. The differential equations were discretized by the Finite Volume Method and were solved by the SIMPLE algorithm. The k-ε turbulence model was employed. The meshing

was done using Gambit 2.0. The cold flow simulations were performed initially to develop the flow and velocity field. Numerical simulations of the flow field inside the primary and secondary combustion chambers provided the temperature profiles and the concentration data at the nodal points of computational grids. Parametric study was also done to minimize the NO_x emissions.

3. Consultation work for Tenaga Nasional Berhad, Malaysia on Combustion Simulation for Palm Olein Blended Fuel

Work related to experimental and combustion simulation was done for TNB from September 2004 – April 2005 on a project titled “**Experimental and simulations studies of combustion test firing of blended palm olein-distillate oil in laboratory combustion test rig**”. Industrial gas turbine fueled by blended palm olein is a promising option for electricity generation in Malaysia. A preliminary study on combustion of blended diesel and palm olein distillate in a combustion chamber was done. The combustion of these blended oils was analyzed. The possible use of these oils in a gas turbine combustor, without modification in injection system, was also evaluated by comparing the results with diesel fuel. However, the high viscosity of blended oils can create problems at injection, but these can be addressed by preheating the mixture.

The experimental studies were conducted for 100% diesel and blending diesel with 20, 30, 40, 50 and 60% palm olein. Combustion firing was also tried for 100% palm olein. The combustion performances were evaluated for blended oil and compared with diesel. The emission of NO_x ranged from 30-55 ppm while the soot emissions were higher for high blended fuel.

The CFD modeling of the combustor was also done using the CFD software FLUENT 6.1. A 3D model of the combustion test rig was modeled so that a comparison may be made between the experimental and computational results. This can be helpful in future parametric studies of the combustor performance under different operating conditions.

A fairly good comparison between numerical simulations and experimental findings were obtained as far as the flame structure is concerned. The flow and temperature contours suggests that for fuel with lower palm olein content or high volatility, the combustion process is more uniform because of a higher rate of fuel vaporization. As the blending ratio of palm olein is increased the NO_x ppm level also increased and for 2080POD, 4060POD and 5050POD it is found to be 45 ppm, 68 ppm and 122 respectively. The high ppm levels are due the slightly higher temperature profiles that may be due to better mixing conditions. However, it was found that the ppm level of NO_x for 5050POD increased rapidly. The soot content is also a bit high for 5050POD, which suggest a limit for using blended fuel use in gas turbine combustor. As far as the temperature distribution, flame structure and NO_x emissions are concerned; it is not useful that the palm olein blending should be used in excess of 40%. For high blended fuel, the excessive soot particles may cause damage to turbine blades.

4. Consultation Work for SIRIM Berhad, Malaysia on Combustion Studies of Oil Palm Shell Waste

A joint research project is being initiated in June 2005 between Faculty of Mechanical Engineering, UTM and SIRIM Berhad, Shah Alam to investigate efficient combustion method for solid wastes in Malaysia. Circulating fluidized-bed technology is considered to be one of the most suitable techniques to thermally convert different fuels into useful energy. However, practical experience is available for only a limited number of fuels and conditions. This study is focused to perform experimental work at a bench-scale circulating fluidized-bed (CFB) test rig, installed at SIRIM Berhad, Shah Alam, for gasification and combustion experiments using different biomass materials. The purpose of the tests is to investigate the suitability of the selected fuels for energy production using CFBC while taking care of the flue gas emissions.

5. Quality Assurance Criteria For Managers In Energy Sector

This research was done to develop energy conservation culture in our society and also prepare manpower for designated posts such as energy officers, energy auditors and energy managers. The importance of energy management and conservation will help to withstand nation in upcoming competitive industrialized global environment. Certification methodology for energy officers, energy auditors and energy managers is designed particularly for Pakistani working environment along with the accreditation of institutes in private sector which will provide training and carry out official energy audits. It will also help to develop a systematic approach for registration by the Government body like National Energy Conservation Centre (ENERCON). A typical power plant steam condenser is taken to be a reference case study as an example of thermal utility. Results were compared with plant actual data. Economic analysis is also carried out to look forward for financial benefits by applying different energy conservation techniques.

6. Nuclear Desalination

There is a grown interest in the area of nuclear desalination i.e., the production of freshwater via seawater desalination using nuclear energy using nuclear generating units. A number of countries are currently engaged in this activity. A nuclear desalination demonstration facility (4,500 m³/d MED coupled to a PHWR) in Karachi, Pakistan is currently working under testing phase. Techno-economic feasibilities are being done to make nuclear desalination a viable option is being done now which is important for coastal countries, which are suffering or will soon suffer serious water shortages.

RESEARCH GRANTS

The following funded projects were done during my stay at King Abdul Aziz University.

- i. Energy Management Studies of Faculty of Engineering at King Abdul Aziz University, Rabigh, Saudi Arabia (**SR 50,000** KAU Funded Project, Already Completed)

- ii. Pyrolysis and devolatization behavior of Palm dates wastes (KAU Funding available – **SR 50,000**, Completed)
- iii. Pyrolysis process development and surface chemical treatment of palm wastes based activated carbon to improve its adsorption capacity in industrial wastewater treatment process (KACST Funded Project – **2 Million SR**)
- iv. Hydrodynamic and fluidization behavior in a Circulating Fluidized Bed Riser (KAU Funding Available – **SR 50,000**, Completed)

RESEARCH SUPERVISION

Ph.D Research Project:

A Ph.D student, Mr. Islahuddin (who has completed his course work requirement) is now working with me to develop his Ph.D proposal on “Portable Solar Powered Ejector Refrigeration System”.

