

Dr. MUHAMMAD ASIF HUSSAIN

Assistant Professor: Institute of Metallurgy and Materials Engineering, University of the Punjab, Lahore

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**HEC Approved
Supervisor**

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RESEARCH INTERESTS AND PROSPECTIVE

The design, characterization, and application of heterogeneous catalysts and nanohybrid materials for green organic synthesis processes and electrochemical applications such as super capacitors, batteries for hybrid systems, and fuel cells used to generate hydrogen energy, hence achieving the goal of green energy and environment.

My research interests include, the synthesis, characterization, mechanical, electrical, and electrochemical evaluation of functionally graded materials (FGM), nanomaterials, ceramic/metal/polymer-based nanocomposites, carbon-based nanomaterials, thin hybrid/composite coatings, shape memory alloys (SMAs) and porous materials for energy, biomedical and structural applications.

ACADEMICS

Ph.D. Energy and Chemical Engineering

Department of Energy and Chemical Engineering, Kangwon
National University, Samcheok, South Korea

(4.46/4.5)

Sep 2013-Aug 2016

Thesis: The Highly Efficient Supported Metal Nanocatalysts for the Selective Transformations of Organic Compounds

Extensive Korean Language Program

Keimyung University, Daegu, South Korea

(398/400)

Sep 2012-August 2013

MS. Nanotechnology and Materials Engineering,

GIK Institute of Engineering Sciences and Technology, Topi,
Khyber Pakhtoonkhwa, Pakistan

(3.57/4.0)

Jan2009-June2011

Thesis: Synthesis and Characterization of CNTs Reinforced Functionally Graded Material for Bioimplants

B. Sc. Metallurgy and Materials Science Engineering, (Honor)

University of the Punjab, Lahore, Pakistan

(3921/4800)

2004-2008

Project: To study the effect of %age of Cu on the mechanical properties of LM-30

PROFESSIONAL CAREERS

Research and Professional Experience:

Assistant Professor

Institute of Metallurgy & Materials Engineering
University of the Punjab, Lahore, Pakistan.

April 2022 – to date

Assistant Professor**Jan 2017 – April 2022**

Department of Metallurgical & Materials Engineering
University of Engineering and Technology (UET), Lahore, Pakistan.
Centre for Energy Research and Development (CERAD), New Campus, UET, Lahore

Ph.D Research Scholar**Sep 2013 – Aug 2016**

Department of Energy and Chemical Engineering,
Kangwon National University, Republic of Korea.

Research Associate (Lecturer)**July 2011 – June 2012**

Faculty of Materials Science and Engineering
GIK Institute of Engineering Sciences and Technology, Topi, KPK, Pakistan

Graduate Teaching Assistant/Lab Engineer**Feb 2009 – June 2011**

Faculty of Materials Science and Engineering
GIK Institute of Engineering Sciences and Technology, Topi, KPK, Pakistan

Assistant Professor**Jan 2017- April 2022****Department of Metallurgical and Materials Engineering, UET, Lahore, Pakistan**

- **Undergraduate Courses Taught:** Materials Technology, Industrial Materials, Foundry Engineering, Industrial & Financial Management, Iron & Steel Making Processes, Nuclear Materials, Biomaterials, Powder Metallurgy, Inspection & Quality Assurance, Corrosion & Corrosion Control, Polymeric Materials
- **Postgraduate Course Taught:** Biomaterials, Conventional Surface Engineering Methods, Biomaterials and Functional Coatings, Coating Techniques and Surface Analysis, Principles of Surface Science, Production of Metals and Alloys
- **University/Departmental Committees:**
Member Academic Council, UET Lahore, Member Board of Faculties, Member Board of Studies
Member Postgraduate Research Committee, Member Postgraduate Research Committee (CERAD), Member various OBE Committees, Departmental Focal Person for IPE, Member Departmental stock checking Committee, Member Departmental Open House Committee
Member Alumni Reunion Committee, Member Departmental Scholarships and Financial Assistance Overseer Committee
- **Secretary** Departmental Industrial Advisory Board
- **Departmental Co-Ordinator:** Students Learning Management System (LMS)
- **Departmental Co-Ordinator:** Similarity index Checking for Research papers, PhD, and MS thesis etc.
- **Semester Co-Ordinator:** Department of Metallurgical and Materials Engineering

