

DR. SAUD HASHMI PH.D.

Professor | Chairperson

Department of Chemical Engineering

&

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Career Objectives

- Committed to fostering intellectual growth through dynamic teaching methodologies and impactful research, while advancing knowledge and make meaningful contributions to academia and society.
- More than **20 years** of teaching, research and industrial experience.

Education

2011-2014/03	Chonbuk National University, South Korea, Ph.D (Chemical Engg).
2007-2010/12	NED University of Engineering and Technology, Karachi, Pakistan, Master (Environmental Engg).
2001-2005/12	Dawood College of Engineering & Technology, Karachi, Pakistan, Bachelor (Chemical Engg).

Work Experience

2022/07-to date	NED University of Engineering & Technology, Department of Chemical Engineering, Professor Chairperson.
2022/07-to date	NED University of Engineering & Technology, Department of Chemical Engineering, Departmental OBE Cell Convener.
2021/01-to date	NED University of Engineering & Technology, Department of Polymer & Petrochemical Engineering, Professor Ag.Chairperson
2020/12-2021/01	NED University of Engineering & Technology, Department of Polymer & Petrochemical Engineering, OBE Coordinator.
2017/08-2020/12	NED University of Engineering & Technology, Department of Polymer & Petrochemical Engineering, Associate Professor.
2014/12-2017/07	NED University of Engineering & Technology, Department of Chemical Engineering, Final Year Design Project Coordinator.
2014/12-2017/07	NED University of Engineering & Technology, Department of Chemical Engineering, Assistant Professor.
2009-2014/12	NED University of Engineering & Technology, Department of Chemical Engineering, Lecturer.
2006-2009/07	ICI PTA Pvt. Limited (LOTTE PAKISTAN PTA), Shift Manager.

Other Responsibilities

ISO 9001: 2015 certified Lead Auditor by Lloyds Register LRQA.

ISO Internal Quality Auditor.

Member Quality Enhancement Cell Department of Chemical Engineering

Member Board of Studies, Board of Faculty, Industrial Advisory Board,
Board of Review and Academic Council.

Member Department Outcome Based Education Cell (DOBEC)

Achievements

Research grant of Rs. 3 million awarded by **State Bank** of Pakistan (Ref No. GSD (Proc.II / CMD-Banknotes Composting/09677/2025-2026)

Research grant of Rs. 11.765 million awarded by Higher Education Commission (**HEC**) of Pakistan (Ref No. 20-17074/NRPU/R&D/HEC/2021-2020)

Research grant of Rs 2.5 million awarded by Sindh Higher Education Commission (**SHEC**) of Pakistan (Ref No. SHEC/SRSP/E&T-5/126/2022-23).

HEC Approved Ph.D. Supervisor.

PhD Supervision

- ❖ **Doctoral** thesis supervised Title “**Liquid Fuel Production by Co-Pyrolysis of Waste Engine Oil and Waste Frying Oil**”.
- ❖ **Doctoral** thesis supervised Title” **Application of Nano materials in Water-Based Drilling Fluid for The Mitigation of Shale Swelling**”.
- ❖ **Doctoral** thesis supervised Title” **Nitrile Butadiene Rubber Nano-Composites for High Performance Seal Applications**”.
- ❖ **Doctoral** thesis supervised Title” **Development of Metal Oxide Based Engineered Nano Materials for Sustainable Agriculture Application**”.

Industrial Projects

- ❖ Recycling of waste plastic ABS, HDPE and LDPE in to construction block. **(Project from Bigger Bricks completed 2024).**
- ❖ Conversion of waste cooking oil and waste plastic into diesel like fuel. **(Project from R4Recycling completed 2023)**
- ❖ Investigate the Root-Cause of fighter Aircraft Rubber Tyre Failure **(Project from Pakistan Air Force completed in 2022)**
- ❖ Development of Shampoo Bottles with recycles HDPE. **(Project from Unilever Pakistan completed in 2022)**
- ❖ Development of high pressure lithium grease. **(Project from PAK Grease pvt limited completed in 2020)**