The objective of proposed research is to develop a highly efficient, portable, and solar-powered ejector refrigeration system for mobile military platforms. The proposed solar powered cooling system is based on the development of three related technological innovations:

- 1) a high-COP ejector refrigeration system
- 2) highly efficient, compact evaporators utilizing thin film evaporation;
- 3) state-of-the-art, “foldable” solar thermal collectors with nanofluid oscillating heat pipes and micro/nano-structured absorption surfaces.

Due to its unique features, the system will be compact, portable and highly efficient. More importantly, the proposed refrigeration system can be operated by a low-grade heat source such as solar hot water. Successful completion of the proposed research will result in a prototype of the first high-COP, mobile, solar-powered refrigeration technology for military applications, which will reduce fuel costs, transportation risks, and environmental hazards associated with existing battlefield air conditioners driven by diesel/gas generators

RECENTLY COMPLETED ME PROJECTS

Sr. No	Name of Student	Project Title	Status
1.	Burair Raza	Combustion Modelling in the Riser of a fluidized Bed Combustor for Thar Coal and its blends	Completed
2.	Muzaffar Ahmed	Design and Fabrication of Biogas System using food waste at NED University and utilization of biogas produced through anaerobic digestion process	Completed

Undergraduate Final Year Projects Recently Completed

Sr.	Project Title
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No.	
1.	Thermogravimetric and Kinetic Study on the Pyrolytic Process of Low Grade Thar Coal.
2.	Optimization of energy consumption in dual fuel fired industrial boiler
3.	Design and Fabrication of a Circulating Fluidized Bed Combustion Test Rig for Low grade Thar Coal Combustion
4.	Study and design a solar panel and define standard method for its small scale production.
5.	CFD modelling of Fluidized Bed Combustion for Low Grade Coal available in Pakistan.
6.	Optimization of Thermochemical Energy Storage using Ammonia Looping for Concentrated Solar Power (CSP) Plants using ASPEN HYSIS
7.	Development of a novel method for recycling of industrial membranes.
8.	Design of a small single-purpose nuclear desalination system for production of 2.6 MGD of fresh water
9.	Design of Turbine Inlet Air Cooling (TIAC) for Bin Qasim Power Station (BQPS)
10.	Designing of a Fire Fighting System for a Gas Compression Facility”. Ms. GASCO Engineering will support the project.
11.	“Pyrolysis of waste plastic” which is supported by Jilani flexible packages
12.	Solar Thermal Desalination of Brackish Water
13.	Biogas plant development, design optimization, installation and development of financial cum technical model for its adoption in Sindh ”

PATENT:

Iqbal Ahmed, Ahmad Hussain, Hani Hussain Sait (2017) HIGH PERFORMANCE MINI-PUMP FOR LIQUIDS, United States Patent Application Publication, Pub. No.: US 2017/0184122 A1; Pub. Date: Jun. 29, 2017

SELECTED IMPACT FACTOR JOURNALS PUBLICATIONS

1. Murtuza Mehdi, Maaz Akhtar, Ahmad Hussain, Muhammad Nauman, Dheya Shuja Alothmany, Iqbal Ahmed and Kyung-Hyun Choi (2017) Dip coated stretchable and bendable PEDOTPSS films on low modulus micro-bumpy PDMS substrate, Journal of Polymer Engineering, Published ahead of printing, <https://doi.org/10.1515/polyeng-2017-0081>

Impact Factor = 0.66

2. Ahmad Hussain, Murtuza Mehdi, Maaz Akhtar, Farid Nasir Ani, Iqbal Ahmed (2017) Combustion Performance of Diesel Palm Olein Fuel: A Combined CFD and Experimental Approach, Arabian Journal for Science and Engineering, **Accepted Article in Press.**