Center for Energy Research and Development (CERAD), UET, City Campus, Lahore

- Revised the **PC-1 (PKR 142M)** successfully for the development of the CERAD
- Write and submitted the **PC-1 (PKR 73.5M)** successfully for the upgradation of the CERAD
- **Team member** for the technical evaluation and purchase of the equipment for CERAD according to PC-1 (Revised) as well as PC-1 (Upgradation).
- Worked for the development of the various labs in CERAD

- **Worked as team leader for the project:** Development of Solar Thermal Cooker for household application
- **Team member** for the development of Curriculum of BS Energy Engineering, PhD Energy Engineering and Materials Science

No. of Projects submitted to HEC through TDF program = 1

No. of Projects submitted to HEC through NRPU Program = 2

Number of PhD Thesis Supervised: 1 (in progress)

Number of MS thesis Supervised: 13

Number of BS Thesis Supervised: 15 (40 Students)

Center for Nanotechnology and Advanced Materials Research (CNAMR), UET, Lahore

- **Core Team Member** of the committee to oversee the Establishment and Operations of the CNAMR according to **PC-1 (PKR 372M)**
- Technical specifications preparation, bids preparation and evaluation, purchase and installation of FE-SEM, HR-TEM, XRD, Nanoindenter, Sample preparation set up.
- Member of the team operating and working of FE-SEM

Society of Metallurgical and Materials Engineering (SOMAME), UET, Lahore

- Served as advisor for SOMAME since February 2019 to date
- **Workshops and Seminars Organization:** Several workshops and seminars for the students of MME Department to provide the ample exposure to the co-curricular activities
- **Metalypics 2019 Orgnization:** A sports event to provide the exposure of extra-curricular activities to the students
- **Metalypics 2021 Orgnization:** A sports event to provide the exposure of extra-curricular activities to the students

Lecturer (Research Associate):

July 2011 – June 2012

Faculty of Materials Science and Engineering, Ghulam Ishaq Khan Institute of Engineering sciences and Technology, Topi, Pakistan

- **Undergraduate Courses Taught:** Advanced Materials, X-rays Diffraction & Crystallography. Ceramics and Glasses

• **Student's Mentoring Council:**

January 2009 – June 2012

Worked as an active member of the student mentoring council, which guided the students in their failure and critical situations to resolve their academic problems

Graduate Assistant/Lab Engineer:

Jan. 2009 - May 2011

Faculty of Materials Science and Engineering, Ghulam Ishaq Khan Institute of Engineering Sciences and Technology, Topi, Pakistan

- **Course Assisted and Labs Conducted:** Major responsibilities included assisting the faculty members in courses and research activities.
- **Courses Assisted:** Introduction to Engineering Materials, ceramics and glasses, Powder

Metallurgy, Industrial chemistry, Composite materials

- **Undergraduate Labs:** Mechanical testing, NDT, powder metallurgy and surface engineering, XRD and crystallography.

Hostel Warden at GIK Institute

March 2010 – June 2012

- **Major Duties:** Maintain the hostel decorum and discipline and look after the students in solving their issues regarding hostel

INTERNSHIP & TRAININGS

Internship:

July 2006

One month's training as part of the BS degree in Steel Making and Casting at Chenab Engineering Works & Foundries (Pvt) Ltd. Faisalabad, Pakistan

Trainings:

July 2008

4 weeks training course in **SMAW and TIG Welding** at Pakistan Institute of Technical Assistance Center, Lahore

SHORT TERM PROJECTS

- 1) Design and fabrication of tube in tube micro-reactor with the solid bed packing of the solid supported catalysts
- 2) Aerobic oxidation of alcohols to aldehydes using packed-bed tube and tube micro-reactor to produce high TONs
- 3) Continuous dehydrogenative oxidation of amines with Ru supported catalyst using a simplified tube and tube micro-reactor
- 4) Fabrication of Thin Films of MEMS Structural Materials and Measurement of Resistivity as a Function of Temperature
- 5) Au & Ag Nanoscale thin film deposition by thermal evaporator for the development of semiconductor devices.
- 6) Synthesis and Characterization of Nanoscale Copper Sputted Thin Films
- 7) Study of Different Variables on The Densification & Microstructure of Al/SiC Composites
- 8) Effect of Cooling Rate and Quenching Media on the Mechanical Properties of Mild Steel

