

	Rafiq Ahmed Associate Professor Department of Polymer & Petrochemical Engineering, NED University of Engineering & Technology, Karachi, Pakistan	Personal Information: Date of Birth: 15-11-1973 CNIC No. : 42201-0766589-1 Marital status: Married 🏠 House 279 Street 18 Area 37/C Landhi No.3 Karachi No. 75160, Karachi ☎ +92-021-(0)3413457675 ✉ rafiqahmed222@yahoo.com ahmedr@neduet.edu.pk
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Career Objective:

A position in a well reputed university where I can further develop my teaching and research skills in the field of Polymer Science and Engineering.

Teaching and Research Interest:

- Polymer rheology and implication of structure development
- Polymer structure-property relationship
- Complex polymeric systems
- Polymer (nano)composites
- Bio-polymers

Education:

2006 – 2011

Doctor of Philosophy (PhD)

Dissertation: Poly(lactic acid) stereocomplex formation in the melt: limitations and prospectives (**ISBN: 978-90-386-2890-5**)

[<https://doi.org/10.6100/IR719381>]

Supervisors: Prof. Dr. P.J. Lemstra and Dr. Denka Hristova-Bogaerds

Laboratory of Polymer Technology,
Department of Chemical Engineering and Chemistry,
Eindhoven University of Technology, Eindhoven,
The Netherlands

1996 – 1997

Master of Science (M.Sc.) (First Division)

Dissertation: Synthesis of Hematite Particles with Tailored Morphology for Magnetic Tape Applications

Supervisor: Prof. Dr. Najma Shams (Late)

Department of Applied Chemistry,
University of Karachi, Karachi, Pakistan

1993 – 1996

Bachelor of Science (B.Sc.) (First Division)

Department of Applied Chemistry,

University of Karachi, Karachi, Pakistan

1993	Additional Mathematics Board of Intermediate Education Karachi.
1990-1992	Higher Secondary Certificate (First Division) Board of Intermediate Education Karachi.
1989	Secondary School Certificate (First Division) Board of Secondary Education Karachi.

Additional Academic Certificates:

1. Title awarded “**Registered Polymer Scientist RPK**” (Dutch name: Register Polymeerkundige) after completion of four modulus of **postgraduate courses** from the National Dutch Research School (PTN) which includes:
(i) Polymer Chemistry (module A) (ii) Polymer Physics (module B) (iii) Polymer Properties (module C) (iv) Polymer Rheology and processing (module D & E).
 2. “**Higher Education Teaching Certificate**” (October 01, 2019 to December 13, 2019) awarded by NED University of Engineering & Technology.
 3. “**Introduction to Radiation Protection**” (September 07, 2009) offered by Radiation Protection Department, Eindhoven University of Technology, Eindhoven, The Netherlands.
 4. “**Communication, Language and Technology Course: Writing Articles + Abstracts**” (Autumn 2008) offered by the Eindhoven University of Technology, The Netherlands.
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Professional Experience:

2012 – Present	Assistant Professor Department of Polymer & Petrochemical Engineering NED University of Engineering and Technology, Karachi-Pakistan
2000 – 2012	Lecturer in Physical Chemistry Government Degree Science and Commerce College Landhi/Korangi-06
1999 – 2000	Quality Control Chemist (Pakistan State Oil – Karachi Pakistan)
1998 – 1999	Dyeing Supervisor (Dawood Shabbir Industries, Karachi Pakistan)
1997 – 1998	Research and Development Manager (R & D Manager) (Hub-Pak Salt Refinery, Hub, Balochistan, Pakistan)

PhD/Master Dissertation:

PhD Dissertation:

1. **Co-Supervised:** Dissertation Title: “Training on “**Development of SAR as per HEC Guidelines**” **[COMPLETED 2025]**
2. **Co-Supervised:** “*Harnessing Food Waste for the Development of Edible Active Coatings for Enhanced Shelf Life of Climacteric Foods*” **[In-Progress]**

Master Dissertations:

1. Principal Supervisor (2018):

Dissertation Title: “*Enhanced Crystallization of Polypropylene with Nanoscale Clarifiers*”

Candidate: Ms. Sadaf Meraj (M. Engg student)”.

Trainings/Courses/Workshops

1. Training on “**Development of SAR as per HEC Guidelines**” (November 2024) organized by Quality Enhancement Cell (QEC), NED University of Engineering & Technology.
2. Training on “**An Awareness about University-wide Policies/Systems**” (February 20, 2024) organized by QEC, NED University of Engineering & Technology.
3. Training on “**International Ranking Criteria: KPIs & Goal Setting**” (November 22, 2023) organized by QEC, NED University of Engineering & Technology.
4. Training on “**Ensuring Quality in Higher Education: A prospect of HEC Graduate policy – 2023**” (October 05, 2023) organized by QEC, NED University of Engineering & Technology.
5. Training on “**ASTM COMPASS Database**” (November 22, 2022) organized by Director, Business Development (EMEA) ASTM International and HEC Pakistan.
6. Training on “**Accessing Wiley Journals and Publication Tips for Authors and Researchers (HEC)**” (October 31, 2022) organized by HEC Pakistan and Wiley Publishers.
7. Course on “**Higher Education Teaching Certificate**” (October 01, 2019 to December 13, 2019) awarded by NED University of Engineering & Technology.
8. Training on “**Outcome Based Education**” (December 26-30, 2016) organized by QEC, NED University of Engineering & Technology.