Publications

International Journal Papers

JCR: 56 | Total Citations: 1250 | h-index: 21 | i10-index: 29

ORCHID ID: (<https://orcid.org/0000-0003-4993-0498>),

Google Scholar ID: **Dr. Saud Hashmi**

- 1) Farheen Suleman; Sajid Muhsbat; Fahim Uddin; **Saud Hashmi**; Azry Borhan; Farooq Ahmad; Naveed Ahmad, “Influence of co-pyrolysis temperature on the characteristics of diesel-like fuel produced from waste frying and engine oils”, **Journal of Analytical and Applied Pyrolysis**, Volume 193, Part 1, January 2026, 107352. **IF: 6.2**
- 2) Kainat Amin Bora, **Saud Hashmi**, Zainul Abideen “Applying chemical and bio-mediated synthesis of manganese oxide nanoparticles for enhancing growth and nutrient fluxes in Arka anamika plants under saline conditions”, **Journal of Plant Nutrition**, 01 Apr 2025. **IF: 2.4.**
- 3) Shaine Mohammadali, Javed Haneef, **Saud Hashmi** “Transforming the efficiency of water-based mud: rutile-TiO₂-activated carbon composite” **Chemical Papers**, 09 March 2025. **IF: 2.2.**
- 4) Shaine Mohammadali, Javed Haneef, **Saud Hashmi**, “Investigating the influence of rutile-TiO₂ and MWCNTs composite on shale swelling and mechanical properties”, **Chemical Papers**, 11 January 2025. **IF: 2.2**
- 5) Asra Nafees, **Saud Hashmi**, Rafiq Ahmed, “Investigating the Effect of Nano-Crystalline Cellulose in Nitrile Butadiene Rubber Matrix for Improved Thermo-Mechanical Properties”, **Processes** 2024, 12(11), 2350. **IF: 3.5.**
- 6) Shaine Mohammadali Lalji, Javed Haneef, **Saud Hashmi**, “Improving the characteristics of water-based mud using titanium dioxide doped with activated carbon prepared from grapefruit waste material”, **Chemical Papers**, Volume 78, pages 7651–7665, 30 July 2024. **IF: 2.2**
- 7) Shu-Ming Cui, **Saud Hashmi**, Wen-Qiang Li, Stephan Handschuh-Wang, Cheng-Tian Zhu, Shi-Chang Wang, Pian-Pian Yang, Guang-Ming Zhu, Florian J Stadler, “Influence of cellulose nanofibers on the behavior of Pickering emulsions. Part II: Thixotropy and dynamic-mechanical tests”, **Journal of Rheology**, **APRIL 22 2024, J. Rheol.** 68, 463–477 (2024). **IF: 3.3**
- 8) Shaine Mohammadali Lalji, Javed Haneef, **Saud Hashmi**, “Application of graphene oxide/titanium dioxide nanoparticle on the rheological, filtration and shale swelling characteristics in water-based mud system: experimental and full factorial design study”, **Chemical Papers**, 29 April 2024, *Chem. Pap.* (2024). **IF: 2.2**
- 9) Shaine Mohammadali Lalji, Javed Haneef, **Saud Hashmi**, “Mitigating Paleocene age Ranikot shale formation swelling characteristics using carbon supported anatase-titanium dioxide (MWCNT/TiO₂, GO/TiO₂ and AC/TiO₂) nanomaterial water-based mud—chemical and rock interaction study”, **Chemical Papers**, 18 March 2024, *Chem. Pap.* (2024). **IF: 2.2**
- 10) Shaine Mohammadali Lalji, Javed Haneef, **Saud Hashmi**, “Formulation of a newly developed shale-swelling model as a function of compaction pressure and temperature”, **Multiscale and Multidisciplinary Modeling, Experiments and Design**, 15 March 2024, *Model. Exp. and Des.* (2024). **IF: 2.2**