TECHNICAL SKILLS

- Certified operator of Zeiss Sigma 500 VP, Field Emission Scanning Electron Microscope.
- **Structural Characterization Tools:** hand on expertise in SEM, XRD, Optical Microscopy, Thermal analysis (DSC), Thermogravimetric Analysis (TGA), FTIR etc.
- **Analytical Techniques:** Gas Chromatography (GC), GC-Mass Chromatography, FTIR Spectroscopy, and UV-Vis spectroscopy
- **Professional Computer Applications:** PANalytical X'pert software for XRD analysis, ImageJ, OriginPro 9.2, Adobe Photoshop CS4, MS Office 2016, ChemBio Draw Ultra 12.1 (full suit), Mandelley, Endnote X7 and Optical microscope software.
- **Material Processing:** Chemical Impregnation, Sonochemical synthesis, Powder processing, Conventional and Spark plasma sintering, Injection molding, Electric arc alloying, Planetary high

energy ball mill, All Heat treatment/Sintering Furnaces, H.T Graphite Furnace, Casting Processes, Thermal Evaporator and Surface treatments (Plating techniques), Welding techniques

- **Material Testing:** Mechanical testing (Impact tester, Micro, Vickers, Brinell, Rockwell Hardness tester, UTM), Nondestructive Techniques (ultrasound test, liquid penetrant test, and Magnetic particle test), Fatigue and Creep Testing

AWARDS & ACHIEVEMENTS

- 1) **Member Editorial Board:** SCIREA Journal of Materials, Since September 2018
- 2) **Outstanding Academic Award** from Kangwon National University Graduation Ceremony held on 30th August 2016.
- 3) **A cover article** for the Scopus journal “*Applied Chemistry for Engineering*” Vol. 27 (3), June 2016.
- 4) **A cover article** for the Scopus journal “*Applied Chemistry for Engineering*” Vol. 26 (2), April 2015.
- 5) Award for **Excellent Academic Achievement Award** for the year 2014 by the National Institute for International Education, South Korea.
- 6) Awarded with **full funded scholarship for Pd.D. (Eng.)** from Korean government through Global Korean Scholarship for 4 years.
- 7) Awarded with **full funded scholarship/assistantship for MS (Eng.)** by GIK Institute of Engineering Sciences and Technology, Topi, Pakistan.
- 8) **5th position** in Class of 2008, Metallurgy and Materials Science Engineering, University of the Punjab, Lahore
- 9) **Merit Scholarships** in 3rd and 4th year of B. Sc. Engineering from Punjab University, Lahore

CONFERENCES AND WORKSHOPS ORGANIZATION

- 1) 5th International Conference of Energy Conservation and Efficiency (March 2022)
- 2) All Pakistan Materials Competition (MetaComp 1.0): Metallography, Simulation Design and Quiz Competition (February 2022)
- 3) 2nd International Conference on Advanced Materials and Emerging Technologies (July 2021)
- 4) 4th International Conference of Energy Conservation and Efficiency (March 2021)
- 5) 2nd Advanced Composites for Aerospace and Industrial Applications (November 2020)
- 6) A Workshop on Research Article Exploration (June 2020)
- 7) 3rd International Conference of Energy Conservation and Efficiency (October 2019)
- 8) International Conference on Sustainable Energy (December 2018)
- 9) 2nd International Conference of Energy Conservation and Efficiency (October 2018)
- 10) A workshop Structure and properties of silicate, alumina and aluminosilicate ceramics and their applications (October 2018)
- 11) A workshop on Surface Engineering (August 2018)
- 12) Research Seminar on Advanced Composites for Aerospace Applications (July 2018)
- 13) A workshop on Ceramics Structural and Advanced (Smart) Applications (April 2018)
- 14) 11th International Conference on Open-Source Systems and Technologies (Dec. 2017)

15) 1st International Conference of Energy Conservation and Efficiency (November 2017)

16) International Symposium on Aluminum, its Recycling, Industrial Opportunities and Metallurgical Challenges (November 2017)

Outcome Based Education (OBE) Workshops:

1) A Resource person in workshop “An Introduction to Outcome Based Education”, Baha-ud-Din Zakariya University, Multan (April 2019)

2) A Resource person in workshop “Outcome Based Education System”, Baha-ud-Din Zakariya University, Multan (March 2021)