Impact Factor = 0.86

3. Yasmin Nergis, Mughal Sharif, Ahmad Hussain, Jawad A Butt1 and Yusra Tahir (2017) Reed Bed Technology and Recharging on Groundwater: Mitigating the Climate Effect of Coastal Areas, Journal of Earth Science & Climatic Change 8:7, DOI: 10.4172/2157-7617.1000406 **Impact Factor = 1.06**
4. Ahmad Hussain, Shahid Ali, Iqbal Ahmed, Jolius Gimbun, Muhammad H. Albeirutty and Zulfiqar Ahmad Rehan (2016) Microwave Reinforced Transesterification of Rubber Seed Oil Using Waste Cement Clinker Catalyst, Current Nanoscience Volume 12 (E-pub ahead of print). **Impact Factor = 1.096**
5. Syed Murtuza Mehdi, Maaz Akhtar, Ahmad Hussain (2016) CFD Study of Liquid Sodium inside a Wavy Tube for Laminar Convector: Effect of Reynolds Number, Wave Pitch and Wave Amplitude, Mathematical Problems in Engineering, Volume 2016, Article ID 6146195, 7 pages <http://dx.doi.org/10.1155/2016/6146195> **Impact Factor = 1.381**
6. Syed Murtuza Mehd, Maaz Akhtar, Ahmad Hussain (2016) Electromechanical Response of Dip-coated Silver Films on Micro Bumpy Polymer Surface, Arabian Journal for Science and Engineering, doi:10.1007/s13369-016-2358- **Impact Factor = 0.4**
7. Zainal Abidin Yusof, Iqbal Ahmed, Ahmad Hussain (2015) Thermal Evaluation of Diesel/Hydrogen Peroxide Fuel Blend, Chemical Engineering Technology 38, No. 12, 2170–2180. **Impact Factor = 2.44**
8. Ahmad Hussain, Fouad Abulaban, Syed Khubaib, Sajjad Mubin (2015) Steady state and transient thermalhydraulic analysis of PHWR using COBRA-3C/RERTR, Iranian Journal of Science and Technology – Transaction of Mechanical Engineering, Vol. 39, No.M1, pp 233-242 **Impact Factor = 0.53**
9. Abdelkarim M. Hegab, Hani Hussain Sait Ahmad Hussain (2015) Impact of the Surface Morphology on the Combustion of Simulated Solid Rocket Motor, Mathematical Problems in Engineering Hindawi Publishing Corporation, Volume 2015, Article ID 485302, <http://dx.doi.org/10.1155/2015/485302> **Impact Factor = 1.381**
10. Dheya Shujaa Al-Othmany, Ahmad Hussain, Essam Banoqitah (2015) High-Level Radioactive Waste Storage Feasibility for the Kingdom of Saudi Arabia Arabian Journal for Science and Engineering, ISSN 1319-8025 Volume 40 Number 1:195-203, DOI 10.1007/s13369-014-1503-y **Impact Factor = 0.4**
11. Syed Waheed ul Hasan, Ahmad Hussain (2014) Date Palm Waste Gasification in Downdraft Gasifier and Simulation using ASPEN HYSYS Energy Conversion & Management 88:693-699 **Impact Factor = 3.59**
12. Mustafa Zaidi, Imran Amin, Ahmad Hussain, Nukman Yusoff (2014) Error assessment of laser cutting predictions by semi-supervised learning, Journal of

Central South University (Springer) 221: 3736–3745 DOI: 10.1007/s11771-014-2357-x **Impact Factor = 0.464**

13. Fathi Djouider, Ahmad Hussain (2014) A laboratory study of the oxidation of non toxic Cr(III) to toxic Cr(VI) by OH. free radicals in simulated atmospheric water droplets conditions: Potential environmental impact Journal of Hazardous Materials (Elsevier) 276: 19-25 **Impact Factor = 4.14**
14. Abdullah Alshehri, Ahmad Hussain, Yousof Almubarak (2014) Energy Conversion Measures in the Industries of Saudi Arabia and Development of Methodology for Certification of Energy Personnel in the Kingdom, **Energy Policy (Elsevier) 64: 203-208** **Impact Factor = 3.382**
15. Abdulkarim Hegab, Hani Hussain Sait, Ahmad Hussain, A.S. Said (2014) Numerical Modeling for the Combustion of Simulated Solid Rocket Motor Propellant, **Computers and Fluids (Elsevier) 89: 29-37. Impact Factor = 1.830**
16. Siti Nur Sakinah Jamaludin, S. Basri, Ahmad Hussain, Dheya Al-Othmany, F. Mustapha and Dewan Muhammad Nuruzzaman (2014) Three Dimensional Finite Element Modeling of Thermomechanical Problems in Functionally Graded Hydroxyapatite/Titanium Plate, Mathematical Problems in Engineering. **Impact Factor = 1.380**
17. Ahmad Hussain, Fouad Abolaban (2014) Nuclear Desalination: A Viable Option for Producing Fresh Water- Feasibility and Techno-Economic Studies, Life Science Journal 11(1): 301-307 **Impact Factor = 0.167**
18. Muhammad Yusuf, Abdelhamid Saoudi, Nazeeh Alothmany, Dheya Alothmany, Sameer Natto, Nurul Islam Molla, Noor Mail, Abdulraheem Abdulrahman Kinsara, Ahmad Hussain(2014) Characterization of the Optically Stimulated Luminescence nanoDot for CT Dosimetry, Life Science Journal 11. **Impact Factor = 0.167**
19. Ahmad Hussain, Iqbal Ahmed, Hani Hussain Sait, Mohamed Ismail Basayoni, Hegab, Abdelkarim Morsy Hegab, Syed Waheed, Farid Nasir Ani (2013) An Experimental and Simulation Study of Fluidization Behavior of Palm Biomass in a Circulating Fluidized Bed Riser, Industrial & Engineering Chemistry Research 52: 17529–17537 DOI: 10.1021/ie401856b **Impact Factor = 2.206**
20. F. A. Abolaban, M. A. Najem, Ahmad Hussain, Majdi Alnowaimi, David Bradley (2013) Improving MVCBCT image quality using a Cu target with flattening filter-free LINAC, Life Sci J 2013;10(4):1624-1628]. (ISSN:1097-8135). **ImpactFactor= 0.167**
21. Mustafa Zaidi, Imran Amin, Ahmad Hussain, Nukman Yusoff (2013) Estimation of ANN Modelling of Laser Cutting with Missing Values, La Pensee 75 (10): 159-171. **Impact Factor = 0.06**
22. Iqbal Ahmed, Ani Idris, Ahmad Hussain, Zainal A.M. Yusof, Muhammad Saad Khan (2013) Influence of Co-solvent Concentration on the Properties of Dope

