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Objective: Scientist, Consultant, Adviser with demonstrated expertise in Advanced Analytical Skills for science and technology. Expert with solid scientific reasoning, impact oral and written communication skills, grant writing and review experience and effective problem solving capabilities.

EDUCATIONAL QUALIFICATION

- PhD (Environmental Sciences) 2023, Fatima Jinnah Women University, Pakistan.
- M.Phil. (Inorg. / Anal. Chem.), 2005, Quaid-i-Azam University, Islamabad, Pakistan.
- M.Sc. (Chem.), 2002, Quaid-i-Azam University, Islamabad, Pakistan
- B.Sc. (Chem., Bot., Zool.), 2000, Govt. Viqar-un-Nisa Girls College, Pakistan.
- F.Sc. (Pre-medical), 1998, Pakistan Embassy School, Kingdom of Saudi Arabia.

PROFESSIONAL BACKGROUND

- Research Officer (2022-till date), Faculty of Science & Technology, Fatima Jinnah Women University, Pakistan.
- Senior Technician, (2011-2022), Spectroscopy & High Technology Labs, Fatima Jinnah Women University, Pakistan.
- Analyst, (2005-2011), Fatima Jinnah Women University, Pakistan.

SCHOLARSHIPS

- PhD, (2017-2021), Awarded the Scholarship under Prime Minister Scheme for Under Developed Students.
- M.Phil.(2003-2005), Awarded Merit Scholarship by Quaid-i-Azam University, Pakistan.
- M.Phil.(2003-2005), Received Allowance by Higher Eductaion Commission, Pakistan
- B.Sc. (1998-2000), Awarded Prestigious Scholarship under President's Talent Farming Scheme by University Grant Commission, Pakistan.

MEMBERSHIP

- Member of International Union of Pure and Applied Chemistry (IUPAC).

OTHER ADMINISTRATIVE DUTIES ASSIGNED

- Focal Person / Coordinator for ASIP / HEC Scheme
- Focal Person / Coordinator for PCSIR-ASIP Scheme
- Regular Member of Registration Committee for the Annual Convocations (2005-2009)
- Regular Member of Singing Committee for Intra-University Competitions, and Women Week organized annually by FJWU (2005-2015).
- Member of Program Team for Self-Assessment of Environmental Chemistry, Environmental biotechnology, and Environmental Sciences Program (2014-2017).
- Technical Expert / Member of Technical Team for Procurements of Chemicals, Glassware and Analytical Instruments.
- Member of Editorial Board, Science of Total Environment.

RESEARCH EXPERIENCE

- PhD (2017-2023), Synthesis, Structural Elucidation and Environmental Applications of Polymer Based Hybrids containing Oxygen Linkage.
- MPhil (2003-2005), Synthesis, Structural Elucidation and Biological Applications of Vanadium (III) Complexes with Oxygen Donor Ligands.
- Intel Projects (2005-2006), Estimation and Comparison of Ascorbic acid in Commercially Available Fruit Juices and Fresh Fruits.
- Supervision of M.Sc Thesis (2009), Physico-Chemical Characterization, Distribution & Comparison of Heavy Metal Content of Textile Industry Effluent & its Adjoining Soil.
- Supervision of BS Project (2016), Use of Metal Loaded Cabbage Leaves as a Adsorbent for Environmental Application.
- Supervision of BS Project (2016), Use of Metal Loaded Turnip Peels as Adsorbent for Environmental Remediation.
- Facilitation (2020-2021) for project entitled “Synthesis, Characterization and Electrocatalytic Water Oxidation Studies of Cyanometallate Based Coordination Polymers) funded by Higher Education Commission, Pakistan.
- Facilitation (2020-2021) for project entitled “Climate change adaptations for indigenous coal desulfurization using ionic liquids” under Local Challenge Fund (LCF) funded by Higher Education Commission, Pakistan.