SEMINARS ORGANIZATION

1) Winter is coming...How to thrive in life post-graduation? (February 24, 2022)

2) Cathodic Protection - Current Status & Future Perspectives (February 09, 2022)

3) Role of Standards in the Industrial Development (January 26, 2022)

4) Production Operation Management (January 20, 2022)

5) Additive Manufacturing for Foundry Industry (December 06, 2021)

6) Transitioning from Metallurgy to Regrowing Human Organs: Challenges and Opportunities (December 15, 2021)

7) Conventional and Advanced Non-Destructive Testing (December 21, 2021)

8) Requirement of Casting Industries (January 29, 2020)

9) Application of Polymer Tapes in Corrosion Prevention (February 26, 2020)

NATIONAL AND INTERNATIONAL COLLABORATIONS

- Dr. Jung Won Kim, Kangwon National University, Samcheok Campus, South Korea
- Dr. Abbas Saeed Hakeem, King Fahd University of Petroleum and Minerals, Saudi Arabia.
- Dr. Hassan Zeb, Institute of Energy and Environmental Engineering, Punjab University Lahore
- Dr. Ramzan Abdul Karim, Department of Materials Science and Engineering, GIK Institute of Engineering Sciences and Technology, Topi, KPK, Pakistan
- Dr. Muhammad Atif, Department of Chemistry, University of Education Lahore, Pakistan

PEER REVIEWER IN JOURNALS

- Ultrasonics Sonochemistry
- Materials & Design
- RSC Advances
- Journal of Cleaner Production.
- Journal of Materials Engineering and Performance
- Key Engineering Materials
- Catalysis Communications
- Journal of Research
- Energy and Environment
- Advances in Materials Science and Engineering
- Polymer Korea
- IEEE Expert
- The Korean Journal of Chemical Engineering

SCI Publications:

- 1) **Muhammad Asif Hussain***, Ehsan Ul Haq, Iram Munawar, Adnan Maqbool, Mohsin Saleem, Muhammad Asif Rafiq, Aqil Inam, Abbas Saeed Hakeem, Influence of Spark Plasma Sintering Temperature and Hydroxyapatite Nanoparticles on Properties of HA Based Functionally Graded Materials for Bone Prosthesis, *Ceramics International*, **48**, 14481–14490, 2022
- 2) Muhammad Atif, **Muhammad Asif Hussain**, Ambreen Ghani, Adila Rani, Saima Muzaffar, Roberta Bongiovanni, Controlled Cationic Curing of Epoxy Composites with Photochemically Modified Silanol Encapsulated Carbon Black, *Journal of Applied Polymer Science*, **1-11**, 2022
- 3) Muhammad Yousaf, Tanveer Iqbal, **Muhammad Asif Hussain***, Asif Nadeem Tabish, Ehsan Ul Haq, Muhammad Hamid Siddiqi, Saima Yasin, Hamayoun Mahmood, Microstructural and Mechanical Characterization of High Strength Porcelain Insulators for Power Transmission and Distribution Applications, *Ceramics International*, **48 (2)**, 603-1610, 2022
- 4) Hussein Alrobei, Adnan Maqbool, **Muhammad Asif Hussain**, Rizwan Ahmed Malik, Muhammad Ramzan Abdul Karim, Ibrahim AlBaijan, Azeem Hafiz, Muhammad Latif, Single-Step Fabrication and Characterization of Nanoscale Cu Thin films for Optoelectronic Applications, *Crystals*, **12**, 62, 2022
- 5) Muhammad Hamid Siddiqi, Xiao-min Liu, **Muhammad Asif Hussain***, Tayyab Qureshi, Asif Nadeem Tabish, Hafiz Umair Lateef, Hassan Zeb, Evaluation of Physiochemical, Thermal and Kinetic Properties of Wheat Straw by Demineralising with Leaching Reagents for Energy Applications, *Energy*, **238-C**, 122013, 2022
- 6) Hassan Zeb, **Muhammad Asif Hussain***, Iftikhar Ahmed, Muhammad Sarfraz Akram, Bilal Haider, Rizwan Haider, Study of Bleaching of Old Newsprint Recycled Paper: Reproduction of Newspaper Material, *Materials Research Express*, **8**, 085305, 2021
- 7) **Muhammad Asif Hussain***, Muhammad Nouman, Ehsan Ul Haq, Adnan Maqbool, Muhammad Ramzan Abdul Karim, Muhammad Zubair, Muhammad Shoaib Butt, Furqan Ahmed and Muhammad Asif Rafiq, Synthesis and Mechanical Characterization of Al Casting Produced by Slip Casting and Pressureless Sintering, *Research & Development in Material science*, **15(3)**, 1696-1702, 2021
- 8) **Muhammad Asif Hussain***, Eun Ju Choi, Adnan Maqbool, Muhammad Atif, Hassan Zeb, JaeGoo Yeo, Jung-A Yu, Yong-Hun Cho, Moses Noh, Jung Won Kim, An efficient hydration of nitriles with ruthenium-supported heterogeneous catalyst in water under moderate conditions, *Journal of Industrial and Engineering Chemistry*, **99**, 187-195 (2021)
- 9) Asif Nadeem Tabisha, Mohsin Kazmi, **Muhammad Asif Hussain***, Iqra Farhat, Muhammad Irfan, Muhammad Hamid Siddiqi, Usman Rafique, Haider Ali, Hassan Zeb, Biomass waste valorization by acidic and basic leaching process for thermochemical applications, *Waste and Biomass Valorization*, **1-11**, (2021)
- 10) Muhammad Hamid Siddiqi, Xiao-min Liu, **Muhammad Asif Hussain***, Tayyab Qureshi, Muhammad Waqas, Muhammad Farooq, Tanveer Iqbal, Saba Nawaz, Saher Nawaz, Evolution of Kinetic and Hydrothermal study of Refused Derived Fuels: Thermo- Gravimetric Analysis, *Energy Reports*, **7**, 1757–1764 (2021)