Solution and Performance of Polyethersulfone Membranes, **Chemical Engineering & Technology** (Wiley –VCH Verlag GmbH), 36 (10): 1-9

Impact Factor = 1.366

23. Skakaib, M., Iqbal, A., Rosli M. Yunus, Ani Idris, **Hussain, A.** (2013) Influence of Monosodium Glutamate Additive on Morphology and Permeability Characteristics of Polyamide Dialysis Membrane, **Journal of Applied Polymer Science, Vol. 128, Issue 5: 3346-3355 DOI: 10.1002/APP.38377** **Impact Factor = 1.395**
24. Hani H. Sait, **Ahmad Hussain**, Arshad Adam Salema, Farid Nasir Ani (2012) Pyrolysis and combustion kinetics of date palm biomass using thermogravimetric analysis, **Journal of Bioresource Technology (Elsevier), 118: 382-389**
Impact Factor = 4.75
25. Abdelkarim Morsy Hegab, Hani Hussain Sait, Ahmad Hussain, Ashraf Balabel, Mahdi Almutawa, Fathi Djouider. Modeling Of Microscale Solid Rocket Composite Propellant. Life Sci J 2013; 10(4): 523-531]. (ISSN:1097-8135). <http://www.lifescienceite.com>.
Impact Factor = 0.167
26. Mahdi AlMutawa, Ahmad Hussain, Abdekarim Morsy Hegab, Faheem Hassan Akhtar. Feasibility Studies of Solar Assisted Desalination Technology for the Coastal Areas of Rabigh Using Multi Effect Desalination Method and Its Lab-Scale Demonstration. Life Sci J 2013;10(3):2691-2697]. (ISSN: 1097-8135).<http://www.lifesciencesite.com>. **Impact Factor = 0.167**
27. Dheya O, Ashraf S, Ahmad H. Gamma Rays Transmission Densitometry of Distillation Columns and Development of a Computerized Expert System for Faulty Analysis, Life Sci J 2013;10(2):1613-1618]. (ISSN:1097-8135). <http://www.lifesciencesite.com>. 228 **Impact Factor = 0.167**
28. **Iqbal, A., Hussain, A., I, Hasani, S.M.F., Shakaib, M., Yunus, R.M.** (2012) Computational modeling for visualization of flow patterns in a membrane testing device, **Journal of Separation and Purification Technology 90: 1-9** **Impact Factor = 3.52**
29. Iqbal Ahmed, Ahmad Hussain, Hani Hussain Sait (2017) High Performance Mini-Pump for Liquids, United States Patent Application Publication # US 2017/0184122 A1, Published 29 June 2017.

NON Impact Factor

30. Fareda Zeab , Uzma Ali , Ahmad Hussain (2016) A comparative study on mental health of working and non-working women in Pakistan: Stress, Journal of Research on Humanities and Social Sciences, Vol. 6 No. 5:8-14
Indexed in SCOPUS
31. Yasmin Nergis, Mughal Sahrif, Abdul Hameed Memon, Dheya AlOthmany, Khawar Naveed, Ahmad Hussain (2016) Ecosystem Approach And Hydrological

- Potential Study Of Port Qasim Industrial Coastal Zone Of Karachi Pakistan, Journal of Civil and Environmental Research, ISSN (Paper)2224-5790, ISSN (Online)2225-0514, Vol. 8 No. 2: 18-26 **Indexed in SCOPUS**
32. Yasmin Nergis, Mughal Sahrif, Ahmad Hussain, Khawar Naveed, Abdul Hameed Memon (2015) Ecosystem Approach and Hydrological Potential Study of Coastal area of Thatta Sindh, Pakistan, International Journal of Environmental Geology Vol:6(2): 52-55 **HEC Recognized Journal (Y-category)**
 33. Amber Nasreen Anjum, Dheya Shujaa Al-Othmany, Ahmad Hussain (2015) Generalization of Motivational Factors in L2 Learners, Journal: International journal of Education & Practice Vol 6, No (30): 170-177 **Indexed in SCOPUS**
 34. Ahmad Hussain, Naz Islam, Abdulraheem Abdulkrahman Kinsara, Fouad Abolaban (2014) Need for a Safety Culture in the Nuclear Facilities of Saudi Arabia, Middle-East Journal of Scientific Research, Volume22 Issue12, Pages 1771-1781 **Indexed in SCOPUS**
 35. Yasmin Nergis, Mughal Sharif, Afzal Farooq Choudhry, **Ahmed Hussain**, Jawad Abdullah Butt (2012) Impact of Industrial and Sewage Effluents on Karachi Coastal Water and Sediment Quality, **Middle-East Journal of Scientific Research** 11 (10): 1443-1454, ISSN 1990-9233 **Indexed in SCOPUS**
 36. Sait, H., **Hussain, A.**, Selim, A. (2012) Experimental investigation on freezing of water falling film on vertical bank of cold horizontal tubes, **Journal of Thermal Science and Engineering Applications – ASME Transaction**, Vol. 4: 1-4 **(Indexed in SCOPUS) Cited = 1**
 37. Hussain, A., Ani, F.N. and Darus, A. N. (2008). Gas-solid flow modelling in the riser of a circulating fluidised bed. **International Journal of Modelling and Simulation**, 28(1), IASTED, Acta Press. Calgary, CANADA Vol. 28 (1): 85-90 **Cited =3 Indexed in SCOPUS**
 38. Hussain, A., Ani, F.N., Sulaiman, N., Adnan, M. (2006). Combustion modeling of an industrial municipal waste combustor. **International Journal of Environmental Studies**, Taylor and Francis, 63(3): 313-329. **Indexed in Scopus Cited =3**
 39. Hussain A., Ani, F.N, Darus, A.N., Mokhtar, H., Azam, S. and Mustafa, A. (2006) Thermochemical Behaviour of the Oil Palm Shell Waste in a Circulating Fluidized Bed Combustor (CFBC). **Journal of Oil Palm Research.**, 18(1),:210-218 **Impact Factor =0.237**
 40. Hussain, A., Ani, F.N., Darus, A.N., Mustafa A. and Salema AA. (2005) Simulation studies of gas-solid in the riser of a circulating fluidized bed. **Proceedings of the 18th International Conference on Fluidised Bed Combustion**, 22-25 May, Toronto, Ontario, Canada **Indexed in SCOPUS Cited =3**