PROFESSIONAL SKILLS ACQUIRED

- Experience in designing, developing and upgrading advanced research laboratories of international grade.
- Tender Documentation of Analytical Instruments like XRD, GCMS, HPLC, TGA, FAAS, VGA, FTIR, UV-Visible spectrometer, Particle Size Analyzer, Total Fat Analyzer, Ovens, Meters and other accessories required for research laboratories.
- Training in handling and running of Sophisticated instruments like HPLC (Schimadzu LC-20A), GC-MS (GC-17, GC-MS QP-5050A), TGA (209 F 3 Tarsus, NETSCH, Germany) XRF (Epsilon 5), FAAS (Shimadzu FT-IR 8500), and UV-Visible Spectrophotometer (Schimadzu UV-1601).
- Interpretation of spectral data of GC-MS, HPLC, TGA, XRF, MS, UV-Visible, FT-IR Spectrophotometer.
- Expertise in handling of softwares for GIS (Arc View, ER Mapper), Printing & Publishing (Jet Image, Wide Image, Ulead Photo Express and Nero Burning), Chemistry (Chem Office, Chemwin, HyperChem), Protein Modelling (SPDV, Tinker, Gramm, Modeler 8v1, Raswin) and Air Pollution Monitoring Softwares.

PROFESSIONAL TRAININGS ACQUIRED

- Two Days Course on “Professional Development and Capacity Building Course” organized by Faculty of Engineering, Centre for Extension, Entrepreneurship and Professional Advancement (APEEC), University of Putra, Malaysia on August 20-21, 2007.
- One Week Training on Gas Chromatography-Mass Spectrometry (Schimadzu QP-5050) organized by Fatima Jinnah Women University, Rawalpindi on January 07-12, 2008.
- One Week Training on X-Ray Fluorescence (XRF) (Epsilon 5) organized by Fatima Jinnah Women University, Rawalpindi on January 28-February 02, 2008.
- Training Course on “Atomic Absorption Spectrometry; The Basic Theory and Recent Trends” organized by Allama Iqbal Open University, Islamabad in collaboration with Higher Education Commission, on March 05-06, 2008.
- Completed “Community Basic Life Support & Fire Safety Orientation Course” conducted by Punjab Emergency Service, at Fatima Jinnah Women University,

Rawalpindi, held on November 2-4, 2009.

- Attended one day workshop on “Women Personal & Professional Development” organized by NRSP – Institute of Rural Management, Islamabad on May 17, 2010
- Attended two day training on ATR FTIR Spectrophotometer (Schimadzu FTIR-8100) on May 9-10, 2011 at Fatima Jinnah Women University, Rawalpindi.
- Attended three days training on HPLC (Schimadzu 20A series) on June 18-20, 2012 at Fatima Jinnah Women University, Rawalpindi.
- Attended one month training Program on “Professional Competency Enhancement Program for Teachers (PCEPT), held at Fatima Jinnah Women University, Rawalpindi in collaboration with Higher Education Commission, Pakistan from September 02 to 26, 2013.
- Attended one month training on “Professional Competency Enhancement Program for Teachers” organized by FJWU in collaboration with NAHE, HEC, Islamabad from September 03 – 26, 2013.
- Attended five days training on TGA (209 F 3 Tarsus) from January 25 – 31, 2018 organized by FJWU.
- Attended Individual training on TGA (209 F 3 Tarsus) from March 26 – 27, 2019 in NETZSCH headquarters, Selb, Germany.
- Attended training on maintenance and troubleshooting of TGA (209 F 3 Tarsus) from February 22-24, 2023 by NETZSCH, Germany in Fatima Jinnah Women University, Rawalpindi.

SPECIALIZED COURSES TAKEN

- PhD (Chemical Toxicology, Solid Waste Management, Polymers & Environment, Adsorption Mechanisms, Environmental Forensics, Environment & Society).
- M.Phil. (Electronic Spectroscopy, Physical methods in Inorganic Chemistry, , Polymer Chemistry, Inorganic Material Chemistry, Analysis & Characterization of Polymers, Kinetics & Mechanisms of Inorganic Reactions, Organo-transition Metal Chemistry, Environmental Chemistry, Applied Atomic Absorption Spectroscopy, Molecular Spectroscopy).
- M.Sc. (Environmental Chemistry, Industrial Chemistry, Inorganic Chemistry-3, Inorganic Chemistry-4, Coordination Chemistry, Instrumental Methods, Chemical Crystallography, Elementary Group Theory, Inorganic, Polymer Chemistry, Nuclear and Radiochemistry).