- 11) Muhammad Atif, Abd Ur Rehman Kashif, Zubair Khaliq, Asif Mahmood, [Muhammad Asif Hussain](#), Roberta Bongiovanni, Electrochemical evaluation of textile industry waste derived carbon particles for UV-cured epoxy composites, *Diamond & Related Materials* **105**, 107804 (2020)
- 12) Muhammad Asif Rafiq, Qaisar Khushi Muhammad, Moaz Waqar, Adnan Maqbool, [Muhammad Asif Hussain](#), Muhammad Umar Manzoor, High Temperature A.C. Conductivity Analysis of ZnO Nanoparticles Doped BaZr_{0.15}Ti_{0.85}O₃ Relaxer Ceramics, *Physica B*, **587**, 412147 (2020)
- 13) Muhammad Shoaib Butt, Adnan Maqbool, Mohsin Saleem, Malik Adeel Umer, Farhan Javaid, Rizwan Ahmed Malik, [Muhammad Asif Hussain](#), Zador Rehmand, Revealing the effects of micro-arc oxidation on the mechanical and degradation properties of Mg based biodegradable composites, *ACS Omega*, **5**, **23**, 13694–13702 (2020)
- 14) Muhammad Ramzan Abdul Karim, Ehsan Ul Haq, [Muhammad Asif Hussain*](#), Khurram Imran Khan, Muhammad Nadeem, Muhammad Atif, Arsalan Ul Haq, Muhammad Naveed, Muhammad Mubasher Alam, *Journal of Asian Architecture and Building Engineering*, (2020)
- 15) [Muhammad Asif Hussain*](#), Adnan Maqbool, Abbas Saeed Hakeem, Fazal Ahmad Khalid, Muhammad Asif Rafiq, Muhammad Shahzeb Khan, Muhammad Umer Farooq, Irfan Haider Abidi, Nabi Bakhsh, Spark Plasma Sintering of Hybrid Nanocomposites of Hydroxyapatite Reinforced with CNTs and SS316L for Biomedical Applications, *Current Nanoscience*, **15**, 1-5 (2019)
- 16) [Muhammad Asif Hussain*](#), Mobina Irshad, Sungho Park, Ehsan Ul Haq, Abbas Saeed Hakeem, Bong Gill Choi, Jung Won Kim, Porous Anodic Aluminum Oxide as an Efficient Support for Ruthenium Catalyzed Aerobic Oxidation of Alcohols and Amines - *Industrial & Engineering Chemistry Research* **58**, 23025–23031 (2019)
- 17) [Muhammad Asif Hussain](#), MinHo Yang, Hyung-Seok Jang, Sung-Yeon Hwang, Byung-Hun Um, Bong Gill Choi*, Jung Won Kim*, Two-dimensional heterogeneous ruthenium-molybdenum disulfide nanocatalyst for selective aerobic oxidation of amines, , *Industrial & Engineering Chemistry Research*, **55**, 7043–7047 (2016)
- 18) Muhammad Akmal, Ahmad Razaa, Muhammad Mudasser Khana, M Imran Khana, [Muhammad Asif Hussain](#), Effect of nano-hydroxyapatite reinforcement in mechanically alloyed NiTi composites for biomedical implant, *Materials Science and Engineering C*, **68**, 30-36 (2016)
- 19) Seunghwan Seok, [Muhammad Asif Hussain](#), Kyun Joo Park, Jung Won Kim*, and Do Hyun Kim*, Sonochemical synthesis of PdO@silica as a nanocatalyst for selective aerobic alcohol oxidation, *Ultrasonics Sonochemistry*, **28**, 178–184, (2016)
- 20) Muhammad Akmal*, [Muhammad Asif Hussain](#), Haris Ikram, Tahir Sattar, Sarah Jameel, Ju Young Kim, Fazal Ahmad Khalid, Jung Won Kim*, In-vitro electrochemical and bioactivity evaluation of SS316L reinforced hydroxyapatite functionally graded materials fabricated for biomedical implants, *Ceramics International*, **42**, 3855–3863, (2016)
- 21) Muhammad Akmal, Fazal Ahmad Khalid, [Muhammad Asif Hussain*](#), Interface diffusion reaction and mechanical characterization of 316L stainless steel -hydroxyapatite functionally graded materials for joint prostheses, *Ceramics International*, **41**, 14458–14467, (2015)