9. Training on “**Financial Management**” (October 16-19, 2015) organized by QEC, NED University of Engineering & Technology.
10. Training on “**Quality Assurance in Education**” (April 17, 2015) organized by QEC, NED University of Engineering & Technology.
11. Workshop on “**Developing Industry Driven Technologies**” (January 05, 2015) organized by ORIC NED, Pakistan Scientific and Technological Information Centre (PASTIC) and Institute of Research Promotion (iRP).
12. Training on “**Technical Computing with MATLAB**” (December 08-12, 2014) organized by QEC, NED University of Engineering & Technology.
13. International workshop on “**Fundamentals of Intellectual Property**” (September 23, 2013) organized by Commercial Law Development Program (CLDP), Office of the General Counsel, US Department of Commerce in collaboration with NED University of Engineering & Technology and HEC Pakistan.
14. Workshop on “Computer Aided Engineering (CAE): Application in Research” (October 3 & 4, 2012) organized by Department of Automotive & Marine Engineering, NED University of Engineering & Technology.

Publications

Journal Publications:

1. 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**, **2350**.
2. Sameera Zaki, Saeeda Nadir Ali, Amtul Qayoom, **Rafiq Ahmed**, Aiman Rasheed Khan, “Green synthesis, spectroscopic and theoretical studies on molecular charge-transfer complex of linagliptin with 2, 3-dichloro-5,6-dicyano-1,4-benzoquinone, chloranilic acid and ninhydrin”, **Journal of Molecular Liquids**, **2024**, **401**, **124696**.
3. **Rafiq Ahmed** , Asim Mushtaq, Raza Muhammad Khan , Saud Hashmi and Zaeem Uddin Ali “Effect of Xanthan Gum Content on the Rheological Behaviour of Mayonnaise”, **Pakistan Journal of Science and Industrial Research, Series A: Physical Science**, **2024**, **67A(1)**, **1-10**.

4. Saud Hashmi , Asim Mushtaq, Raza Muhammad Khan , **Rafiq Ahmed** and Zaeem Uddin Ali “Drinking Water Quality Improvement by Removal of Salinity Using Wetland”, **Pakistan Journal of Science and Industrial Research, Series A: Physical Science**, 2024, 67A(1), 28-37.
5. 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**, 2023, 314, 137710.
6. Amtul Qayoom, Saeeda Nadir Ali, **Rafiq Ahmed**, Neha Kanwal and Shazia Nisar “Synthesis, Characterization and Statistical Optimization of Hydrophobic/Oleophilic Polystyrene Coated ZnO-Cotton Composite as Vegetable Oil Adsorbent”, **Journal of the Chemical Society of Pakistan**, 2023, 45, 368-381.
7. Nadia Khan, Asim Mushtaq, **Rafiq Ahmed**, Raza Muhammad Khan, Zaeem Uddin Ali, “Poly-Naphthalene Sulphonate Based Concrete Admixture”, **Iranian Journal of Chemistry and Chemical Engineering**, 2023, 42(8), 2466-2482.
8. **Rafiq Ahmed**, Asim Mushtaq, Saud Hashmi, Raza Muhammad Khan, Muhammad Ali, Zaeem Uddin Ali, “Development of Polymer-Modified Concrete Using Ethylene Vinyl Acetate Copolymer”, **Iranian Journal of Chemistry and Chemical Engineering**, 2023, 42(10), 3338-3347.
9. Ahmed Saleem, Asim Mushtaq, Raza Muhammad Khan, **Rafiq Ahmed**, Zaeem Uddin Ali, “Enhance the Corrosion Resistance of Underground Petroleum Tanks with the use of Fiberglass Reinforced Composite”, **Iranian Journal of Chemistry and Chemical Engineering**, 2023, 42(8), 2529-2537.
10. Saud Hashmi, Asim Mushtaq, **Rafiq Ahmed** and Zaeem Uddin Ali, “Synthesis and Characterization of Reduced Graphene Oxide from Indigenous Coal: A Non-Burning Solution”, **International Journal of Membrane Science and Technology**, 2022, 9, 1-12.
11. 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, 15, 612.
12. Shaine Mohammadali Lalji, Syed Imran Ali, **Rafiq Ahmed**, Saud Hashmi, Zahoor Ul Hussain Awan, Yunus Jawed., “Study the effects of mineral content on water diffusion mechanism and swelling characteristics in shale formations of Pakistan”, **Arabian Journal of Geosciences**, 2022, 15, 864.
13. **Rafiq Ahmed**, Asim Mushtaq, Saud Hashmi, Sindhia Abbasi and Zaeem Uddin Ali, “ To Explore the Effect of Injection Molding Processing Parameters on Crazing in Acrylic Polymers”, **Journal of the Chemical Society of Pakistan**, 2022, 44(6), 94-309.