WORKSHOPS / CONFERENCES ATTENDED

- One Week Workshop on “Workshop of Protein Molecular Modeling & Docking” organized by University of Arid Agriculture, (UAAR), Rawalpindi, held on January 23-27, 2006.
- One Day Seminar on “Water Analysis/ Electrochemistry instruments of Thermo Electron, USA (Orion)” on February 22, 2006 organized by We Brothers Scientific, Ltd.
- One Day Seminar on “Frontiers of Environment: WEHAB and MDGs” organized by Fatima Jinnah Women University in collaboration with Ministry of Environment, on April 08, 2006.
- Two day Workshop entitled “Rainwater Conservation: A Step towards Sustainable Environment” organized by University of Arid Agriculture, (UAAR), Rawalpindi in Collaboration with Pakistan Science Foundation held on September 21-23, 2006.
- 1st International Chemistry Conference on “Recent Challenges in Chemistry” organized by Government College University, Faisalabad held on 1st – 3rd November, 2006.
- Three Day Workshop on “Use of Advanced Software for Data Interpretation, Fingerprinting & Source Apportionment of Air Pollution & Back Trajectory Techniques for Key Transboundary Events”, organized by Pakistan Institute of Nuclear Science & Technology (PINSTECH), Islamabad, Pakistan, held on 09-10 April, 2007.
- Five Days Training Course entitled “5th National Training Course on Modern Techniques in Biotechnology” organized by National Institute for Biotechnology and Genetic Engineering (NIBGE), Faisalabad in collaboration with Atomic Energy Commission, Pakistan on May28th-June 01, 2007.
- Attended two days short course entitled “Activated Carbon and their environmental Applications” organized by PIEAS in collaboration with French Embassy from December 13-14, 2010.

WORKSHOPS / CONFERENCES ORGANIZED

- One Day Seminar on “Frontiers of Environment: WEHAB and MDGs” organized by Fatima Jinnah Women University in collaboration with Ministry of Environment, on April 08, 2006.
- One day Workshop on “Construction Industry and Environmental Problems: Alternatives and Solutions” organized by FJWU in collaboration with HEC on March 31, 2009
- Five Days International Conference on “Emerging Trends in Science & Technology” organized by FJWU in collaboration with HEC, Islamabad from September 05 – 09, 2016.

- Five Days Second International Conference on “Emerging Trends in Science & Technology” to be organized by FJWU in collaboration with HEC, Islamabad from October 02-06, 2023 (as Secretary Technical).

ABSTRACTS PUBLISHED IN PROCEEDINGS OF WORKSHOPS / CONFERENCES

- Saira S., Saqib A., Irum A., "Vanadium(III) Complexes of Oxygen Donor Ligands; Their Synthesis, Spectral Characterization and Antimicrobial Studies" presented in the Proceedings of 16th National & 6th International Chemistry Conference organized by Bahaudin Zikriya University, Multan , April 2006.
- Uzaira R., Irum A., Saima J., “ Study of Adsorption Capacities for the Removal of Hexavalent Chromium using Natural Wastes” on the International Conference on “The Challenges and Strategies for the Sustainability of Safe Drinking Water (ICSDW-2006), organized by Gahdhigram Rural Institute Dindigul District, Tamil Nadu, India, held on October 25-27th, 2006.
- Uzaira R., Ayesha A., Sumreen I., Irum A., Determination of Chromium in waste water, drinking water and soil contaminated by Tanneries, Sialkot, Trace Spec 2007, 11th Workshop on Progress in Analytical Methodologies for Trace Metal Speciation, September 4-7, 2007, Munster, Germany.
- Uzaira R., Hira K., Sumreen I., Irum A., Trace Metal Analysis in Root Crops and its Fields of Islamabad, Trace Spec 2007, 11th Workshop on Progress in Analytical Methodologies for Trace Metal Speciation, September 4-7, 2007, Munster, Germany.
- Jawaria I., Irum A., Naeema K., Physico-Chemical Characterization, Distribution Textile Effluent and Adjoining Soil, 9th International And 21st National Chemistry Conference, March 14-16, 2011.

