



Dr. Mahmood Ahmed

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Profile Summary

Dr Mahmood Ahmed is an Assistant Professor of Chemistry, Department of Chemistry, Division of Science and Technology, University of Education, College Road, Lahore-Pakistan. He received his M.Sc. (January, 2003), M.Phil. (July, 2013) and PhD (March, 2018) degrees in Chemistry from Institute of Chemistry, University of the Punjab, Lahore-Pakistan. He has more than 21 years of professional, research and teaching experience. His expertise are in analytical, pharmaceutical and medicinal chemistry. In pharmaceutical industry (Renacon Pharma Ltd.), where he spent more than 18 years and did quality by design (QbD) based projects for manufacturing of haemodialysis concentrates in Pakistan & Malaysia. His research interest involve synthesis of novel drug analogs and tested them for various pharmacological properties against different phenotypes of various disease models like antibacterial, antifungal, FIC index calculations, anti-inflammatory, analgesic activities, enzymatic assay (cyclooxygenase, urease, carbonic anhydrase). Also, his core analytical chemistry interest is development, optimization and validation of HPLC methods for stability indicating assays for the analysis of drugs in real samples of different dosage forms, urine and plasma samples as per international regulatory guidelines including ICH, FDA, EMA & USP. He is also working on extraction of trace, essential, toxic, heavy metals in water, soil and food items by different techniques such as conventional acid digestion, ultrasound and microwave assisted extraction to characterize human health toxicity. His interests focus on analytical data treatment, including outlier identification in univariate and multivariate datasets, significance testing, signals/noise, and univariate and multivariate calibration/validation. He has "hands-on experience" of various analytical instruments including Atomic absorption spectrometer (FAAS, ET-AAS, HG-AAS), UV-VIS spectrophotometer, Liquid & gas chromatography (HPLC & UHPLC-PDA, UFLC-UV-VIS, LC-MS/MS, GC-MS/MS), Emission spectrophotometer (ICP-OES, flame photometer), FTIR, TOC analyzer, Dissolution & Disintegration apparatus, Refractometer, Polarimeter, Liquid & air particle counter, Karl Fischer, Kjeldahl apparatus. Teaching analytical, pharmaceutical and medicinal chemistry including laboratory practical at BS/MSc. level and supervising the students at MS and PhD level in the same field. He has published 126 research/review articles as principle and co-author in national and international peer reviewed journals, resulting in 2434 citations, impact factor = 289.7, h-index = 27 and i10-index = 60. He is editor/advisor of 4 International Journals. He has reviewed 604 research/review articles for 92 international journals and handled 72 articles as an editor. 16 MS and 1 PhD students have been supervised/co-supervised, and/or pursuing their degree in the field of analytical, pharmaceutical and medicinal chemistry so far. Moreover, 20 of his abstracts published in proceedings of national and international conferences. He is ranked among the 2 % of scientists globally by Elsevier.

Google Scholar. <https://scholar.google.com.pk/citations?user=GAa1VMUAAA&hl=en>

ORCID. <http://orcid.org/0000-0002-2285-7406>,

Researcher ID. D-1320-2015,

Scopus Author ID. 7402832094

Teaching Philosophy

Dr Ahmed is passionate about teaching analytical, pharmaceutical and medicinal chemistry and committed to providing his students with a rigorous and engaging learning experience that will help them develop the skills and knowledge they need to succeed in their chosen careers. His teaching philosophy is centered on creating a student-centered learning environment that is both challenging and supportive. He believes that students learn best when they are actively engaged in the learning process, and he strives to create a classroom atmosphere that encourages active participation, critical thinking, and problem-solving. He uses a variety of teaching methods in his classes, including lectures, discussions, laboratory experiments, and group projects. He also incorporates technology into his teaching whenever possible, using online resources, simulations, and other tools to enhance the learning experience. His goal as a teacher is to help his students develop a deep understanding of chemistry and the skills they need to succeed in their chosen careers. He wants his students to be able to think critically, solve problems, and communicate their findings effectively. He also wants his students to develop a passion for chemistry and to appreciate its importance in solving real-world problems. He is committed to providing his students with the best possible learning experience, and he is confident that he can continue to make significant contributions to the field of chemistry education.

Research Statement

He is passionate about chemistry and its potential to make a positive impact on the world. His research focuses on developing new analytical methods and technologies for the detection, characterization, and quantification of a variety of chemical substances in complex matrices. He is particularly interested in developing methods that are sensitive, selective, and efficient, and that can be used to solve real-world problems in areas such as environmental science, pharmaceutical sciences and food safety. In addition to his methodological research, he is also interested in applying analytical chemistry to solve problems in environmental science, pharmaceutical sciences and public health. He has conducted research on the development of methods for the detection and quantification of metals in water, soil and food items including vegetables, milk, fruits, and sweets. His research has been published in leading scientific journals and he has presented his work at numerous conferences. He is currently working on several specific research including: Development of chemosensors for cations analysis. Smart phone test strips for the analysis of metals by utilizing MOFs. He is also doing synthesis of novel drug analogs/derivatives and tested them for various pharmacological properties against different phenotypes of various disease models.