- 11) Shaine Mohammadali Lalji, Javed Haneef, **Saud Hashmi**, “Exploring the effect of AC/TiO₂ nanoparticles and polyanionic cellulose on water-based drilling fluid properties: an integrated approach of experiment and CCD”, **Chemical Papers**, **09 January 2024**, Volume 78, pages 2661–2680, (2024). **IF: 2.2**
- 12) Syed Imran Ali, Shaine Mohammadali Lalji, **Saud Hashmi**, Zahoor Awan, Amjad Iqbal, Essam A Al-Ammar, “Risk quantification and ranking of oil fields and wells facing asphaltene deposition problem using fuzzy TOPSIS coupled with AHP”, **Ain Shams Engineering Journal**, **Jan 2024**, pages 102-289. **IF: 4.79**
- 13) Maria Hasnain, Rida Zainab, Faraz Ali, Zainul Abideen, Jean Wan Hong Yong, Ali El-Keblawy, **Saud Hashmi**, Emanuele Radicetti, “Utilization of microalgal-bacterial energy nexus improves CO₂ sequestration and remediation of wastewater pollutants for beneficial environmental services”, **Ecotoxicology and Environmental Safety**, Volume 267, 15 November 2023, 115646.
- 14) Shi-Chang Wang, Shu-Tong Du, **Saud Hashmi**, Shu-Ming Cui, Ling Li, Stephan Handschuh-Wang, Xuechang Zhou, Florian J Stadler, “Understanding Gel-Powers: Exploring Rheological Marvels of Acrylamide/Sodium Alginate Double-Network Hydrogels”, **Molecules**, **June 2023**, **28(12)**, 4868.
- 15) Syed Imran Ali, Shaine Mohammadali Lalji, Muhammad Rizwan, Zahoor Awan, **Saud Hashmi**, Syed Danish Rasool, “Factorial Analysis of Experimental Parameters Effecting Asphaltene Precipitation in Dead Crude Oils”, **Arabian Journal for Science and Engineering**, **March 2023**, pages 1-15. **IF: 2.01**
- 16) Saud Hashmi, Rafiq Ahmed, Adeel ur Rehman, Alberto García-Peñas, Awan Zahoor, Firoz Khan, Mohammad Vatankhah-Varnosfaderani, Thamraa Alshahrani, Florian J Stadler, “Study of the synergistic influence of zwitterionic interactions and graphene oxide on water diffusion mechanism and mechanical properties in hybrid hydrogel network”, **Chemosphere** Volume 314, **February 2023**, 137710. **IF: 9**
- 17) Syed Imran Ali, Shaine Mohammadali Lalji, Zahoor Awan, **Saud Hashmi**, Ghani Khan, Muhammad Asad, “Comprehensive performance analysis of kinetic models used to estimate asphaltene adsorption kinetics on nanoparticles”, **Chemical Papers** **2022**, Pages 1-15. **IF: 2.09**
- 18) Samra Asad, Awan Zahoor, Faaz Ahmed Butt, **Saud Hashmi**, Faizan Raza, Inam Ul Ahad, Jabir Hakami, Sami Ullah, Amir Al-Ahmed, Firoz Khan, Maria Christy, “Recent Advances in Titanium Carbide MXene (Ti₃C₂T_x) Cathode Material for Lithium–Air Battery”, **ACS Applied Energy Materials** **2022**, Volume 5, Issue 10, Pages 11933-11946. **IF: 6.9**
- 19) Syed Imran Ali, Shaine Mohammadali Lalji, Zahoor Awan, **Saud Hashmi**, Muhammad Noman, Nimra Yousaf, “Performance analysis of kinetic models in predicting asphaltene precipitation rate under different conditions of temperature and percentage of precipitant molecular weight”, **Arabian Journal of Geosciences** **2022**, Springer Pages-1475, Volume 15, Issue 17. **IF: 2.01**
- 20) Cui, S.-M.; **Saud Hashmi**; Li, W.-Q.; Handschuh-Wang, S.; Zhu, C.-T.; Wang, S.-C.; Yang, P.-P.; Huang, Y.-F.; Zhu, G.-M.; Stadler, F.J. “Influence of Cellulose Nanofibers on the Behavior of Pickering Emulsions. Part 1. Microscopy and Startup Flow Test”. **Materials** **2022**, **15**, 8285.
<https://doi.org/10.3390/ma15238285>. **IF: 4.2**
- 21) Shehroze Tahir Khan, Maaz Akhtar, Murtuza Mehdi, Nauman Malik, **Saud Hashmi**, Faaz Butt, “Characterizations of a Cost-Effective Single Component Polymer for Stretchable and Flexible Microelectromechanical Systems Applications”, **JOURNAL OF TESTING AND EVALUATION**, 2022 - AMER SOC TESTING MATERIALS **IF: 1.33**.