- 22) [Muhammad Asif Hussain](#), MinHo Yang, Tae Jae Lee, Jung Won Kim*, Bong Gill Choi*, High density decoration of noble metal nanoparticles on polydopamine-functionalized molybdenum disulphide, *Journal of Colloid and Interface Science*, **451**, 216–220, (2015)
- 23) [Muhammad Asif Hussain*](#), Adnan Maqbool, Fazal Ahmad Khalid, Muhammad Umer Farooq, Irfan Haider Abidi, Nabi Bakhsh, Waseem Amin, Improved sinterability of hydroxyapatite functionally graded materials strengthened with SS316L and CNTs fabricated by pressureless sintering, *Ceramics International*, **41**, 10125–10132 (2015)
- 24) Irfan Haider Abidi, Fazal Ahmad Khalid, Muhammad Umer Farooq*, [Muhammad Asif Hussain](#), Adnan Maqbool, Tailoring the pore morphology of porous nitinol with suitable mechanical properties for biomedical applications, *Materials Letters*, **154**, 17–20, (2015)
- 25) [Muhammad Asif Hussain](#), Adnan Maqbool, Fazal Ahmad Khalid, Nabi Bakhsh, Ali Hussain, Jamil Ur Rahman, Jong Kyu Park, Tae Gone Park, Jae Sung Song, Jae Hyun Lee, M.H. Kim* Mechanical properties of CNT reinforced hybrid functionally graded materials for bioimplants. *Transection of Nonferrous Metal Society China*, **24**, s90-s98, (2014)
- 26) Adnan Maqbool*, [Muhammad Asif Hussain](#), Fazal Ahmad Khalid, Nabi Bakhsh, Ali Hussain, Myong-Ho Kim, Mechanical characterization of copper coated carbon nanotubes reinforced aluminum matrix composites, *Materials Characterization*, **86**, 39-48 (2013)

Non-SCI Journals:

- 1) Tayyab Qureshi, Hafiz Muhammad Shoaib, Ussama Ali, Muhammad Hamid Siddiqi, [Muhammad Asif Hussain](#), Hafiz Umair Lateef, Comparison of Physio-Chemical Characteristics of Different Compost Samples, *International Journal of Thermal & Environmental Engineering*, **18** (1), 2021, 09-17
- 2) Tayyab Qureshi, [Muhammad Asif Hussain*](#), Tanveer Iqbal, Ehsan Ul Haq, Asif Nadeem Tabish, Muhammad Hamid Siddiqi, Thermal Characterization of Various Reduced Derived Fuel Materials for Energy Applications, *Key Engineering Materials*, **857** (2021) 1662-979
- 3) Muhammad Hamid Siddiqi, [Muhammad Asif Hussain*](#), Tanveer Iqbal, Asif Nadeem Tabish, Waqar Mahmood, Tayyab Qureshi, Combustion and Pyrolysis Study of Pakistani Coal, Rice Husk, and Their Blends via Thermogravimetric Analysis, *IEEE Explore*, 2018
- 4) K. H. S. Karimov, Fazal Ahmad Khalid, Muhammad Tariq Saeed Chani*, Abdual Mateen, [Muhammad Asif Hussain](#), Adnan Maqbool, Carbon Nanotubes Based Flexible Temperature Sensors, *Optoelectronics and Advanced Materials*, **6** (1-2) 212-214, (2012)
- 5) [Muhammad Asif Hussain](#), Nyanzi Joseph, Onyu Kang, Young-Hun Cho, Byung-Hun Um, Jung Won Kim, Supported metal nanoparticles: Their catalytic applications for selective alcohol oxidation, *Applied Chemistry for Engineering*, **27** (3), 227-238, (2016)
- 6) [Muhammad Asif Hussain](#) and Jung Won Kim*, Environmentally friendly synthesis of amide by metal-catalyzed nitrile hydration in aqueous medium, *Applied Chemistry for Engineering*, **26** (2), 128-131, (2015)
- 7) Adnan Maqbool*, Fazal Ahmad Khalid, [Muhammad Asif Hussain](#), Nabi Bakhsh, Synthesis of copper coated carbon nanotubes for aluminium matrix composites, *IOP Conf. Series: Materials Science and Engineering*, **60** (1), 012040 (2014).

SELECTED CONFERENCE PRESENTATIONS

- 1) Aerogels: A sustainable Solution for Heat Insulating Application, 3rd International Conference on Environment and Sustainable Development, GC University Lahore, 13, 14 September 2021
- 2) Influence of ZnO Microstructure and Impedance Properties of SrTiO₃ for High Efficiency of Thermoelectric, 2nd International Conference on Advanced Materials and Emerging Technologies (ICAMET-2021) 1st July 2021
- 3) Production of Biooil from Tamarix Aphylla (Khagal) Plant and Lignite Coal Blend using Microwave Pyrolysis, International Conference on Advances in Chemical Engineering and Science, ICACES-9th June, 2021
- 4) Investigating SO₂, NO_x, CO₂ and Particulate Emissions from Pulverized Combustion of Coal Blends Using Drop Tube Furnace, International Conference on Energy, Water and Environment – ICEWE- 31st March 2021
- 5) Flexible Piezo-Nanogenerator based Sensor for Structural Health Monitoring Applications, International Conference on Energy, Water and Environment – ICEWE- 31st March, 2021
- 6) **Muhammad Asif Hussain**, Tayyab Qureshi, Tanveer Iqbal, Asif Nadeem Tabish, Muhammad Hamid Siddiqui, Evaluation of Combustion Characteristics of Various Refused Derived Fuels for Energy Applications - 16th International Symposium on Advanced Materials (ISAM-16), Islamabad, Pakistan, 2019.
- 7) **Muhammad Asif Hussain**, Hybrid Nanocomposites of CNT Reinforced HAP and SS316L for Biomedical Applications, 15th International Symposium on Advanced Materials (ISAM-15), Islamabad, Pakistan, October 2017.
- 8) Umer Farooq, **Muhammad Asif Hussain**, Adnan Maqbool, Ti-Ni-Al Ternary Shape Memory Alloys for Biomedical Applications, 15th International Symposium on Advanced Materials (ISAM-15), Islamabad, Pakistan, October 2017.
- 9) **Muhammad Asif Hussain**, Muhammad Hamid Siddiqui, Tanveer Iqbal, Asif Nadeem Tabish, Tayyab Qureshi, Combustion and Pyrolysis Study of Pakistani Coal, Rice Husk, and Their Blends via TGA Analysis. 1st International Conference of Energy Conservation and Efficiency (ICECE-1)- November 2017
- 10) **Muhammad Asif Hussain**, Seung Kyu Hwang, Jung Won Kim*, A highly efficient selective oxidation of alcohol with a heterogeneous supported ruthenium catalyst at room temperature in air, The Korean Institute of Chemical Engineers, 2014 Spring Conference, Republic of Korea
- 11) Seung Kyu Hwang, **Muhammad Asif Hussain**, Jung Won Kim*, Ruthenium catalyst for effective heterogeneous oxidation of amines with air and at room temperature, The Korean Society of Industrial and Engineering Chemistry, 2014 Spring Conference, Republic of Korea.
- 12) **Muhammad Asif Hussain**, Jung Won Kim*, An efficient hydration of nitriles to amides in water by MnO₂ supported ruthenium catalyst, The Korean Society of Industrial and Engineering Chemistry, 2015 Fall Conference, Republic of Korea.
- 13) Seunghwan Seok, **Muhammad Asif Hussain**, Kyun Joo Park, Bong Gill Choi, Jung Won Kim and Do Hyun Kim*, A simple sonochemical synthesis of PdO@silica nanoparticle and its

