

DR. MUHAMMAD HARIS HAMAYUN

ASSISTANT PROFESSOR, DEPARTMENT OF CHEMICAL ENGINEERING,
COMSATS UNIVERSITY ISLAMABAD, LAHORE CAMPUS



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EDUCATION

Ph.D.	Department of Chemical Engineering University of Engineering and Technology, Lahore (CGPA: 3.95/4.00)	Aug 2022
M.Sc.	Institute of Chemical Engineering and Technology University of the Punjab, Lahore (CGPA: 3.93/4.00)	Nov 2017
B.Sc.	Institute of Chemical Engineering and Technology University of the Punjab, Lahore (CGPA: 3.95/4.00)	May 2013
F.Sc.	Govt. Islamia College, Civil Lines Lahore Grade (%): A+ (81%)	Aug 2008
Matric	Sharaf Foundation High School, Lahore Grade (%): A+ (87%)	Aug 2006

PROFESSIONAL EXPERIENCE

Assistant Professor	Jan 2023 – to date
Department of Chemical Engineering COMSATS University Islamabad, Lahore Campus.	
Lecturer	Feb 2020 – Jan 2023
Department of Chemical Engineering COMSATS University Islamabad, Lahore Campus.	

Research Associate Aug 2015 – Feb 2020

Department of Chemical Engineering

COMSATS University Islamabad, Lahore Campus.

Assistant Manager Utilities and Process Aug 2014 – Jul 2015

Engro Eximp Agri Products (Pvt.) Ltd.

Graduate Trainee Engineer Aug 2013 – Aug 2014

Engro Eximp Agri Products (Pvt.) Ltd.

Graduate Trainee Engineer May 2013 – Aug 2013

Nimir Chemicals (Pvt.) Ltd.

HONORS AND AWARDS

Gold Medalist 2013

B.Sc. Chemical Engineering

Silver Medalist 2017

M.Sc. Chemical Engineering

Aspen HYSYS User Certification (Valid till March 2025) 2022

AspenTech

TEACHING & RESEARCH EXPERIENCE

COMSATS University Islamabad, Lahore Campus

Assistant Professor, Department of Chemical Engineering Jan 2023 – to date

- Incharge of Process Modeling and Simulation Lab and Chemical Reaction Engineering Lab.
- Member of Catalysis and Reaction Engineering Research Group; published fourteen (14) research articles in internationally reputed journals with a cumulative impact factor of 60.102. Co-supervised one MS research dissertation and currently supervising one MS research-work. Also, serving as an approved reviewer for various journals.

- Currently, working as Incharge Marketing Committee, Co-Incharge Admissions Section and Senior Student Advisor.
- Worked as a vital member/secretary of Continual Quality Improvement Cell (CQIC), responsible for preparing OBE related documentation i.e., PLO and PEO Attainment Mechanism, moderation of course-folder, lab folders and their audits, conducting OBE training etc. Preparation of agenda and minutes of meetings. Key Member of the team which conducted two successful visits of the Pakistan Engineering Council (PEC) to assess the education system under Washington Accord Level II OBE Accreditation, resulting in the 3 years and 4 years (highest-possible) accreditation for the department in 2019 and 2023 respectively.
- Worked in Final year design project committee, developed infrastructure of FYDP as per OBE mechanism, conducted various evaluations, and preparation of result. Supervised / Co-Supervised of 8 dissertations of BS Chemical Engineering.
- Worked as Batch Advisor of the department, resolved critical issues of students, done students registration on time, monitored the progress of critical students and fortnightly meetings with them. Organized Intra-Department Sports Gala for Spring-2017 and Fall-2017.
- Worked as Safety Officer in the department. Implementation of safety standards in labs as per the OBE system.
- Worked as a member of the Curriculum Review Committee, prepared and revised curriculums of various engineering programs, which include: (1) BS Chemical Engineering, (2) BS Polymer and Petrochemical Engineering, (3) BS Process Systems and Automations, (4) BS Process Systems Engineering, (5) MS Process Systems Engineering, (6) MS Chemical Engineering, and (7) PhD Chemical Engineering.

