

RESUME

Junaid Saleem

(PhD, CEng, MS, MSc, BSc)

RESEARCH INTERESTS

Advanced material synthesis using polymers, plastic wastes, CNTs and graphene. Sustainable Environment and Green Chemistry for circular economy. Renewable Energy using hydrogen fuel cells, polymer electrolytes & metal-oxide catalysts.

EDUCATION

PhD	Chemical and Biomolecular Engineering, Hong Kong University of Science & Technology (HKUST), Hong Kong. World Ranking: 14th	Dec. 2014
CEng	Chartered Engineering in Materials, Institute of Materials, Minerals, and Mining (IMMM), Engineering Council, U.K.	Nov. 2016
MS	Chemical Engineering, King Fahd University of Petroleum & Minerals (KFUPM), Saudi Arabia	Jul. 2008
MSc	Chemical Technology Applied Chemistry, University of Karachi, Pakistan	Dec. 2004
BSc	Chemical Technology Applied Chemistry, University of Karachi, Pakistan	Dec. 2003

EXPERIENCE

Project Lead Mar. 2017 – Present

Division of Sustainable Development, College of Science & Engineering, Hamad Bin Khalifa University (HBKU), Qatar Foundation, Qatar

1. Equivalent Lead Principal Investigator:

- Won grant proposal as the key investigator for National Priorities Research Program cycle 2019 (NPRP12S-0325-190443) entitled, "From Waste to Wealth: Eco-friendly production of super-sorbents from plastic waste". (Budget: 631,600 USD)

2. Project Lead: HBKU Innovation Grant Fund

- Won HBKU Innovation Fund as Project Lead. The project entitled, "Super absorbent films and aerogels using plastic wastes and polymers". (Budget: 50,000 QAR)
- Shortlisted in and ongoing Innovation Fund cycle 2 as Project Lead

3. Postdoc Fellow

- Assisted lead principal investigator in winning grant proposal for NPRP cycle 2018 (NPRP11S-0117-180328) entitled, "Pyrolysis of Qatar Waste Materials to Produce Agricultural/Landscaping Biochars". (Budget: 700,000 USD)
- Developing a research lab in the areas of polymers, plastic wastes, graphene and their composites.
- Guided and helped students in their research work.

Assistant Professor and Research Officer

Jan. 2015 - Feb. 2017

University of Karachi, Pakistan

1. Assistant Professor at the Department of Chemical Engineering and Visiting Faculty at the Department of Petroleum Technology, University of Karachi

- Taught Courses:
 - Chemical Process Principles (Year 1)
 - Engineering Economics (Year 3)
 - Petroleum Technology (Year 4)
 - Final Year Research Project (Year 4)
- Conducted workshops for faculty and students on Research Methodology
- Completed research project entitled, "Recovery of Zinc from Electric Arc Furnace (EAF) flue dust", as Principal Investigator under 'Higher Education Commission (HEC) Pakistan' grant proposal system from Sep. 2015 – July 2016

2. Research Officer at the Center for Nanotechnology, International Center for Chemical & Biological Sciences, University of Karachi

- Taught post-graduate course:
 - (Advanced Environmental Chemistry - CHEM 748)
- Conducted Research focusing nanotechnology for environmental applications

Researcher & Teaching Mentor

Feb. 2016 – Aug. 2016

Department of Mechanical Engineering, DHA Suffa University, Karachi, Pakistan

- Conducted workshops to train Faculty & Students with respect to 'Research Methodology'
- Organized workshops in support with Professional Development Center
- Development/Up-gradation of undergraduate Labs
- Linked DSU researchers to industrial and research groups in the domain of interest

Research Assistant**Sep. 2011 - Dec. 2014****Chemical and Biomolecular Engineering, Hong Kong University of Science & Technology, Hong Kong**

- Instructed undergraduate laboratory course; Chemical Engineering Laboratory- I (CENG 3910)
- Conducted Tutorials for the courses Heat and Mass Transfer (CENG 3220), and Separation Process (CENG 3210)
- Worked towards PhD degree in School of Engineering, ranked 14th in the world

Scientist II**Aug. 2008 - Aug. 2011****Deanship of Scientific Research, King Fahd University of Petroleum & Minerals, Saudi Arabia**

- Worked in a Research Support Unit, Research Infrastructure Development Unit & Project Management Unit
- Participated in a Project to suggest systematic improvement in University's Ranking under 'QS' and 'THE' World University Rankings
- Published one Patent in US Patent Office
- Engaged in peer review process of proposals and final reports of the submitted projects