PAPER PRESENTED IN WORKSHOPS / CONFERENCES

- Irum A., Saqib A., Saira S., Sohail M., “Vanadium (III) Complexes with Non-Steroidal Anti-Inflammatory Drugs; Their Synthesis, Spectral Characterization and Antimicrobial Studies” presented in Ist International Chemistry Conference entitled “RECENT CHALLENGES IN CHEMISTRY”, organized by GC University, Faisalabad on November 1-3rd, 2006.
- Jawaria I., Irum A., Naeema K., Physico-chemical Characterization, distribution and comparison of heavy metals from textile effluent and adjoining soil, presented in 9th International and 21th National Chemistry Conference, organized by H.E.J., Karachi on March14-15, 2011.
- Sadia B., Naeema K., Irum A., DPPH Antioxidant Assay and Heavy Metal Investigation of

Some Branded and Local Spices of Pakistan, presented in 12th International and 24th National Chemistry Conference on October 28-30, 2013 in Bahaudin Zikriya University Multan. Pakistan.

- Sana Z., Naeema K., Irum A., Mohammad A., Estimation of Phthalates in a Variety of Nail Enamel and Moisturizing Lotions Using GC-MS technique, presented in 12th International and 24th National Chemistry Conference on October 28-30, 2013 in Bahaudin Zikriya University Multan. Pakistan.
- Sofia K., Nazia B., Irum A., Noman A., Rahim S., An Assessment of Flouride Accumulation in the Air, Soil, Water and Vegetation around Brick Kilns at Tarnol, Islamabad, Pakistan, presented in 15th International Conference on Environmental Science and Technology, Rhodes, Greece, 31 August to 2 September 2017.
- Irum A., Uzaira R., Synthesis & fabrication of O-linked polymeric hybrids for recovery of textile dyes: Closed loop economy, in 15th International Conference on Challenges in Environmental Sciences and Engineering” (November 27-December 01, 2022) organized by LJS Environment, Australia in collaboration with Khalifa University, UAE.

INTERNATIONAL RESEARCH PUBLICATIONS

- Saira S., Saqib A., Irum A., Rizwana A., Guo-Xin J., "The Mechanism and Crystal Structure of 2-methoxy-2-methyl-4-phenyl-3,4,4a,10b-tetrahydro-2H,5H-pyrano[3,2-c]chromen-5-one. Acetal of Warfarin Acid" , Turk. J. Chem., 30 (2006), 703-709 (I.F. .481)
- Irum A., Saqib A., Saira S., Sohail M., "Vanadium(III) Complexes of Oxygen Donor Ligands; Their Synthesis, Spectral Characterization and Antimicrobial Studies" J. Chinese Chem. Soc., 2007, 54, 23-30 (I.F. 1.8)
- Structure Deposition of Newly Synthesized Compound ‘Acetal of Warfarin Acid’ at Database ‘Chemspider; Building Community for Chemist’. Saira Shahzadi, Saqib Ali, Irum Asif, Rizwana Ashraf and Guo-Xin Jin, ChemSpider ID: 24534193.(<http://www.chemspider.com/Chemical-Structure.24534193.html>).
- Sana. Z, Naeema K., Irum A., Zeeshan A., Muhammad A., Gas chromatography-Mass Spectrometric assessment of the presence of phthalates in branded and locally available cosmetics stored in glass and plastic containers, Journal of Chemical and Pharmaceutical Research, 2015, 7(4):824-829.
- Irum Asif (2018), Synthesis, Structural Elucidation and Biological Applications of Vanadium Complexes with Oxygen Donor Ligands, LAP-Lambert Academic Publishing Company,

ISBN: 978-3-659-69840-8.

- Chapter on “Good Laboratory Practices in Environmental Forensics” in Book Entitled “Trends in Environmental Forensics in Pakistan” published in Elsevier (ISBN: 978-0-12-819436-2).
- Irum A., & Uzaira R., (2021). Cellulose acetate based hybrids: fascinating material as a potential adsorbent for Congo red removal, Desalination and Wastewater Treatment, 244 (2021) 302–324 (I.F 1.273)
- Irum A., Uzaira R., Synthesis & Fabrication of O-Linked Polymeric Hybrids for Recovery of Textile Dyes: Closed Loop Economy, Environmental Research, In Press, Journal Pre-proof, Available online 30 July 2023 (I.F. 8.431).