Courses Taught:

- Process Modeling and Simulation (Fall-19, Fall-20, Fall-21, Fall-22, Fall-23).
- Simultaneous Heat and Mass Transfer Operations (Fall-15 to Fall-20)
- Chemical Reaction Engineering (Spring-23, Fall-23, and Spring-24)
- Chemical Process Design and Simulations (Spring-21 and Spring-22).
- Chemical Engineering Plant Design (Fall-23)

Journal Publications (Cumulative Impact Factor = 60.102, h-index = 08):

- Research Interests include Process Simulation, Process Optimization, and Catalysis.

Published / Accepted:

- **Hamayun, M.H.;** Ramzan, N.; Faheem, M.; **2023**, Exergoeconomic Analysis of an LNG Integrated – Air Separation Process, *Korean Journal of Chemical Engineering*, Vol.: 40, Pages: 3017-3028, <https://doi.org/10.1007/s11814-023-1567-z> (**Impact Factor = 2.7**).
- Maqbool, M.A.; Khan, J.; **Hamayun, M.H.;** Ahmed, F.; Hussain, M.; **2023**, Optimal Retrofitting of MCH-Toluene Dehydrogenation system: Energy and Technoeconomic Analysis, *Energy Conversion and Management*, Vol.: 286, <https://doi.org/10.1016/j.enconman.2023.117049> (**Impact Factor = 10.4**).
- Oyewo, A.T.; Oluwole, O.O.; Ajide, O.O.; Omoniyi, T.E.; Akhter, P.; **Hamayun, M.H.;** Kang, B.S.; Park, Y-K.; Hussain, M.; **2023**, Physico–chemical, Thermal and Micro- structural Characterization of Four Common Banana Pseudo-Stem Fiber Cultivars in Nigeria, *Journal of Natural Fibers*, Vol.: 20, Issue: 01, <https://doi.org/10.1080/15440478.2023.2167031> (**Impact Factor: 3.5**).
- **Hamayun, M.H.;** Ramzan, N.; Hussain, M.; Faheem, M.; **2022**, Conventional and Advanced Exergy Analyses of an Integrated LNG Regasification – Air Separation Process, *Industrial & Engineering Chemistry Research*, Vol.: 61, Issue: 07, Pages: 2843 – 2853, <https://doi.org/10.1021/acs.iecr.1c03730> (**Impact Factor = 4.2**).
- Oyewo, A.T.; Oluwole O.O.; Ajide, O.O.; Omoniy, T.E.; **Hamayun, M.H.;** Hussain, M.; **2022**, Experimental and Theoretical Studies to Investigate the Water Absorption Behavior of Carbon/Banana Fibre Hybrid Epoxy Composite, *Materials Chemistry and Physics*, Vol.: 285, <https://doi.org/10.1016/j.matchemphys.2022.126084> (**Impact Factor = 4.6**).
- **Hamayun, M.H.;** Hussain, M.; Shafiq, I.; Ashfaq, A.; Park, Y-K.; **2022**, Investigation of the thermodynamic performance of an existing steam power plant via energy and exergy analyses to restrain the environmental repercussions: A simulation study, *Environmental Engineering Research*, Vol.: 27, Issue: 01, Pages: 170 – 177, <https://doi.org/10.4491/eer.2020.683> (**Impact Factor = 3.5**).