- 22) Kainat Amin Bora, [Saud Hashmi](#), Faisal Zulfikar , Zainul Abideen, Haibat Ali , Zamin Shaheed Siddiqui and Kadambot H. M. Siddique, “Recent progress in biomediated synthesis and applications of engineered nanomaterials for sustainable agriculture”, **Frontiers in Plant Science** Front. Plant Sci. 13:999505.

doi: 10.3389/fpls.2022.999505 **October 2022 I.F : 6.67**
- 23) Maria Hasnain, Zainul Abideen, [Saud Hashmi](#), Shagufta Naz & Neelma Munir, “Assessing the potential of nutrient deficiency for enhancement of biodiesel production in algal resources”, **Biofuels**, **05 August 2022. I.F: 2.95**
- 24) Ghadia Ahmed, Faaz Ahmed Butt, Faizan Raza, [Saud Hashmi](#), G Gnana Kumar, Maria Christy, “The study of different redox mediators for competent Li–air batteries”, **Journal of Power Sources**, **Vol-538 pages-231379, Elsevier 1 August 2022. I.F: 9.12**
- 25) Shaine Mohammadali Lalji, Syed Imran Ali, Rafiq Ahmed, [Saud Hashmi](#), Zahoor Ul Hussain Awan, Yunus Jawed,” Study the effect of mineral content on water diffusion mechanism and swelling characteristics in shale formation of Pakistan”, **Arabian Journal of Geosciences**, **2022. IF:0.5**
- 26) [Saud Hashmi](#), Taqvi, S.A.A. Abideen, Z. Ahmed, J.P. Talha, M. Bhatti, M.A. Shahid, H. Naqvi, S.R. Almomani, F., “Simulation of steam gasification of halophyte biomass for syngas production using Aspen Plus®”, **Biomass Conversion and Biorefinery**, **2022, IF:4.6.**
- 27) Shaine Mohammadali Lalji, Syed Imran Ali, Rafiq Ahmed, [Saud Hashmi](#), Zahoor Ul Hussain Awan, Syed Wajahat Ali Qazi, “Influence of graphene oxide on salt-polymer mud rheology and Pakistan shale swelling inhibition behavior”, **Arabian Journal of Geosciences**, **2022. IF:0.5**
- 28) [Saud Hashmi](#), Asim Mushtaq, Rafiq Ahmed, Raza Muhammad Khan, Zaeem Uddin Ali, “Synthesis and Application of Hydrogels for Oil-Water Separation.”, **Iranian Journal of Chemistry and Chemical Engineering (IJCCE)**. **2022 IF:0.67**
- 29) Florian J Stadler, Shuming Cui, [Saud Hashmi](#), Stephan Handschuh-Wang, Wenqiang Li, Shichang Wang, Zhi-Chao Yan, Guangming Zhu, “Multiple interval thixotropic test (miTT)—an advanced tool for the rheological characterization of emulsions and other colloidal systems”, **Rheologica Acta**, **2022. IF:2.5**
- 30) [Saud Hashmi](#), Saad Nadeem, Alberto García-Peñas, Rafiq Ahmed, Awan Zahoor, Mohammad Vatankhah-Varnoosfaderani, and Florian J. Stadler, “Study the Effects of Supramolecular Interaction on Diffusion Kinetics in Hybrid Hydrogels of Zwitterionic Polymers and CNTs”, **Macromol. Chem. Phys. Jan 2022. IF:2.6.**
- 31) SM Lalji, SI Ali, R Ahmed, [Saud Hashmi](#), ZUH Awan, “Comparative performance analysis of different swelling kinetic models for the evaluation of shale swelling”, **Journal of Petroleum Exploration and Production Technology**, **24 November 2021. IF:2.07**
- 32) María Moral-Zamorano , Isabel Quijada-Garrido , Verónica San-Miguel , Berna Serrano , Juan Baselga , [Saud Hashmi](#), Florian J. Stadler, and Alberto García-Peñas, “Concentration Effect over Thermoresponse Derived from Organometallic Compounds of Functionalized Poly(N-isopropylacrylamide-co-dopamine Methacrylamide)”, **Polymers** **2021, 13, 3921. IF:4.3**