Education

1. PhD (Chemistry). March, 2018

Institute of Chemistry, University of the Punjab, Lahore-Pakistan

Thesis Title. Synthesis, characterization of novel curcumin analogs and their biological activities

2. M. Phil. (Analytical Chemistry). July, 2013

Institute of Chemistry, University of the Punjab, Lahore-Pakistan

Thesis Title. Optimization and validation of RP-HPLC method for determination of organic acids in disinfectants and evaluation of their bactericidal activity against *E. coli*, *S. aureus* and *P. aeruginosa*

3. M.Sc. (Analytical Chemistry). January, 2003

Institute of Chemistry, University of the Punjab, Lahore-Pakistan

Thesis Title. Analysis of phenol in textile effluents and their treatment by locally available adsorbents

Professional, Teaching & Research Experience

1. Assistant Professor (TTS)

Department of Chemistry, University of Education, College Road, Lahore-Pakistan: December 10, 2021 to date

2. Visiting Faculty

Department of Chemistry, University of Education, College Road, Lahore-Pakistan: March 4, 2020 to September 9, 2020

3. Head of Plant Operations/Management Representative

Renacon Pharma Limited, Lahore-Pakistan: July 1, 2020 to December 8, 2021

4. Head Quality Operations and R & D/Management Representative

Renacon Pharma Limited, Lahore-Pakistan: November 1, 2019 to June 30, 2020

5. Quality Control Incharge/Management Representative

Renacon Pharma Limited, Lahore-Pakistan: September 20, 2005 to October 1, 2019

6. Analytical Chemist

Renacon Pharma Limited, Lahore-Pakistan: April 1, 2003 to September 20, 2005

Chemistry Courses & Research

1. Teaching analytical, pharmaceutical and medicinal chemistry including laboratory practical at BS, MS level
2. Supervision of research students @ MS and PhD level in the area of analytical, pharmaceutical and medicinal chemistry

PhD Supervision & Co-Supervision/Doctoral Advisory Committee

1. Navid Aslam, Department of Zoology, University of Education, Lahore. Session 2023-2028 [**Member-Major area**]
2. Encapsulation of curcumin in novel metal organic frameworks: Sustained release study and biological activities: Mabashar Siddique, Department of Chemistry, University of Education, Lahore. Session 2022-2027 [**Co-Supervision**]

M. Phil. Supervision & Co-Supervision

1. Biobase-MOF for Encapsulation of Curcumin to Enhance its Bioavailability: Sehar Basheer, Department of Chemistry, University of Education, Lahore. Session 2022-2024 [**Supervision**]
2. Exploring the New Therapeutic Targets of Non-Steroidal Anti-inflammatory Drug Derivatives: Rida Batool, Department of Chemistry, University of Education, Lahore. Session 2022-2024 [**Supervision**]
3. Synthesis and Application of Sulfonamide Schiff Bases as Chemosensors for the Detection of Cations in Aqueous Media: Maryam Ahmad Ali, Department of Chemistry, University of Education, Lahore. Session 2022-2024 [**Co-Supervision**]
4. Cu/Zr Based MOFs for Removal of Hazardous Metals from Tanneries Wastewater: Syed Muhammad Rehan Haider, Department of Chemistry, University of Education, Lahore. Session 2022-2024 [**Co-Supervision**]
5. Schiff bases Containing Sulfonamides: Synthesis, Characterization and their Biological Activities: Ujala Habib, Department of Chemistry, University of Education, Lahore. Session 2021-2023 [**Co-Supervision**]
6. Estimation of Toxic and Heavy Metals in Conventional Pakistani Sweets and Their Impact on Human Health: Amna Javed, Department of Chemistry, University of Education, Lahore. Session 2021-2023 [**Co-Supervision**]
7. Encapsulation of Curcumin in Novel γ -Cyclodextrin Metal Organic Framework: Sustained Release Kinetics and Solubility Studies: Muhammad Faheem, Department of Chemistry, University of Education, Lahore. Session 2021-2023 [**Co-Supervision**]
8. Investigation of Toxic Effects of Trace and Heavy Metals in Cosmetic Products on Human Health: Aamir Sohail, Department of Chemistry, University of Education, Lahore. Session 2021-2023 [**Supervision**]
9. Risk Assessment of Trace and Heavy Metals Exposure via Consumption of Different Types of Tea. Muhammad Ayyan Khan, Department of Chemistry, University of Education, Lahore. Session 2021-2023 [**Supervision**]
10. Potential human health risk assessment via consumption of Rice Planted in Soil contaminated with Toxic Metals. Muhammad Bilal, Department of Chemistry, University of Education, Lahore. Session 2021-2023 [**Co-Supervision**]