- Shafiq, I.; Shafique, S.; Mudassir, M.; **Hamayun, M.H.**; Hussain, M.; **2022**, Recommendations on the Firefighting System Design, Erection and Safe Operation, *Journal of Pipeline Systems Engineering and Practice*, Vol.: 13, Issue: 01, [https://doi.org/10.1061/\(ASCE\)PS.1949-1204.0000592](https://doi.org/10.1061/(ASCE)PS.1949-1204.0000592) (**Impact Factor = 2.0**).
- Shafiq, I.; Hussain, M.; Shafique, S.; **Hamayun, M.H.**; Mudassir, M.; Nawaz, Z.; Ahmed A.; Park, Y-K.; **2021**, A comprehensive numerical design of firefighting systems for onshore petroleum installations, *Korean Journal of Chemical Engineering*, Vol.: 38, Issue: 09, Pages: 1768 – 1780, <https://doi.org/10.1007/s11814-021-0820-6> (**Impact Factor = 3.146**).
- Rashid, R.; Shafiq, I.; Iqbal, M.J.; Shabir, M.; Akhter, P.; **Hamayun, M.H.**; Ahmed, A.; Hussain, M.; **2021**, Synergistic effect of NS co-doped TiO₂ adsorbent for removal of cationic dyes, *Journal of Environmental Chemical Engineering*, Vol.: 09, Issue: 04, <https://doi.org/10.1016/j.jece.2021.105480> (**Impact Factor = 7.968**).
- **Hamayun, M.H.**; Ramzan, N.; Hussain, M.; Faheem, M.; **2021**, Reply to Variny et al. Comment on “Hamayun et al. Evaluation of Two-Column Air Separation Processes Based on Exergy Analysis. *Energies* 2020, 13, 6361”, *Energies*, Vol.: 14, Issue: 20, Article: 6445, <https://doi.org/10.3390/en14206445> (**Impact Factor = 3.252**).
- Asif, F.; **Hamayun, M.H.**; Hussain, M.; Hussain, A.; Maafa, I.M.; Park, Y-K.; **2021**, Performance Analysis of the Perhydro-Dibenzyl-Toluene Dehydrogenation System – A Simulation Study, *Sustainability*, Vol.: 13, Issue: 11, Article: 6490, <https://doi.org/10.3390/su13116490> (**Impact Factor = 3.889**).
- **Hamayun, M.H.**; Ramzan, N.; Hussain, M.; Faheem, M.; **2020**, Evaluation of Two-Column Cryogenic Air Separation Processes Based on Exergy Analysis, *Energies*, Vol.: 13, Issue: 23, Article: 6361, <https://doi.org/10.3390/en13236361> (**Impact Factor = 3.004**).
- **Hamayun, M.H.**; Maafa, I.H.; Hussain, M.; Aslam, R.; **2020**, Simulation study to investigate the effect of operational conditions on Methylcyclohexane dehydrogenation, *Energies*, Vol.: 13, Issue: 01, Article: 206, <https://doi.org/10.3390/en13010206> (**Impact Factor = 3.004**).
- **Hamayun, M.H.**; Hussain, M.; Maafa, I.H.; Aslam, R.; **2019**, Integration of hydrogenation and dehydrogenation systems for hydrogen storage and electricity

generation-Simulation Study, *International Journal of Hydrogen Energy*, Vol.: 44, Issue: 36, Pages: 20213 – 20222, <https://doi.org/10.1016/j.ijhydene.2019.06.053> (Impact Factor = 4.939).

Under Review:

- Rashad, M.R.; Jamil, F.; Hussain, M.; Inayat, A.; Akhter, P.; Hamayun, M.H.; Ahsan, A.; Shanableh, A.; Ghenai, C.; Al-Muhtaseb, A.; Show, P-L.; Chew, K.W.; Park, Y-K.; **2023**, Zero-Carbon Solution: Microalgae as a Low-Cost Feedstock for Fuel Production and Carbon Sequestration, *Chemical Engineering Journal*.

Conference Papers:

- **Hamayun, M.H.**; Ramzan, N.; Hussain, M.; Faheem, M.; **2020**. A Comparison of Cryogenic Air Separation Processes Based on Exergy Analysis, *2020 Virtual AIChE Annual Meeting*, San Francisco, CA.
- **Hamayun, M.H.**; Omar Q.M.; Ijaz, A.; Saleem, M.; **2016**. Energetic and Exergetic Analysis of 2.97 MW Rice Husk Fired Steam Turbine Power Plant in an Existing Fertilizer Industry by Using Aspen HYSYS® V8.8, *3rd Conference on Sustainability in Process Industry (SPI 2016)*, pp: 200.
- Saleem, M.; Omar Q.M.; **Hamayun, M.H.**; **2016**. Entropy Generation and Work Lost Analysis of Rice Husk Fired Thermal Power Plant: A Case Study, *3rd Conference on Sustainability in Process Industry (SPI 2016)*, pp: 50.