Research Assistant**Aug. 2006 – Jul. 2008****Dept. of Chemical Engineering, King Fahd University of Petroleum & Minerals, Saudi Arabia**

- Instructed undergraduate course tutorials (Mass Transfer, Heat Transfer, Numerical Methods in Chemical Engineering), performed research in polymers, worked for academic development
- Worked towards M.Phil. (M.S.) degree

Production Officer**Oct. 2005 - Jul. 2006****SAMI Pharmaceuticals (Pvt.) Ltd., Pakistan**

- Overall monitoring of the following units: Compression, Coating, and Blistering

Trainee**Jan. 2005 - Mar. 2005****Siddiqsons Denim Mills Ltd., and Pakistan Refinery Ltd., Pakistan**

HONORS, AWARDS & GRANTS, and MEMBERSHIP

i. GRANTS

- **National Priority Research Program (NPRP12S-0325-190443)** **Grant: 631,600 USD**
 1. Won NPRP grant as the key investigator for the proposal entitled, "From Waste to Wealth: Eco-Friendly production of super-sorbents from plastic waste", 2019.
 2. My proposal was rated under category A which is the highest-ranking amongst awarded projects out of 354 proposals submitted by the top scientists.
- **Idea Development Grant Competition** **Grant: 50,000 QAR**

Won 'Hamad Bin Khalifa University - Idea Development Grant Competition' as Project Lead from 68 submitted projects under HBKU Entrepreneurship Program. The project was entitled, "Super-sorbent for oil and organic removal from wastewater", 2019
- **Aramco-KFUPM Collaboration** **Grant: 500,000 SAR**

Part of the joint collaborative research group led by Prof Ibnelwaleed Ali Hussain. The grant was awarded by Saudi-Aramco for the production of Sulfur-Extended Polymer for asphalt binder applications, 2007
- **National Priority Research Program (NPRP11S-0117-180328)** **Grant: 700,000 USD**

Assisted Prof. Gordon McKay as his postdoc in winning the NPRP award for the project entitled, "Pyrolysis of Qatar Waste Materials to Produce Agricultural/Landscaping Biochars", 2018
- **Higher Education Commission Pakistan** **Grant: 300,000 PKR**

Successfully completed the project entitled, "Recovery of Zinc from electric arc furnace (EAF) flue dust" as Assistant Professor and Principal Investigator, 2015

ii. AWARDS & HONORS

- **HKUST President's Cup Award**

It is a university wide undergraduate Research and Innovation Competition. I was a PhD student at Hong Kong University of Science & Technology and guided a group of undergraduate students on their way to win this prestigious award in 2012-2013. I published the extended form of this work later in J. of Materials Chemistry A (IF ~ 11)
- **Best Startup Pitch Presentation**

Selected amongst the best startup pitch presentations at Idea Development Grant competition at Qatar Science & Technology Park - A technology hub for innovation, Doha, Qatar, 2019
- **Best Presentation Award**

Awarded best oral presentation award at 8th Global Conference on Global Warming GCCW-2019 for oral presentation entitled, "Functionalized 3D graphene aerogel for oil sorption from waste water", Doha, Qatar, 2019

- **Best Presentation Award**
Awarded best oral presentation award at 8th Global Conference on Global Warming GCCW-2019 for oral presentation entitled, “Ultra-fast super absorbent polymeric films and aerogels using plastic wastes for oil clean-up from wastewater”, Doha, Qatar, 2019
- **Hong Kong Post-Graduate Studentship** **Award: 600,000 HKD**
Awarded HKUST post-graduate studentship from 2011 – 2014 for the duration of PhD study
- **KFUPM Research Assistant Fellowship** **Award: 24,000 SAR**
Awarded KFUPM research assistant fellowship from 2006-2008

iii. REFEREEING

- Review grant proposals submitted under top international grant funding organizations as an expert in the area of “Polymers and Plastic Waste”
- Review manuscripts for SCI indexed journals

iv. MEMBERSHIP

- Engineering Council U.K. as Chartered Engineer with membership number 638448

TRAININGS & CERTIFICATES

- **Technology, Leadership and Entrepreneurship**
Four months’ education and training (using case studies) at Hong Kong University of Science & Technology
- **Entrepreneurship Training at Qatar Science & Technology Park (QSTP)**
This 2-month training program designed to provide aspiring entrepreneurs with Training, Coaching and Mentorship. To take tech-based service/product from idea stage to a validated prototype
- **IELTS**
Got band score of 8.0 out 9 scale.