11. Synthesis and Characterization of Metal Curcumin Nanoparticles to enhance its bioavailability and therapeutic activities. Ayesha Asghar, Center for Bioinformatics and Drug Design, School of Biochemistry and Biotechnology, University of the Punjab, Lahore Session 2020-2022 **[Co-supervision]**
12. Development of Eco-Friendly High Performance Liquid Chromatographic Method for Analysis of Amiodarone and Metoprolol. Ammara Zahid, Institute of Pharmaceutical Sciences, University of Veterinary & Animal Sciences, Lahore Session 2020-2022 **[Co-supervision]**
13. Screening, detection and quantification of NDMA in nitrogen containing anti-depressant drugs. Ahmed Ali, Institute of Pharmaceutical Sciences, University of Veterinary & Animal Sciences, Lahore Session 2020-2022 **[Co-supervision]**
14. Development and Validation of New RP-HPLC Method for the Analysis of Sulfamethoxazole and Trimethoprim in Liquid Suspension and its Comparison with Compendial Method. Shahzad Ali, Department of Chemistry, University of Education, Lahore. Session 2019-2021 **[Co-supervision]**
15. Eco Friendly Ultra-Fast Chromatographic Method for the Determination of Cefixime and its E-Isomer in Active Pharmaceutical Ingredients. Sadia Inayat, Department of Chemistry, University of Education, Lahore. Session 2019-2021 **[Co-supervision]**
16. Comparison of Pasteurized and Unpasteurized Milk Quality in Lahore Region and Detection of Possible Adulterants by Using Standard Methods. Maria Akram, Department of Chemistry, University of Engineering and Technology, Lahore. Session 2018-2020 **[Co-supervision]**

Academic Professional Activities

1. Paper Setter, PhD-Chemistry, University of Education, Lahore-Pakistan
2. Convener, Finance and Marketing Committee, 2nd International Conference on Trends and Research in Chemistry, (TRIC-2023), 16-18 May, 2023, University of Education, Lahore-Pakistan
3. Focal Person, MOU between University of Education and Novamed Pharmaceuticals (Pvt.) Limited, Lahore vide Notification No UE/R/2022/3342
4. Paper Setter, BS-Chemistry, University of Education, Lahore-Pakistan
5. Member Research Proposal Review Committee, Department of Chemistry, Division of Science and Technology, University of Education, Lahore-Pakistan
6. Member University Sports Committee (Football), Sports Week, 28 March-01 April, 2022, University of Education, Lahore-Pakistan
7. Member Admission Committee, Department of Chemistry, Division of Science and Technology, University of Education, Lahore-Pakistan
8. Member Organizing Committee, 1st International Conference (online). Trends & Research in Chemistry (TRIC-2022), Jan. 18-19, 2022, Department of Chemistry, Division of Science and Technology, University of Education, Lahore-Pakistan:
9. Program Team Member to Prepare Self-Assessment Report of MS-Chemistry for Year, 2021-2022, Department of Chemistry, Division of Science and Technology, University of Education, Lahore-Pakistan
10. External examiner for MS thesis, University of Lahore, Lahore-Pakistan
11. External examiner for MS thesis, Govt College University, Lahore-Pakistan
12. External examiner for BS thesis, FCC (A Chartered University), Lahore-Pakistan
13. External examiner for MS thesis- University of Veterinary & Animal Sciences, Lahore-Pakistan
14. External examiner for MSc thesis-University of the Punjab, Lahore-Pakistan
15. External examiner for B.Sc. practical papers-University of the Punjab, Lahore-Pakistan
16. External examiner for BS-MS thesis-University of the Punjab, Lahore-Pakistan

Editorship & Memberships

1. **Member**, QUVAE Research and Publications, Anna Nagar, Chennai, Tamil Nadu 600040, India
2. **Academic Board Member**, ETERNO Press, Singapore 409051
3. **Academic Editor**, PLOS ONE, San Francisco, California, USA
4. **Academic Editor**, International Journal of Analytical Chemistry, John Wiley & Sons Ltd, USA
5. **Member** American Chemical Society, USA: Membership ID 30980472
6. **Academic Editor**, Journal of Chemistry, John Wiley & Sons Ltd, USA