41. Hussain, A., Ani, F.N, Darus, A.N., Mokhtar, H. and Azam, S. (2006) Thermogravimetric and kinetic study on the pyrolytic process of oil palm solid waste. **Journal of Industrial Technology.**, **15 (1): 87-99** . Indexed in SCOPUS
42. Soomro, A., Samo, S.R., **Hussain, A.** (2012) Fluidization in Cold Flow Circulating Fluidized Bed System, Energy, Environment and Sustainable System, **SpringerLink, 161-173, DOI:10.1007/978-3-7091-0109-417**
43. Hussain, A., Ani, F.N. and Darus, A.N. (2005) Flow modelling to investigate the effect of riser exit geometries on the riser hydrodynamics of a CFB. **Journal of Mechanical Engineering. 34: 1-10.**
44. Hussain, A., Ani, F.N., Darus, A. N. and Ahmad, Z. (2006). Thermogravimetric and thermochemical studies of Malaysian oil palm shell waste. **Jurnal Teknologi A., 45 (A), Universiti Teknologi Malaysia.**
45. Hussain, A., Ani, F.N., Darus, A.N., Adnan, M. F. and Mustafa, A. (2006). Hydrodynamic and fluidization behaviour in a circulating fluidized bed. *International Journal of Mechanical and Materials Engineering* 1(1):18-23.
46. Ahmad Hussain, Dheya AlOthmany (2013) Design of Thermal Loop of a Compact Reactor, *International Journal of Engineering and Advanced Technology Research* Vol. 1, No. 1, pp. 1-10: Published by European Centre for Research Training and Development, UK (www.ea-journals.org)
47. Ahmad Hussain, Dheya Al-Othmany (2013) Assessment of Aging of Zr-2.5Nb Pressure Tubes for Use in Heavy Water Reactor, **Journal of Natural Sciences Research**, Vol. 3, No. 2: 98-103
48. **Ahmad Hussain**, Dheya Al-Othmany (2013) Treatment and Conditioning of Spent Ion Exchange Resin from Nuclear Power Plant, **Journal of Advances in Physics Theories and Applications**, Vol. 15: 79-89
49. Hussain, A. (2012) CFD Modeling of Grate Furnace Designs for Municipal Solid Waste Combustion, **Journal of Asian Transaction on Engineering**, **2(3):41-50**
50. **Ahmad Hussain**, Hani Hussain Sait (2012) CFD Modeling of the Dry Spent Fuel Storage of a Pressurized Heavy Water Reactor **Mathematical Theory and Modeling**, Vol.2, No.10: 11-20
51. M. Bassyouni, F. H. Akhtar, **Hussain A.** and A. Umer (2012) Biodiesel Production and Investigations on the Performance of Diesel Engine Using Jatropha Oil, **Journal of Asian Transaction on Engineering**, **2(3):77 - 88**
52. **Hussain, A.**, Akhtar, N. A (2011) Supervision and Evaluation Of Research Projects Of Graduate Students – Realities And Requirements, **Journal of Quality and Technology Management**, **Vol. VIII, Issue 2: 123-137**