INVITED TALKS & WORKSHOPS CONDUCTED

- Invited Talk on “A Systematic Approach Towards Entrepreneurship, Local Perspective”, University of Karachi, Pakistan, 2019
- Invited Talk on “A Systematic Approach Towards Entrepreneurship, Local Perspective”, PAF KIET (Pakistan Air Force: Karachi Institute of Economics & Technology), Pakistan, 2019
- Invited Talk on “Abstract Writing” at Department of Chemical Engineering, NED University of Science & Technology, Karachi, Pakistan, 2017.
- Four days’ workshop conducted on “Research Methodology” at DHA Suffa University, Karachi, Pakistan, 2016. It was attended by faculty from Management, Social Sciences, Engineering, and Applied Sciences
- Three days’ workshop conducted on “Research Methodology” at Department of Chemical Engineering, University of Karachi, Pakistan, 2015

PUBLICATIONS

Patent

- [1] Ibnelwaleed A Hussein, Mohammed H Al Mehthel, Hamad I Al-Abdul Wahhab, Saleh H Al Idi, and **Junaid Saleem**, "Sulfur Extended Polymer for use in Asphalt Binder and Road Maintenance", Patent Publication Number US 9012542 B2, 2010
- [2] **Junaid Saleem**, and Gordon McKay, "Methods of producing sorbents using plastic waste and ultra-thin porous sorbent films using plastic waste, Patent Application Number US 62/924,425, 2019

Book Chapters

- [1] **Junaid Saleem**, Usman Bin Shahid, and Gordon McKay, "Environmental Nanotechnology – Management of Nano-waste (nanomaterials)", Handbook of Environmental Materials Management, Springer, 2018
- [2] **Junaid Saleem**, Alireza Bazargan, John Barford, and Gordon McKay, "Oil spill remedy using bi-axially oriented polymer films", Water Pollution XII, WIT Press, 2014 (ISSN: 1743-3541)

Journal Publications

- [1] **Junaid Saleem**, Ping Gao, John Barford, and Gordon McKay, "Development and characterization of novel composite membranes for fuel cell applications", Journal of Materials Chemistry A: Materials for energy and sustainability, 1, (45), 2013, p. 14335-14343. **Impact Factor: 10.7**
- [2] Oliveira, **Junaid Saleem**, Alireza Bazargan, José Leandro da S. Duarte, Gordon McKay, and LucasMeilia, "Sorption as a rapidly response for oil spill accidents: A material and mechanistic approach", Journal of Hazardous Materials, 407, 2020, 124842. **Impact Factor: 9.0**
- [3] **Junaid Saleem**, Muhammad Adil Riaz, and Gordon McKay, "Oil sorbents from plastic wastes and polymers: A Review", Journal of Hazardous Materials, 341, 2018, p. 424-437. **Impact Factor: 7.7**
- [4] Alireza Bazargan, Z Wang, JP Barford, **Junaid Saleem**, Gordon McKay, "Optimization of the removal of lignin and silica from rice husks with alkaline peroxide", Journal of Cleaner Production, 2020, <https://doi.org/10.1016/j.jclepro.2020.120848>. **Impact Factor: 6.4**
- [5] **Junaid Saleem**, Chao Ning, John Barford, and Gordon McKay, "Combating oil spill problem using plastic waste", Waste Management, 44, 2015, p. 34-38. **Impact Factor: 5.5**
- [6] **Junaid Saleem**, GL Dotto, G McKay, "Current scenario and challenges in using plastic wastes as oil absorbents", J of Env Chem Eng., 2020, <https://doi.org/10.1016/j.jece.2020.104822>. **Impact Factor: 4.3**
- [7] SK Safdar Hossain, **Junaid Saleem**, S. U. Rahman, S. M. Javaid. Zaidi, Gordon McKay, and Chin Kui Cheng, "Synthesis and Evaluation of Copper Supported Titanium Oxide Nanotubes as Electrocatalyst for the Electrochemical Reduction of Carbon Oxide to Organics", Catalysts, 9 (3) 2019, p. 298. **Impact Factor: 3.5**
- [8] Muhammad Adil Riaz, Gordon McKay, and **Junaid Saleem**, "3D graphene-based nanostructured materials as sorbents for cleaning oil spills and for the removal of dyes and miscellaneous pollutants present in water", Environmental Science & Pollution Research, 24 (36), 2017, p. 27731–27745. **Impact Factor: 3.1**