14. Ikhlauque Ahmed Bhutto, Abdul Nasir Laghari, **Rafiq Ahmed**, Jawad Ahmed Khoso, Afaque Ahmed Bhutto, “To Explore the Effect of Modified Seashell on the Thermo-Mechanical Properties of Polymer Matrix Composite”, **Quest Research Journal**, 2022, 20(2), 99-105.
 15. 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**, 2022, 41(12), 4151-4164.
 16. Nadia Khan, Syed Ali Ammar Taqvi, **Rafiq Ahmed**, Bilal Kazmi, “Investigating the Effect of Temperature, Molar Ratio of Ethylene Glycol to Oil, and Catalyst Amount on Production Yield Bio Lube from Neem Seed Oil”, **Iranian Journal of Chemistry and Chemical Engineering**, 2022, 41(10), 3591-3599.
 17. 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”, **Macromolecular Chemistry and Physics**, 2022, 223, 2100348.
 18. Shaine Mohammadali Lalji, Syed Imran Ali, **Rafiq Ahmed**, Saud Hashmi, Zahoor Ul Hussain Awan, “Comparative performance analysis of different swelling kinetic models for the evaluation of shale swelling”, **Journal of Petroleum Exploration and Production Technology**, 2021, 12, 1237-1249.
 19. **Rafiq Ahmed** and Kausar Ali Syed, “Enhanced Mechanical Properties of Organo-Clay Based UHMWPE Nanocomposite Films”, **Journal of Basic & Applied Sciences**, 2016, 12, 226-230.
 20. **Rafiq Ahmed** and Kausar Ali Syed, “Synthesis of Superabsorbent Polymer (SAP) via Industrially Preferred Route”, **Journal of Basic & Applied Sciences**, 2016 12, 383-387.
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Conference Paper/Presentations

1. 2nd International Conference on Advanced Materials and Process Engineering (AMPE) **December 12-13, 2017: “Effect of Xanthan Gum Concentration on the Rheological Properties of Commercial Tomato Ketchup”**, **Rafiq Ahmed**, Raza Muhammad Khan, Asra Nafees, Abdul Raheem, organized by NED university of Engineering & Technology.
2. 2nd International Conference of Advanced Materials and Process Engineering (AMPE) **December 12-13, 2017: “To Explore Polymer Cure of De-Emulsified Cutting Fluids”**, **Rafiq Ahmed**, H. Taqi, R.M. Khan, S.G.Hussain, H. Arif, K.A. Syed, organized by NED university of Engineering & Technology.

3. 1st International Conference of Advanced Materials and Process Engineering (AMPE) **December 14-15, 2015: “Enhanced Mechanical Properties of Organo-clay based UHMWPE nanocomposite Films” Rafiq Ahmed**, Kausar Ali Syed, Asra Shabbir, Maria Idrees, Maryam Ansari, Iqra Majeed organized by NED university of Engineering & Technology.
 4. 1st International Conference of Advanced Materials and Process Engineering (AMPE) **December 14-15, 2015: “Synthesis of Super-Absorbent Polymer (SAP) via Industrially Preferred Route” Rafiq Ahmed**, M. Qaiser, S.M. Shujaat, **Waqar Ahmed**, M. Tahir, S. Imran Ali, organized by NED university of Engineering & Technology.
 5. International Conference on Nanomaterials and Nanotechnology (ICCN) (**April 7 – 9, 2014**): **“Enhanced Stereocomplex Poly(lactic acid) (sc-PLA) Crystallization using Organo-clay”** organized by Federal Urdu University of Arts , Science & Technology, Karachi.
 6. Dutch Polymer Days (DPD), Veldhoven, the Netherlands (2011) **“Enhanced PLA stereocomplex formation in the melt processed binary PDLA/PLLA blends via nanocomposite formation”**; Rafiq Ahmed, Denka Hristova-Bogaerds, P.J. Lemstra.
 7. EUPOC 2011, Gargnano, Italy (2011) **“Stereocomplex-PLA from melt: Effect of Melt-memory and Flow”** Denka Hristova-Bogaerds, Rafiq Ahmed, Pim Lohmeijer, P.J. Lemstra.
 8. Dutch Polymer Days (DPD), Veldhoven, the Netherlands (2010) **“Poly(lactic acid) stereocomplex formation in the melt: Stereocomplexation in the homogeneously mixed blends”**; Rafiq Ahmed, Denka Hristova-Bogaerds, P.J. Lemstra.
 9. Dutch Polymer Days (DPD), Lunteren, the Netherlands, (2009) **“Poly(lactic acid) stereocomplex formation in the early stages of melt extrusion (from solid state blend)”**; Rafiq Ahmed, Denka Hristova-Bogaerds, P.J. Lemstra.
 10. Dutch Polymer Days (DPD), Lunteren, the Netherlands, (2008): **“Rheological Phenomena in Ternary Polymeric Solutions of UHMWPE and PP in Paraffine”**; Rafiq Ahmed, Denka Hristova-Bogaerds, P.J. Lemstra.
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