7. **Guest Associate Editor**, *Frontiers in Chemistry*, Special Issue on "Non-sulfonamide Molecules as Human Carbonic Anhydrase Inhibitor"
8. **Lead Guest Editor**, *Journal of Chemistry*, Special Issue on "Toxic and Heavy Metals in Food Items"
9. **Editorial Board Member**, *Indonesian Journal of Chemistry*, Indonesia
10. **Member** Royal Society of Chemistry, UK: Membership ID 716868

Workshops, Seminars/Webinars & Conferences

1. Oral presentation. Ibuprofen conjugated sulfonamides as urease inhibitors. 6th International Cappadocia Scientific Research Congress. Organized by IKSAD Institute & Chirchik State Pedagogical University, Cappadocia-Nevsehir, Türkiye, 10-12 August, 2024
2. Oral presentation as invited speaker: Chicken feathers derived carbon quantum dots for efficient photocatalytic degradation of methylene blue. International Conference on Material Chemistry and Industrial Technologies (MCIT). Department of Chemistry, The University of Lahore-Pakistan, April, 24-25, 2024
3. Participation. Introduction to KnowItAll for spectrometry, Wiley Team, March 26, 2024
4. Oral Presentation. Essential and potentially toxic metals in traditional sweets in Pakistan: exposure assessment and human health implications. 5th International Conference on Global Practice of Multidisciplinary Scientific Studies, Baku, Azerbaijan, 10-12 December, 2023
5. Participation. Method Robustness and Transformability for Modern Size Exclusion Methods, eLearning Phenomenex, November 23, 2023
6. Participation. FDA's Analytical Method for PFAS Detection, eLearning Phenomenex, November 21, 2023
7. Participation. LC-MS: how to boost your chromatography, eLearning Phenomenex, November 15, 2023
8. Oral Presentation. Nano Particles of Nickel Oxide- Acacia Nilotica Leaf Extracts: Green Synthesis and Their Biological Activities. 2nd International Bogazici Scientific Studies Conference, Istanbul, Türkiye, 19-20 September, 2023
9. Oral Presentation. Cornmeal for the Synthesis of Biodegradable Plastic Films by Microwave Polymerization Technique. 4th International Black Sea Modern Scientific Research Congress, Rize, Türkiye, 6-7 June, 2023
10. Oral Presentation. Antiurease Effect of Benzenesulfonohydrazides, In Vitro and In Silico Studies. 4th International Antalya Scientific Research and Innovative studies Congress, Antalya, Türkiye, 9-10 May, 2023
11. Oral Presentation. Investigation of Minerals in Fruit Peels Powder: Ultrasound Assisted Extraction Followed by Flame Atomic Absorption Spectrometry. International Conference on Global Practice of Multidisciplinary Scientific Studies-IV, Turkish Republic of Northern Cyprus, 28-30 April, 2023
12. Oral Presentation. Fabrication of Silver Nanoparticles as an Efficient Sensor for Quantification of Mercury in Aqueous Media. International Palandoken Scientific Studies Congress, Erzurum, Türkiye, 18-19 March 2023
13. Participation: Enhancing Your Imaging Workflows and Ultrastructural Data Using Biological EDS, 2 February 2023, Wiley Analytical Sciences
14. Oral Presentation. Alkyl Chain Linked Thiourea Derivatives: Synthesis, Biological Activities, In Vitro and In Silico Studies, II- International Congress on Modern Sciences, Tashkent, Uzbekistan, December 16-17, 2022
15. Oral Presentation. Trace and heavy metals in different types of sauces: Evaluation of human health risk, 3. International Hasankeyf Scientific Research and Innovation Congress, Batman, Türkiye, 17-18 December 2022
16. Oral Presentation. Contamination of Soil and Water by Toxic and Heavy Metals: Evaluation of Their Impact on Human, 3. International Cappadocia Scientific Research Congress, Cappadocia-Nevsehir, Türkiye, 11-12 December 2022.
17. Participation. Improvement in Sample Preparation and LC-MS Analysis of Therapeutic Oligonucleotides, eLearning Phenomenex, November 25, 2022
18. Participation. Harmonization of Ph. Eur. 2.2.46 and USP 621-New Allowed Adjustments, eLearning Phenomenex, November 16, 2022
19. Participation. Using Core Shell Particle Technology to Improve Micro and Nano LC Separations, eLearning Phenomenex, September 27, 2022