- [9] M Hijab, **Junaid Saleem**, P Parthasarathy, HR Mackey, G McKay, "Two-stage optimisation for malachite green removal using activated date pits", Biomass Conversion and Biorefinery, In Press, 2020, <https://doi.org/10.1007/s13399-020-00813-y>. **Impact Factor: 2.6**
- [10] **Junaid Saleem**, Usman Shahid, Mohammad Hijab, Hamish Mackey, and Gordon McKay, "Production and Applications of Activated Carbons as Adsorbents from Olive Stones", Biomass Conversion and Biorefinery, 1, 2019, p. 1-28. **Impact Factor: 2.6**
- [11] **Junaid Saleem**, Alireza Bazargan, John Barford, and Gordon McKay, "Super-fast oil uptake using porous ultra-high molecular weight polyethylene sheets", Polymers for Advanced Technologies, 25, (10), 2014, p. 1181-1185. **Impact Factor: 2.6**
- [12] P.C.C Siu, L.F. Koong, **Junaid Saleem**, John Barford, and Gordon McKay, "Equilibrium and Kinetics of Copper Ions Removal from wastewater by Ion Exchange", Chinese Journal of Chemical Engineering, 24 (1), 2016, p. 94-100. **Impact Factor: 2.6**
- [13] Zhixuan Wang, **Junaid Saleem**, John Barford, and Gordon McKay, "Preparation and characterization of modified rice husks by biological delignification and acetylation for oil spill cleanup, Environmental Technology, 1, 2020, p. 1-12. **Impact Factor: 2.2**
- [14] **Junaid Saleem**, Safdar Hossain SK, Amir Al-Ahmed, Ateequr Rahman, Gordon McKay, and Mohammed. M. Hossain, "Evaluation of Pd nanoparticles decorated CeO₂-MWCNT nanocomposite as electrocatalyst for formic acid fuel cells", Journal of Electronic Materials, 47 (4), 2018, p. 2277-2289. **Impact Factor: 1.8**
- [15] **Junaid Saleem**, Alireza Bazargan, John Barford, and Gordon McKay, "Application of strong porous polymer sheets for superior oil spill recovery", Chemical Engineering & Technology, 38, 2015, p. 1-8. **Impact Factor: 1.5**
- [16] Safdar Hossain SK, **Junaid Saleem**, A. Al. Ahmed, M.M. Hossain, M. N. Shaikh, S. U. Rahman, and Gordon McKay, "Preparation and Evaluation of Nickel Oxide-Carbon Nanotube Supported Palladium as Anode Electrocatalyst for Formic Acid Fuel Cells", International Journal of Electrochemical Sciences, 11, 2016, p. 2686-2708. **Impact Factor: 1.6**
- [17] **Junaid Saleem**, and Gordon McKay, "Waste HDPE bottles for selective oil sorption", Asia-Pacific Journal of Chemical Engineering, 11, 2016, p. 642-645. **Impact Factor: 1.0**
- [18] Akanksha Kalra, Hadi P, Hui CW, Mackey H, Ansari TA, **Junaid Saleem** and Gordon McKay, "Adsorption of dyes from water on to bamboo-based activated carbon - error analysis method for accurate isotherm parameter determination", Journal of Water Science & Engineering, 2019, 1(1), p. 1-11. **Impact Factor: First Edition, Cite Score 3.0**
- [19] Ming-Ho To, Pejman Hadi, Chi-Wai Hui, Carol Sze Ki Lin, Al-Ansari Tareq, Junaid Saleem, Prakash Parthasarathy, and Gordon McKay, "Waste biomass gasification char derived activated carbon for pharmaceutical carbamazepine removal from water", Resources Environment and Information Engineering, 1, 1, 2019, p. 36-44. **Impact Factor: First Edition – Invitation Paper**
- [20] Zeeshan Al Hameed, **Junaid Saleem**, Syed Sajid Hussain, Ahsan Abdul Ghani, and Hira Lal, "Study of indigenous fluorspar as metallurgical flux", Journal of Engineering & Applied Sciences, University of Engineering and Technology, Peshawar, 36, 1, ISSN 2518-4571, 2017. **Impact Factor: -**
- [21] Ahsan Abdul Ghani, **Junaid Saleem**, Zeeshan A Hameed, Hira Lal and Muhammad Shoaib, "Study of Zinc Leaching of EAF Flue Dust Using Sodium Hydroxide", Pakistan Journal of Analytical Environmental Chemistry, 17, 2016, p. 33 – 37. **Impact Factor: -**