application to aerobic selective alcohol oxidation, The Korean Institute of Chemical Engineers, 2015 Fall Conference, Republic of Korea

- 14) **Muhammad Asif Hussain**, Nyanzi Joseph, Hyeon Bin Kim, Seunghwan Seok, Do Hyun Kim, Jung Won Kim. Dehydrogenative decarbonylation of primary alcohols using efficient heterogeneous pdo@silica nanocatalyst, The Korean Institute of Chemical Engineers, 2016 Spring Conference, Republic of Korea
- 15) On Yu Kang, **Muhammad Asif Hussain**, Jung Won Kim, A facile synthesis of heterogeneous ruthenium@silica nanocatalyst and its application to the reduction of 4-nitrophenol, The Korean Institute of Chemical Engineers, 2016 Spring Conference, Republic of Korea.
- 16) 12th International Symposium on Advanced Materials (ISAM-12), Islamabad, Pakistan
- 17) MATTECH' 11: All Pakistan Conference on Materials and Technology, Topi, Pakistan

Co-CURRICULAR & EXTRA CURRICULAR ACTIVITIES

- ▶ Served as **Advisor** of **Society of Metallurgical and Materials Engineering (SOMAME)**, University of Engineering and Technology since January 2019.
- ▶ Worked as **executive member** of **International Graduate Student Society at Kangwon National University** from Sep 2012 to Aug 2016.
- ▶ Conducted an **Interactive Session** on Materials Science and Engineering at **MATTECH 2010** (All Pakistan Materials Conference).
- ▶ Conducted an **Interactive Session** on Materials Science and Engineering at **MATTECH 2011** (All Pakistan Materials Conference).
- ▶ Worked as **executive member** of **Graduate Student Society at GIKI** from January 2009 to May 2011.

LANGUAGES

- ▶ **English** (Fluent in reading, writing, and speaking)
- ▶ **Korean** (TOPIK Level III, Fluent in reading, writing, and speaking)
- ▶ **Arabic** (Basic)
- ▶ **Urdu, Saraki and Punjabi** (National and Maternal language)

PERSONAL PROFILE

Father's Name	Ghulam Hussain
Date of Birth	10 March, 1985
PEC Reg. No.	METAL/2117
NIC. No.	36302-3783296-9
Marital Status	Married

PEFERENCES

Prof. Dr. Jung Won Kim (*PhD Supervisor*)

Department of Energy and Chemical
Engineering, Kangwon National University,
Samcheok, South Korea

Ph. No. +82-335706543

Email: jwemye@kangwon.ac.kr

Dr. Abbas Saeed Hakeem (*Mentoring Teacher*)

Center of Research Excellence in Nanotechnology,
King Fahad University of Petroleum and Minerals,
Damam, Saudi Arabia

Ph. No. +966595435480

Email: ashakeem@kfupm.edu.sa

Professor Dr. Fazal Ahmad Khalid, SI, (*MS
Supervisor*)

Rector, Ghulam Ishaq Khan Institute of
Engineering Science and Technology, Topi,
KPK, Pakistan

Ex-Vice-Chancellor, University of Engineering
and Technology UET, Lahore, Pakistan.

Email: rector@giki.edu.pk

Prof. Dr. Basit Yameen (*Mentoring Teacher*)

Department of Chemistry and Chemical
Engineering, Lahore University of Management
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