20. Oral Presentation, Title: Anti-Inflammatory and Antinociceptive Activities of Curcumin-Schiff Bases Containing Sulfonamides & Chair of Technical Session, (September 16, 2022). BILTEK-VI, 6. International Symposium on Current Developments in Science, Technology and Social Sciences, Malatya, Türkiye, September 16-18, 2022
21. Participation. Common LC Troubleshooting Mistakes and What to Do Instead, eLearning Phenomenex, September 20, 2022
22. Participation. How to choose your C18 Column, eLearning Phenomenex, September 08, 2022
23. Oral Presentation, Title: Screening Of Curcumin-Schiff Bases Containing Sulfonamides as Antibacterial and Antifungal Agents, & Head of Session-3 (September 03, 2022). International Congress on Natural & Medical Sciences, Ege University, Izmir, Türkiye, September 02-04, 2022
24. Participation. An Overview of Preparative Chromatography, eLearning Phenomenex, August 30, 2022
25. Participation. Exploring LC Selectivity using Steroids in Clinical Setting, eLearning Phenomenex, August 25, 2022
26. Participation. Column selection for special cases: High throughput, High pH, High aqueous, High retention/resolution eLearning Phenomenex, August 4, 2022
27. Participation. Miniaturization and automation of oligonucleotide sample preparation, eLearning Phenomenex, July 28, 2022
28. Oral Presentation, Title: Non-Essential/Toxic Trace Metals in Vegetables: An Evaluation of Human Health Risk. June 25, 2022. International Conference on Global Practice of Multidisciplinary Scientific Studies Dedicated to the 100th Anniversary of "Georgian Technical University – GTU (online), Tbilisi-Georgia, Georgian Technical University, June 24-26, 2022
29. Participation. Advances in Sample Preparation Technique for extraction of Polar Analytes from Various Matrices, .eLearning Phenomenex, June 15, 2022
30. Participation. GC Troubleshooting Tips and Tricks from Inlet through Detection, Phenomenex, May 26, 2022
31. Participation. Trouble shooting LC system contamination, eLearning Phenomenex, May 19, 2022
32. Participation. How to boost the selectivity of your separation in Flash Chromatography, eLearning Phenomenex, May 12, 2022
33. Oral Presentation, Title: Antibacterial effects of diazotized curcumin containing sulfonamides. April 28, 2022. International Scientific Research Congress (online), Dedicated to 30th Anniversary of Baku Eurasia University, Baku, Azerbaijan: April 28, 2022
34. Participation. Wiley Editor Seminar: The value of Open Research Publishing (online). Organizer, Wiley, April. 26, 2022
35. Oral Presentation, Title: Curcumin derivatives: Anti-inflammatory, analgesic, ulcerogenic, cyclooxygenase-2 inhibition and molecular docking studies April 15, 2022. CUKUROVA-8th International Scientific Researches Conference (online), Adana, Turkey: April 15-17, 2022
36. Poster exhibition in chemistry (PEC-2022), Department of Chemistry, University of Education, Lahore, April 14, 2022
37. Participation. United Nation Environment Programme-Global Environment Facility (UNEP-GEP) Project. 1st Pakistan National Biosafety Clearing House (BCH) Workshop (online). Feb 28-March 2, 2022
38. Oral Presentation, Title: Curcumin heterocyclics as urease inhibitors. In vitro biological activities and molecular docking studies. Feb.22, 2022. MAS 16th International European Conference on Mathematics, Engineering, Natural & Medical Sciences (online), Mardin, Turkey: Feb. 22-23, 2022
39. Oral Presentation, Title: Discovery of curcumin heterocyclics containing sulfonamides for carbonic anhydrase inhibition and molecular docking studies. Feb.18, 2022. International Euroasia Congress on Scientific Research and Recent Trends-IX (online), Antalya, Turkey: Feb. 18-20, 2022
40. Participation. Dissecting the scholarly publishing process. A current overview on the steps to getting published. Organizer, Wiley, Jan. 26, 2022
41. Oral Presentation, Title: Nutritious and Harmful Elements in Curcuma Longa L. A Source of Therapeutically Important Curcumin & Head of Session-2 (Jan. 22, 2022). 7th International Zeugma Conference on Scientific Research (online), Gaziantep, Turkey: Jan. 21-23, 2022
42. Oral Presentation, Title: Analytical Instrument Qualification and Method Validation (AIQ & MV)-A Scientific Approach & Head of Session-2 (Jan. 19, 2022). 1st International Conference (online). Trends & Research in Chemistry (TRIC 2022), Department of Chemistry, Division of Science and Technology, University of Education, Lahore-Pakistan: Jan. 18-19, 2022
43. Participation. 25th National and 13th International Chemistry Conference, Institute of Chemistry, University of the Punjab, Lahore-Pakistan: October 20-22, 2014