53. **Hussain, A., Nergis, Y. (2009) Quality Characterization and Magnitude of Pollution Implication in Textile Mills Effluents, *Journal of Quality and Technology Management* Vol. V(II): 27- 40**
54. Sajjad Mubin, Ammad Hassan Khan and Ahmad Hussain (2008) Performance Optimization of Industrial Municipal Solid Waste Combustors – A Need of the Day to Convert Waste to Wealth, ***Journal of Pakistan Association for the Advancement of Science*, 60 (12),1-10.**
55. Hussain, A., Velautham, S. (2008) Quality Assurance Criteria for Managers in Malaysian Energy Sector, ***Journal of Quality and Technology Management* Vol. IV (II) 57-70**
56. Hussain, A., Ani, F. N. (2007) Biomass Utilization for Green Environment: Co-combustion of Diesel Fuel and Producer Gas in Thermal Applications, ***Pakistan Journal of Scientific and Industrial Research*, Vol. 50 (6):370-376 Indexed in SCOPUS**
57. Nik, W.S., Hussain, A., Ani, F.N., Darus, F.N., Ali, Noraaini, A. and Eric, T.H.B. (2006) CFD modelling of industrial furnace designs for minimising emissions. ***Journal of Solid State Science and Technology Letters*. 13(2): 204-205.**
58. Hussain, A., Ani, F.N., Darus, A.N., Mokhtar, H., Azam, S., Sulaiman, N., Mustafa, A. and Ahmed, J. (2005) Thermogravimetric and Thermochemical studies of oil palm shell waste. ***Journal of the Pakistan Institute of Chemical Engineers*. Vol. XXXIII: 1-7.**
59. Hussain, A., Ani, F.N., Darus, A.N., Mokhtar, H., Azam, S., Sarpin, Z. and Ahmed, J. (2005) Combustion studies of Malaysian oil palm shell waste in a circulating fluidised bed combustor - Influence of primary air and CFBC temperature on emissions. ***Journal of the Pakistan Institute of Chemical Engineers*. Vol. XXXIII: 27-39.**
60. Hussain, A. and Ani, F.N. (2004) CFD flow modelling of riser exit geometries of a circulating fluidized bed. ***Mehran University Journal of Science & Technology*. 24(3), pp 181-190.**
61. Hussain, A., Ani, F. N., Darus, A.N., Mustafa, A., Akhtar, N.A. and Ahmed, J. (2004) Hydrodynamic Modeling of gas solid flow in the riser of a circulating fluidised bed using CFD. ***Journal of the Pakistan Institute of Chemical Engineers*. Vol. XXXII: 75-82.**
62. Hussain, A., and Ani, F.N. (2004). The effect of riser exit geometry on the hydrodynamics of a circulating fluidized bed. ***Mehran University Journal of Science & Technology*. 24(2):141-148.**
63. Hussain, A., Ani, F. N., Akhtar, N.A., Darus, A.N., Adnan, M.F., Mustafa, A., and Ahmed, J. (2004) Combustion Modeling of Municipal Waste Combustor in Malaysia. ***Journal of the Pakistan Institute of Chemical Engineers*. Vol. XXXII: 1-11.**

International and National Conference Proceedings

64. Bilal Soomro, Ahmad Hussain (2016) Modelling and Simulation of diffuser augmented wind turbine, Proceedings of the 4th International Conference on Energy, Environment and Sustainable Development November 01-03. 2016, Mehran University of Engineering and Technology, Jamshoro, Pakistan.
65. Azam Usto, Ahmad Hussain (2016) Production of Biofuel by Hydrothermal Liquefaction of Date PalmSeeds, Proceedings of the 4th International Conference on Energy, Environment and Sustainable Development November 01-03. 2016, Mehran University of Engineering and Technology, Jamshoro, Pakistan
66. Abdullah Alshehri, Ahmad Hussain (2016) Need of Energy Conversion Measures in Saudi Arabia and Methodology for Certification of Energy Personnel, Proceedings of the 6th International Mechanical Engineering Congress (SIMEC-2016)-15-16 July,2016, Karachi, Pakistan.
67. M. Ihsan Ul Haq, S.M. Khubaib, Umair Khalique, Ahmad Hussain (2016) Review of clean coal technologies for mitigation of carbon footprint,” Proceedings of the 4th International Conference on Environmental Horizons, Karachi, 2016.
68. Umair Khalique, M. Ihsan Ul Haq, S.M. Khubaib, Ahmad Hussain (2016) Customized maintenance strategy to reduce the greenhouse gases emissions in domestic generators,” Proceedings of the 4th International Conference on Environmental Horizons, Karachi, 2016.
69. S.M. Khubaib, M. Ihsan Ul Haq, Umair Khalique, Ahmad Hussain (2016) Economic and payback period evaluation of replacement of conventional lighting system with LEDs paired with solar energy,” Proceedings of the 4th International Conference on Environmental Horizons, Karachi, 2016.
70. Mumtaz Ahmad, M. Ihsan ul Haq, Naveed Hussain, M. Tayyab Muneeb, Ahmad Hussain, Azeemuddin (2015) CFD analysis of a low head micro hydro kinetic turbine for northern areas of Pakistan, MDSRC - 2015 proceedings, 14-15 November, 2015 Wah/Pakistan
71. Ahmad Hussain, Majid Almotairi (2012) Effect of changing fuels on the combustion performance of an industrial boiler. *Proceedings of the Winter Enrichment Program- Poster Competition, King Abdullah University, Thuwal, KSA, 21-28 January, Saudi Arabia.*
72. Hani H. Sait, Ahmad Hussain (2012) Effects of Feeding Tubes Arrangement, Falling Film Behavior and Backsplash on Ice Formation around Horizontal Tubes Bundles, *Proceedings of the International Conference on Nuclear & Renewable Energy Resources (NuRER) 2012, 20-23 May, Istanbul, Turkey.*