- 33) Alberto García-Peñas , Weijun Liang , **Saud Hashmi** , Gaurav Sharma, Mohammad Reza Saeb and Florian J. Stadler “Hydrogen Bonds in Blends of Poly(N-isopropylacrylamide), Poly(N-ethylacrylamide) Homopolymers, and Carboxymethyl Cellulose”, **J. Compos. Sci.** **2021, 5, 240.**
- 34) Sajid Muhsbat, Muhammad Tufail, **Saud Hashmi**, “Production of Diesel-like Fuel by Co-Pyrolysis of Waste Lubricating Oil and Waste Cooking Oil”, **Biomass Conversion and Biorefinery accepted 5 May 2021 (In Press). IF: 2.602.**
- 35) Awan Zahoor, Raza Faizan, Khaled Elsaid, **Saud Hashmi**, Faaz Ahmed Butt, Zafar Khan Ghouri, “Synthesis and experimental investigation of δ -MnO₂/N-rGO nanocomposite for Li-O₂ batteries applications”, **Chemical Engineering Journal Advances Volume 7, 15 August 2021, 100115.**
- 36) Zahoor Hussein Awan, Bilal Kazmi, **Hashmi Saud**, Faizan Raza, Sahzeb Hasan, Farzana Yasmin, “ Process System Engineering (PSE) Analysis on Process and Optimization of the Isomerization Process”, **Iran. J. Chem. Chem. Eng. Research Article Vol 40 (1) 2021 IF: 1.01.**
- 37) Awan Zahoor, Zafar Khan Ghouri, **Saud Hashmi**, Faizan Raza, Shagufta Ishtiaque, Saad Nadeem, Inayat Ullah, and Kee Suk Nahm, “Electrocatalysts for the Lithium air batteries: Current status and the challenges”. **ACS Sustainable Chemistry & Engineering 7 (17), 14288-14320 2019 IF: 6.2.**
- 38) **Hashmi S**, Saad Nadeem, Awan Zahoor, Adeel ur Rehman, Ahsen Abdul Ghani “Synthesis, Applications and Swelling Properties of Poly (Sodium Acrylate-Coacrylamide) Based Superabsorbent Hydrogels” **Journal of the Chemical Society of Pakistan 41 (4), 668-678 October 2019 IF: 0.28.**
- 39) Syed Kazmi, Zahoor Awan , **Saud Hashmi** “Simulation Study of Ionic Liquid Utilization for Desulfurization of Model Gasoline” **Iranian Journal of Chemistry and Chemical Engineering (IJCCE) 38 (4), 209-221 July 2019 IF: 1.01.**
- 40) **Hashmi S**, Awan Zahoor, Zafar Khan Ghouri “Thermo-Rheological Complexity of Novel Branch Polyethylene Synthesized by High Performance Bulky -Diimine Nickel (II) Catalysts”, **Materials Focus 7 (4), 573-581, August 1, 2018.**
- 41) Bilal Kazmi, Awan Zahoor, **Hashmi S** “Viability of Shale Gas and CO₂ Removal using 1-Butyl-3-Methylimidazolium Tetrafluoroborate”, **International Journal of Innovative Science and Research Technology, Volume 3, Issue 5, May – 2018**
- 42) Bilal Kazmi, Awan Zahoor, **Hashmi S**, Zafar Khan Ghouri "Desulfurization of the dibenzothiophene (DBT) by using imidazolium-based ionic liquids(ILs)" **Materials Physics and Chemistry April-(2018) Volume 2.**
- 43) Zahoor Awan, Zafar Khan Ghouri , **Hashmi S** "Influence of Ag nanoparticles on state of the art MnO₂ nanorods performance as an electrocatalyst for lithium air batterie" **Hydrogen Energy, Volume 43, Issue 5, 1 February (2018), Pages 2930-2942. IF:3.5**
- 44) Mohammad Vatankhah-Varnoosfaderani, **Hashmi S**, Florian J. Stadler, Amin GhavamiNejad ” Mussel-inspired 3D networks with stiff-irreversible or soft-reversible characteristics - It's all a matter of solvent” **Polymer Testing, Volume 62, Pages 96-101, June 2017 IF: 2.24.**
- 45) Stadler FJ, **Hashmi S**, GhavamiNejad A, Vatankhah-Varnoosfaderani M , " Rheology of dopamine containing polymers ", ANNUAL TRANSACTIONS OF THE NORDIC RHEOLOGY SOCIETY, VOL. 25, 2017.