44. Participation. Training Workshop on GMP Guidelines regarding Quality Management, Personnel Sanitation & Hygiene, and Premises & Good Documentation Practices as per WHO GMP guidelines. Lahore Chamber of Commerce & Industry: April, 2012.
45. Participation. International workshop on pharmaceutical equipment validation & Qualification and Calibration at NIPIR- New Delhi, India: June 15, 2007
46. Participation. The kidney foundation's biennial symposium by kidney foundation Pakistan, February 23-26, 2006, Karachi

Trainings

1. Foundation of GMP: Active Pharmaceutical Ingredient (API), USP Education, August 11, 2021
2. Foundation of GMP: Data Integrity and Computer System Validation, USP Education, August 11, 2021
3. Foundation of GMP: Deviations, Root Cause Analysis (RCA) Tools and Corrective and Preventive Action (CAPA) - Sequence flow for handling of any non-conformance in the GMP environment, USP Education, August 04, 2021
4. Foundation of GMP: Medicinal Products, USP Education, August 04, 2021
5. Foundation of GMP: Auditing, USP Education, August 02, 2021
6. Foundation of GMP: Quality Risk Management, USP Education, August 02, 2021
7. Foundation of GMP: HVAC System, USP Education, June 08, 2020
8. Foundation of GMP: Qualification, USP Education, May 03, 2020
9. Foundation of GMP: Validation, USP Education, April 27, 2020
10. Foundation of GMP: Water Systems, USP Education, April 26, 2020
11. Training session on understanding the requirements of ETO Sterilization ISO 11135:2014 and Clean Room Manufacturing ISO 14644-1:2015 for Medical Devices. 20-21 April 2020, Online, Sialkot (Trainer)
12. ISO 13485:2016 Medical Device Quality Management Systems Transition Training Course, July 11-12, 2018, Sialkot
13. ISO 9001:2015 Quality Management System- Documentation & Internal Audit by SGS-Pakistan, Oct. 31- Nov. 01, 2016, Lahore
14. Revised MDD Directive 93/42/EEC (2007/47/EC) conducted by SGS-Pakistan, December 4, 2009, Lahore
15. CE marking for medical devices under directive 93/42/EEC & ISO 13485:2003 conducted by SGS-UK, Lahore, February, 9, 2007

Foreign Visits

1. Evaluation of Canaan Technologies, Nanjing & Wenzhou, China, for water treatment and blending systems. July, 29-30, 2019
2. Evaluation of OCI Medical (Member of LEPU medical group), Chengdu, China, for dialyzer. July, 26, 2019
3. Evaluation of Sanxin MedTec., Nanchang, China, for BTL and dialyzer. July, 26-27, 2019
4. Evaluation of BWT, Shanghai China, for water treatment system. July, 25, 2019
5. Evaluation of DC Pack & Lee Pack. Seoul South Korea, for liquid and powder filling line for haemodialysis plant, July, 21-24, 2019
6. Evaluation of MH Multipack Sdn. Bhd. Pinang Malaysia, for liquid filling line for haemodialysis plant, May, 27-29, 2019
7. China International Medical Equipment Fair (CMEF), Shanghai, China April, 11-13, 2018
8. Qualification of Sanxin MedTec., Nanchang, China, for BTL and dialyzer. April, 14-15, 2018
9. Leheng, Beijing, China, MVR related discussion for sodium chloride project April, 16-18, 2018
10. China International Pharmaceutical Machinery Exposition (CIPM), Chongqing, China April, 20-21, 2018.
11. Consultancy provision regarding haemodialysis concentrates to Well Pharma, Abu Dhabi, UAE: Feb. 16-19, 2016
12. Installation & operational activities in Renacon Pharma Sdn. Bhd., Malaysia: Nov. 12-20, 2014
13. R&D meeting (for product development regarding food supplement) with "DuPont USA" largest soy protein producing company, have an Asian regional office in - New Delhi, India: June 13-14, 2007