73. Ahmad Hussain, Hani Sait, Afzal Haque, Sadiq Hussain (2012) Combustion Performance of Low Grade Duki Coal from Baluchistan, *Proceedings of the UK-Pakistan Coal Conference, University of Leeds, 2-4 July, United Kingdom.*
74. Abdullah, A.S., Hussain, A., Hani, H. S. (2012) THE EXISTENCE OF ENERGY MANAGERS IN AN INDUSTRY - A Need of the Time in the Energy Starved Environment- *Proceedings of the HEFAT 2012, 16-18 July, Malta.*
75. Sait, H. H, Hussain, A. (2011) Estimation Of Flow Accelerated Corrosion (FAC) in Feeder Pipes Using CFD Software FLUENT and its Low Temperature Experimental Determination, *Proceedings of the Universiti Malaysia Terengganu 10th International Annual Symposium (UMTAS 2011), 11-13 July 2011., Malaysia.*
76. Hussain, A., Ahmad, S. (2010) CFD Modeling of Dry Spent Fuel Storage of a Pressurized Heavy Water Reactor, Proceedings of the 7th International Bhurban Conference on Applied Sciences & Technology, Organized by National Centre for Physics, Quaid-e-Azam University and CESAT, Islamabad., 11-14 January
77. Hussain, A. (2010) Next Generations of Nuclear Power Plants – Realities & Requirements, Proceedings of the Institution of Electrical & Electronics Engineers (IEEEP) Symposium, Organized by IEEEP, Karachi Centre, 17-18 March.
78. Hussain, A. (2010) Role of Energy Mangers in Our industry and Energy Conservation Studies for a Typical Power Plant, Proceedings of the Third National Conference on Energy Resources of Pakistan, Organized by Quaid-e-Awam University, Nawabshah, 18-20 March
79. Hussain, A., Nik, W.S., Ani, F.N., Darus, F.N., Ali, Noraaini, A. and Eric, T.H.B. (2006) CFD modelling of industrial furnace designs for minimising emissions. Proceedings of the International Conference on Solid State Science and Technology (ICSSST), 4-6 September, Kuala Terengganu, Malaysia.
80. Hussain, A., Ani, F.N, Darus, A.N., Mokhtar, H., Azam, S., Sulaiman, N. and Mustafa, A. (2006). An investigation into the thermochemical behaviour of the Malaysian oil palm shell wastes & coal blends and its combustion studies in a circulating fluidized bed. Proceedings of the International Conference on Agricultural Wastes, 21-22 March, Faculty of Environment Studies, Universiti Putra Malaysia, Serdang, Malaysia.
81. Hussain, A. and Ani, F.N. (2006) Co-Combustion of Diesel Fuel Oil and Producer Gas from Biomass Gasification for Thermal Applications. Proceedings of the Pakistan Oil Gas and Energy Exhibition 2006 (POGEE 2006), 18-19 May, Karachi, Pakistan.
82. Hussain, A., Ani, F.N. and Darus, A.N. (2006) Pyrolysis Characteristics and Kinetics of Palm Shell Waste Mixtures with Mukah Balingian Coal. Proceedings of the International Conference on Energy and Environment (ICEE 2006), 28-30 August, Universiti Tenaga Nasional, Kajang, Malaysia.

83. Hussain, A., Ani, F.N. and Darus, F.N. (2006) Pyrolysis behaviour and kinetics of palm shell waste mixtures with low grade coal and its combustion studies in a circulating fluidised bed. Proceedings of the Seminar on Energy from Biomass 2006, Organised by Forest Research Institute of Malaysia (FRIM), 25-26 July, Kepong, Kuala Lumpur.
84. Hussain, A., Sani, W.N., Ani, F.N. and Wahid, M.K. (2006) An Investigation into the Thermogravimetric Analysis and Kinetic Parameters of the Sarawak Coal and its Blends with Oil Palm Shell Waste. Proceeding of the KUSTEM 5th Annual Seminar on Sustainability Science and Management, 2-3 May, Kuala Terengganu, Malaysia.
85. Ani, F.N., Hussain, A., Yi, L.X. and Mohamed, A.F. (2006) Combustion of diesel fuel and producer gas in thermal applications. Proceedings of the National Conference & Expo 2006 – Waste to Wealth, 10-11 July, Kuala Lumpur, Malaysia.
86. Hussain, A., Ani, F.N., Darus, A.N., Puad, M. and Katiravale, S. (2006) Thermogravimetric and Kinetic Studies of Sarawak Coals and its Blends with Oil Palm Shell Waste. Proceedings of the National Conference & Expo 2006 – Waste to Wealth, 10-11 July, Kuala Lumpur, Malaysia.
87. Hussain, A., Ani, F.N. and Darus, A.N. (2006) Thermal Behaviour of Coal/Biomass Blends during Co-Pyrolysis. Proceedings of the 1st Regional Post Graduate Conference on Engineering and Science 2006 (RPCES 2006), 26-27 July, Universiti Teknologi Malaysia, Johor Bharu, Malaysia.
88. Hussain, A., Ani, F.N. and Darus, A.N. (2006) Investigation on Co-Combustion Characteristics of Palm Shell Waste and Coal in Circulating Fluidized Bed Combustor. Proceedings of the 1st Regional Post Graduate Conference on Engineering and Science 2006 (RPCES 2006), 26-27 July, Universiti Teknologi Malaysia, Johor Bharu, Malaysia.
89. Hussain, A., Ani, F.N., Mustafa, A., Mamat, Z.A., Zardi, Z. and Aziz, A. (2005) Combustion studies of blended fuel oil as an alternative fuel for industrial gas turbines (AFTUR) and controlling NO_x and soot emissions. Proceedings of the 3rd Pakistan's Oil, Gas and Energy Exhibition (POGEE), 19-20 May, Karachi, Pakistan.
90. Hussain, A., Ani, F.N., Darus, A.N., Mustafa A. and Salema AA. (2005) Simulation studies of gas-solid in the riser of a circulating fluidized bed. **Proceedings of the 18th International Conference on Fluidised Bed Combustion, 22-25 May, Toronto, Ontario, Canada**
91. Hussain, A., Ani, F.N. and Darus, A.N. (2005) Fluidization characteristics of a circulating fluidized bed. Proceedings of the National Mechanical Engineering Conference (NAME '05), 18-20 May, University Teknologi Mara, Malaysia, 391-400