- 46) **Hashmi S**, GhavamiNejad A, , Mohammad Vatankhah-Varnoosfaderani, Florian J. Stadler “Effect of H₂O and reduced graphene oxide on the structure and rheology of self-healing stimuli responsive catecholic gels” **Rheologica Acta**, Volume 55, Issue 2, pp 163–176, **February 2016 IF: 1.8**
- 47) Mohammad Vatankhah-Varnoosfaderani, Amin GhavamiNejad, **Hashmi S**, Florian J. Stadler “Hydrogen Bonding in Aprotic Solvents, a New Strategy for Gelation of Bioinspired Catecholic Copolymers with N – Isopropylamide”, **Macromolecular Rapid Communication**, Volume 36, Issue 5, pages 447–452, **March 2015 IF: 4.6**.
- 48) **Hashmi S**, Mohammad Vatankhah-Varnoosfaderani, Amin GhavamiNejad, Francis O. Obiweleozor, Bing Du, Florian J. Stadler, “Self-associations and temperature dependence of aqueous solutions of zwitterionically modified N-isopropylacrylamide copolymers”, **Rheologica Acta**, DOI 10.1007/s00397-015-0837-z, **February 2015 IF: 1.8**.
- 49) **Hashmi S**, GhavamiNejad A, Stadler FJ, “Oscillations in modulus in solutions of graphene oxide and reduced graphene oxide with grafted poly-N-isopropylamide”, **Soft Matter**, **2015**, *11*, 1315-1325 **IF: 4.2**
- 50) G. Gnana Kumar , **Hashmi S**, C. Karthikeyan, Amin GhavamiNejad, Mohammad Vatankhah-Varnoosfaderani, Florian J. Stadler, “Carbonaceous nanocomposite hydrogels – versatile building blocks for microbial fuel cell applications”, **Macromolecular Rapid Communication**, Volume 35, Issue 21, pages 1861–1865, November **2014 IF: 4.6**
- 51) GhavamiNejad A, **Hashmi S**, Mohammad Vatankhah-Varnoosfaderani, Florian J. Stadler, “Network formation in graphene oxide composites with surface grafted PNIPAM chains in aqueous solution characterized by rheological experiments”, **Phys. Chem. Chem. Phys.**, **2014**, *16*, 8675-8685. **IF: 3.8**
- 52) Francis O. Obiweleozor, Amin GhavamiNejad, **Hashmi S**, Mohammad Vatankhah-Varnoosfaderani, Florian J. Stadler, “A NIPAM–Zwitterion Copolymer: Rheological Interpretation of the Specific Ion Effect on the LCST”, **Macromolecular Chemistry and Physics**, **2014**, DOI: 10.1002/macp.201300778. **IF: 2.3**
- 53) Mohammad Vatankhah-Varnoosfaderani, **Hashmi S**, Amin GhavamiNejad, Florian J. Stadler, “Rapid Self-Healing and Triple Stimuli Responsiveness of a Supramolecular Polymer Gel Based on Boron-Catechol Interactions in a Novel Water-Soluble Mussel-Inspired Copolymer”, **Polym. Chem.**, **2014**, *5*, 512-523 **IF: 5.4**
- 54) Mohammad-Vatankhah-Varnoosfaderani, Amin GhavamiNejad, **Hashmi S**, Florian J. Stadler “Mussel-Inspired pH-triggered Reversible Foamed Gel – the Surprising Effect of Water”, **Chemical Communications** **2013**, 49, 41, 4685-4687. **IF: 6.3**
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- 56) **Hashmi S**, Obiweleozor F, GhavamiNejad A, Vatankhah-Varnoosfaderani M, Stadler FJ, “On-line Observation of Hydrogels during Swelling and LCST-induced changes”, **Korea-Australia Rheology Journal**, **2012**, *24*, 3, 191-198. **IF: 1.2**.

Professional memberships

Member of Pakistan Engineering Council, bearing registration No: *CHEM/6907*

Life Fellow “The Institution of Engineers Pakistan” Reg No: *F-2076 / KAR-198*

Languages

- English
- Korean

Reference

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