Reviewership for Peer Reviewed International Referred Journals

1. Luminescence, **John Wiley & Sons**,
2. Journal of Food Science and Technology, **Springer Nature**
3. International Journal of Food Contaminants, **Springer, BMC**
4. Journal of Brazilian Chemical Society, **Brazil**
5. Food Analytical Methods, **Springer Nature**
6. Eurasian Journal of Analytical Chemistry, **Turkey**
7. Food Chemistry, **Elsevier**
8. Korean Journal for Food Science of Animal Resources, **KoSFA, Korea**
9. Journal of Apicultural Research, **Taylor & Francis**
10. Nucleosides Nucleotides & Nucleic Acids, **Taylor & Francis**
11. Natural Product Research, **Taylor & Francis**
12. Saudi Journal of Biological Sciences, **Elsevier**
13. Latin American Journal of Pharmacy, **Argentina**
14. Analytical Letters, **Taylor & Francis**
15. Bioorganic Chemistry, **Elsevier**
16. Innovative Food Science & Emerging Technologies, **Elsevier**
17. Journal of Liquid Chromatography and Related Technologies, **Taylor & Francis**
18. International Journal of Food Properties, **Taylor & Francis**
19. Atmospheric Pollution Research, **Elsevier**
20. Analytical Methods, **Royal Society of Chemistry**
21. Journal of Cleaner Production, **Elsevier**
22. RSC Advances, **Royal Society of Chemistry**
23. Revista de Nutricao-Brazilian Journal of Nutrition, **Brazil**
24. Journal of Analytical Methods in Chemistry, **Hindawi**
25. Separation Science Plus, **John Wiley & Sons**
26. Archiv der Pharmazie, **John Wiley & Sons**
27. BioMed Research International, **Hindawi**
28. Microchemical Journal, **Elsevier**
29. Data in Brief, **Elsevier**
30. Biomedical Chromatography, **John Wiley & Sons**
31. Journal of Chemistry, **Hindawi**
32. Drug Design, Development and Therapy, **Dove Press, New Zealand**
33. Research on Chemical Intermediates, **Springer Nature**
34. Chemical Science International Journal, **SCIENCEDOMAIN International, India**
35. Medicinal Chemistry Research, **Springer Nature**
36. Biodiversity, **Taylor & Francis**
37. Acta Chromatographica, **Poland**
38. Malaysian Journal of Pharmaceutical Sciences, **Malaysia**
39. Polycyclic Aromatic Compounds, **Taylor & Francis**
40. Current Cosmetic Science, **Bentham Science**
41. Exposure and Health, **Springer Nature**
42. Journal of Indian Chemical Society, **Elsevier**
43. Indian Journal of Pharmaceutical Science, **India**
44. SONGKALAKARIN Journal of Science and Technology, **Thailand**
45. Indonesian Journal of Chemistry, **Indonesia**
46. Frontiers in Endocrinology, **Switzerland**
47. Molecules, **MDPI, Switzerland**

48. Environmental Monitoring and Assessment, **Springer Nature**
 49. ChemistrySelect, **John Wiley & Sons**
 50. Food Chemistry: X, **Elsevier**
 51. ACS Omega, **ACS-USA**
 52. Journal of Food Quality, **Wiley & Hindawi**
 53. Journal of Molecular Structures, **Elsevier**
 54. Pharmaceutics, **MDPI, Switzerland**
 55. Heliyon, **Cell Press, USA**
 56. Bioengineering, **MDPI, Switzerland**
 57. Sustainable Chemistry and Pharmacy, **Elsevier**
 58. Journal of Taibah University for Science, **Taylor & Francis**
 59. International Journal of Molecular Sciences, **MDPI, Switzerland**
 60. Results in Chemistry, **Elsevier**
 61. Inorganic Chemistry Communications, **Elsevier**
 62. Separations, **MDPI, Switzerland**
 63. Protocols and Methods, **MDPI, Switzerland**
 64. Applied Sciences, **MDPI, Switzerland**
 65. Biophysical Chemistry, **Elsevier**
 66. Bioanalysis, **Future Science, UK**
 67. Journal of Biomolecular Structure & Dynamics, **Taylor & Francis**
 68. Journal of Taibah University Medical Science, **Elsevier**
 69. Chemistry Africa, **Springer Nature**
 70. Arabian Journal of Chemistry, **Elsevier**
 71. Nanoscale, **Royal Society of Chemistry**
 72. Phosphorus, Sulfur, and Silicon and the Related Elements, **Taylor & Francis**
 73. Journal of Trace Elements and Minerals, **Elsevier**
 74. International Journal of Cosmetic Science, **Wiley**
 75. Chemistry and Biodiversity, **Wiley**
 76. International Journal of Analytical Chemistry, **Hindawi-Wiley**
 77. Chinese Chemical Letters, **Elsevier**
 78. Biomass Conversion and Biorefinery, **Springer Nature**
 79. Scientific Reports, **Springer Nature**
 80. Nano Materials Science, **Elsevier**
 81. Future Science OA, **Future Science**
 82. PLOS ONE, **USA**
 83. Carbohydrate Polymers, **Elsevier**
 84. Journal of Food Composition and Analysis, **Elsevier**
 85. Industrial Crops & Products, **Elsevier**
 86. ACS Applied Polymer Materials, **ACS-USA**
 87. Food and Chemical Toxicology, **Elsevier**
 88. Sustainable Food Technology, **Royal Society of Chemistry**
 89. Materials Chemistry and Physics, **Elsevier**
 90. Journal of Food Process Engineering, **Wiley**
 91. Green Processing and Synthesis, **De Gruyter, GmbH**
 92. Journal of Environmental Chemical Engineering, **Elsevier**
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QMS, MDD & Data Handling Skills