REVIEWER ROLE

Approved reviewer of the three journals namely (1) Processes, (2) Energies, and (3) Sustainability. Reviewed multiple articles received from the following journals:

- Advances in Materials Science and Engineering (Impact Factor = 2.098)
- Cleaner Engineering and Technology (ISI Indexed)
- Chemical Engineering Research and Design (Impact Factor = 4.119)
- Sustainability (Impact Factor = 3.889)
- Processes (Impact Factor = 3.352)

- Reactions (ISI Indexed)
- Hydrogen (ISI Indexed)

THESIS SUPERVISED / CO-SUPERVISED

BS Chemical Engineering

- A plant design project on the production of 100 metric tons per day of sustainable ammonia using renewable energy, **2023** (In-Progress).
- A plant design project on the petrol and diesel production from 100 metric tons/day of waste plastic, **2023** (In-Progress).
- A plant design project on the production of 500 metric tons per day of nitric acid from ammonia, **2022**.
- A plant design project on the production of 100 metric tons per day of cyclohexane from benzene, **2022**.
- A plant design project on the production of 20 metric tons per day of cumene by UP Q-Max process, **2022**.
- A plant design project on the production of 2500 metric tons per day of ammonia by holder topsoe process, **2021**.
- A plant design project on the production of 200 metric tons per day of styrene via catalytic dehydrogenation of ethylbenzene, **2021**.
- A plant design project on the production of 30,000 barrels per day of ultra-low sulfur diesel by diesel hydrodesulfurization process, **2021**.
- A plant design project on production of 1200 kmol per day of hydrogen from biogas, **2020**.
- A plant design project on gasification of 30 tons per day of bagasse to produce syngas, **2016**.

MS Chemical Engineering

- **Moeen Ali Rashad:** Biodiesel production using waste cooking oil by novel heterogeneous catalyst synthesized from waste biomass (Role: Supervisor, In-Progress, **2023**).

- **Farea Asif:** Dehydrogenation of Perhydro-dibenzyltoluene for Hydrogen Storage: A Simulation Study (Role: Co-Supervisor, **2021**).

TRAINING / WORKSHOP ATTENDED

- Workshop on Entrepreneurship for Engineers organized by Pakistan Engineering Council (1 CPD point)
- Workshop on Development of Technical Team & Execution of a Project, organized by Pakistan Engineering Council (0.5 CPD point)
- Workshop on Development of Technical Team & Execution of a Project – more on the implementation side, organized by Pakistan Engineering Council (0.5 CPD point)
- Workshop on Complex Engineering Problem, organized by DUET, Karachi (0.5 CPD point)
- Workshop on Entrepreneurship Development by Managing Technology and Innovation in Water and Wastewater Treatment Projects, organized by Pakistan Engineering Council (0.5 CPD point)
- Workshop on HI-Tech Enterprises and Supervisory Control and Data Acquisition (SCADA) System Software, organized by Pakistan Engineering Council (0.5 CPD point).

LANGUAGES

- **Urdu:** Native Language
- **English:** Intermediate Listener, Novice Speaker, Advanced Reading, and Writing

COMPUTER SKILLS

- ASPEN (Aspen Plus, Aspen HYSYS, Aspen Exchanger Design and Rating, Aspen Plus Dynamics, Aspen Economic Analyzer)
- MS Office (Excel, Word, PowerPoint, Visio)

INTERESTS / HOBBIES

- Cricket
- Football

- Newspaper reading

REFERENCES

Dr. Murid Hussain, (Associate Professor/Formal HoD and Chairman)

Department of Chemical Engineering,

COMSATS University Islamabad, Lahore Campus.

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Dr. Asim Laeeq Khan, (Associate Professor/Head of the Department)

Department of Chemical Engineering,

COMSATS University Islamabad, Lahore Campus.

Email: alaeqkhan@cuilahore.edu.pk

Dr. Muhammad Faheem, (Associate Professor/Director Postgraduate Studies)

Department of Chemical Engineering,

University of Engineering and Technology, Lahore.

Email: faheem@uet.edu.pk

Dr. Naveed Ramzan, (Professor/Dean Chemical, Metallurgical and Polymer Engineering)

Department of Chemical Engineering,

University of Engineering and Technology, Lahore.

Email: drnramzan@uet.edu.pk