- [22] Zeeshan A. Hameed, **Junaid Saleem**, Hira Lal, Ahsan Abdul Ghani and Muhammad Shoaib, "Effect of Acid Treatment on the Recovery of Valuable Metals from Steel Plant Exhaust", *Journal of Basic & Applied Sciences*, 12, 2016, p. 323-328. **Impact Factor:** -

Conferences

- [1] **Junaid Saleem**, Salman Ismail, Usman Bin Shahid, and Gordon McKay, "Functionalized 3D graphene aerogel for oil sorption from wastewater", 8th Global Conference on Global Warming GCCW-2019, Doha, Qatar, Apr. 2019
- [2] **Junaid Saleem**, and Gordon McKay, "From Waste to Wealth", 8th Global Conference on Global Warming GCCW-2019, Doha, Qatar, Apr. 2019
- [3] **Junaid Saleem**, and Gordon McKay, "Kinetics of oil sorption from plastic waste", CSME-CFDSC Congress 2019, Ontario, Canada, June 2019
- [4] **Junaid Saleem**, Usman Bin Shahid, and Gordon McKay, "Development of polymeric aerogel using plastic wastes for oil cleanup from wastewater", *Proceedings of the World Congress on Engineering and Computer Science*, San Francisco, USA, Oct. 2018
- [5] Chao Ning, Xu Meng, Pejman Hadi, **Junaid Saleem**, and Gordon McKay, "Wastes to Value Added Environmental Treatment using E-waste for Toxic Heavy Metal Removal from Wastewater", *Qatar University Life Science Symposium*, Doha, Qatar, Dec. 2017
- [6] **Junaid Saleem**, and Gordon McKay, "Synthesis of novel polymeric films for energy and environmental applications", *Qatar Foundation Annual Research Conference (ARC'16) Proceedings: Vol. 2016 1, EEOP1032 (DOI: 10.5339/qfarc.2016.EEOP1032)*, Doha, Qatar, Mar. 2016
- [7] Zeeshan Al Hameed, **Junaid Saleem**, Ahsan Abdul Ghani, Hira Lal, and Syed Sajid Hussain, "Hydrometallurgical extraction of zinc from indigenous electric arc furnace dust", *In Press, Proceedings of AMPE, 2015, Karachi, Pakistan, 2015*
- [8] Zeeshan Al Hameed, **Junaid Saleem**, Syed Sajid Hussain, Ahsan Abdul Ghani, and Hira Lal, "Characterization of Pakistani fluorspar for metallurgical slag making application", *In Press, Proceedings of AMPE, 2015, Karachi, Pakistan, 2015*
- [9] **Junaid Saleem**, Alireza Bazargan, John Barford, and Gordon McKay, "Oil Sorbent from Plastic Wastes", *Innovations of Green Process Engineering for Sustainable Energy and Environment 2014 - Topical Conference at the 2014 AIChE Annual Meeting*, Pages 111-124, Atlanta, USA, Nov. 2014
- [10] **Junaid Saleem**, Safdar Hossain SK, John Barford, and Gordon McKay, "Development and characterization of palladium based catalyst using modified CNT for fuel cell applications", *ASME 2014 12th Fuel Cell Science, Engineering & Technology Conference*, Boston, USA, Jun. 2014
- [11] **Junaid Saleem**, Alireza Bazargan, John Barford, and Gordon McKay, "Oil spill remedy using bi-axially oriented polymers", 12th International conference on Modeling, Monitoring and Management of Water Pollution, Algarve, Portugal, May 2014
- [12] Alireza Bazargan, Pejman Hadi, Len Foong, **Junaid Saleem**, and Gordon McKay, "Value added products from wastes", *InnoAsia 2013*, Hong Kong, Dec. 2013
- [13] Ibbelwaleed A. Hussein, Mohammed H. Al-Mehthel, Hamad I. Al-Abdul Wahhab, Saleh H. Al-Idi, **Junaid Saleem**, and Nagendiran Shanmugam, "Synthesis of Sulfur Extended Polymer for use in Asphalt Binder", *SPE-ANTEC*, Ohio, USA, Apr. 2013