1. **ISO 45001:2018**, Occupational health and safety management system- requirements with guidance for use, specifies requirements for an OH&S management system to enable organization to provide safe and healthy workplace by preventing work-related injuries and ill health as well as by proactively improving its OH&S performance.
2. **ISO 14001:2015**, Environmental management system-requirements with guidance for use, specifies the requirements for an environmental management system that an organization can use to enhance its environmental performance, seeking to manage its environmental policies in a systematic manner that contributes to environmental pillar of sustainability.
3. **ISO 11135:2014**, Sterilization of health-care products Ethylene oxide-Requirements for the development, validation and routine control of a sterilization process for medical devices.
4. **Site master file (SMF)**, Renacon Pharma Limited, a largest manufacturer of various types of haemodialysis concentrate (liquid & solid dosage form), and related products including disinfectants, sterilents in Pakistan. SMF is useful to the regulatory authorities & certified bodies in planning and conducting GMP inspections, MDD & QMS audits.
5. **MDD, European Directive 93/42/EEC**, Annexure II (excluding section 4) for manufacturing of haemodialysis concentrates.
6. **EN ISO 14971:2012**, Application of risk management to medical device, estimate and evaluates the risks, control these risks and monitor the effectiveness of control. This risk analysis is applicable to all stages of life cycle of all types of haemodialysis concentrates.
7. **ISO 23500-4:2019**, Concentrates for haemodialysis and related therapies, document includes concentrates in both liquid and powder forms, also specifies requirements for equipment used to mix acid and bicarbonate powders into concentrate at the user's facility.
8. **ISO 23500-3:2019**, Water for haemodialysis and related therapies, document includes water to be used in the preparation of concentrates, dialysis fluids for haemodialysis, haemodiafiltration and haemofiltration, and for the reprocessing of haemodialysers.
9. **ISO 14644:2015**, Cleanrooms and associated controlled environments, the classification of air cleanliness in terms of concentration of airborne particles in cleanrooms and clean zones; and separative devices as defined in ISO 14644-7.
10. **I.S. EN 1041:2008+A1:2013**, Information supplied by manufacturer of medical devices, European Standard specifies requirements for information to be supplied by a manufacturer for medical devices regulated by Council Directive 93/42/EEC concerning haemodialysis concentrates.
11. **ISO 15223-1:2016**, Medical devices - Symbols to be used with medical device labels, labelling and information to be supplied, document identifies requirements for symbols used in haemodialysis concentrates labelling that convey information on the safe and effective use of haemodialysis concentrates, which are marketed globally and therefore need to meet different regulatory requirements
12. **ISO 10993-1:2009**, Biological evaluation of medical devices - Part 1: Evaluation and testing within a risk management process, the assessment of the biological safety of the haemodialysis concentrates
13. **ISO 9001:2015** Quality management system, organization demonstrates its ability to consistently provide products and services that meet customer and applicable statutory and regulatory requirements
14. **ISO 13485:2016** Medical devices – Quality management systems - Requirements for regulatory purposes, a quality management system where an organization needs to demonstrate its ability to provide medical devices and related services that consistently meet customer and applicable regulatory requirements. Throughout the life-cycle including design and development, production, storage and distribution, installation, or servicing of a medical device and design and development or provision of associated activities such as technical support.

1. MS Office

2. **SPSS@**- software package used for interactive, or batched, statistical analysis
3. **ChemDraw**, analytical and chemical property data of structures and fragments
4. **ChemSketch**, molecular modeling program used to create and modify images of chemical structures
5. **GraphPad Prism**, scientific 2D graphing and statistics software
6. **Origin**, program for interactive scientific graphing and data analysis
7. **ArcGIS**, geographic information system for working with maps and geographic information
8. **BioRender**, a science illustration tool used to create high-quality diagrams for publications, presentations, posters, patents etc.
9. **ImageJ**, designed for scientific image analysis and processing, offering extensive capabilities for tasks like measuring distances, counting particles, and analyzing cellular structures.
10. **MestReNova**, a powerful, multi-vendor software suite designed to seamlessly process and analyze data from NMR, LC/GC-MS, and Electronic & Vibrational Spectroscopic techniques.
11. **Canva**, a great tool for creating visual content.

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3. Mahmood Ahmed, Curcumin: An Important Phytochemical. CPQ Medicine 2018 1 (5): 1-2
4. Mahmood Ahmed, Metal Contamination in Milk: A Potential Human Health Toxicity. CPQ Nutrition (2018) 1 (6): 1-2

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