92. Hussain, A., Ani, F.N. and Darus, A.N. (2005) Hydrodynamics of a circulating fluidized bed. Proceedings of the International conference in recent advances in Mechanical and Materials Engineering (ICRAMME 2005), 30-31 May, University of Malaya, Malaysia.
93. Hussain A., Ani, F.N, Darus, A.N., Mokhtar, H., Azam, S., Sarpin, Z. and Mustafa, A. (2005) Experimental and numerical studies of fluidization in a circulating fluidized bed. Proceedings of the International Energy Conference, 5-7 August, Jakarta, Indonesia.
94. Hussain A., Ani, F.N, Darus, A.N., Mokhtar, H., Azam, S., Sarpin, Z. and Mustafa, A. (2005) Combustion studies of the palm shell waste powder in a circulating fluidized bed combustor (CFBC) – influence of primary air and CFBC temperature on emissions. Proceedings of the International Energy Conference, 5-7 August, Jakarta, Indonesia.
95. Hussain, A., Ani, F.N., Darus, A. N. and Mustafa, A. (2005). Experimental and computational studies of the hydrodynamics of the riser of a CFB, Proceedings of the Brunei International Conference on Engineering and Technology (BICET 2005), 15-18 August, Brunei Darussalam.
96. Azam, S., Hussain, A., Ani, F.N, Darus, A.N., Mokhtar, H., Sulaiman, N. and Mustafa, A. (2005) Utilization of oil palm shell waste in a circulating fluidized bed combustor (CFBC). Proceedings of the International Advanced Technology Congress, Universiti Putra Malaysia, 6-8 December, Kuala Lumpur, Malaysia.
97. Hussain, A., Ani, F.N. and Darus, A.N. (2004) Flow modelling to investigate the effect of riser exit geometries on the riser hydrodynamics of a circulating fluidized bed. Proceedings of the International Conference on Scientific and Engineering Computation, June 30 – July 02 Singapore.
98. Hussain, A., Ani, F.N. and Darus, A.N. (2004). Turbulence modelling of a circulating fluidized bed. Proceedings of the 17th International symposium on Analytical Science: Trends, Challenges and Opportunities, 24-26 August, 2004, Kuantan, Malaysia.
99. Hussain, A., Ani, F.N. and Darus, A.N. (2004) Simulation of Gas-Solid Flow Behaviour in the Riser Section of a circulating Fluidized Bed using Computational Fluid Dynamics Software. Proceedings of the JGSEE and Kyoto University Conference on Sustainable Energy and Environment (SEE), 1-3 December, Thailand.
100. Hussain, A., Ani, F.N. and Darus, A.N. (2004) A computational study of the hydrodynamics of a circulating fluidized bed using CFD software FLUENT. Proceedings of the 7th Asia-Pacific International Symposium on Combustion and Energy Utilization (7th APISCEU), 15-17 December, Hong Kong.
101. Hussain, A. and Ani, F.N. (2004) A computational study of gas-solid flow in the riser of a circulating fluidized bed. Proceedings of the KUSTEM 3rd

annual seminar: Role of Environment Sciences and Technology in Sustainable Development of Resources, 4-5 May, Terengganu, Malaysia.

102. Hussain, A., Ani, F.N., Adnan, M.F., Surjosatyo, A., Mustafa, A. and Nik, W.B. (2004) CFD modelling of an industrial municipal solid waste combustor. Proceedings of the Symposium of Malaysian Chemical Engineers (SOMChE 2004), December 13-14, Universiti Teknologi PETRONAS, Ipoh, Perak, Malaysia.
103. Hussain, A., Ani, F.N., Darus, A N., Mustafa, A. and Nik, W.B. (2004) Numerical study on the influence of various physical parameters over the gas solid two phase flow in the 3D riser of a circulating fluidized bed. Proceedings of the Symposium of Malaysian Chemical Engineers (SOMChE 2004), December 13-14, Universiti Teknologi PETRONAS, Ipoh, Perak, Malaysia.
104. Nik, W.B., Ani, F. N., Masjuki, H H., Hussain, A. and Bulat, K. H. (2004) Thermal stability of crop oil as energy transport media in hydraulic system. Proceedings of the Symposium of Malaysian Chemical Engineers (SOMChE 2004), December 13-14, Universiti Teknologi PETRONAS, Ipoh, Perak, Malaysia.