


Dr. ATTIQ-UR-REHMAN KAKAR

Father's Name: Kamal Khan Date of Birth: 04/05/1978 Marital Status: Married Religion: Islam N.I.C No: 54400-8815939-3 Local /District: Loralai Province: Balochistan, Pakistan Permanent Add: Village Barnima, Bori, Loralai. Postal Address: Dept. of Chemistry, University of Balochistan.	
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Area of Interest:

- The application of Flow Injection Analysis (FIA) in conjugation with Chemiluminescence (CL), Spectrophotometric, flame atomic absorption spectrometric (FAAS) and Electroanalytical (EA) detection systems in Environmental Analytical Chemistry. Determination of Trace elements (iron, copper, cobalt, manganese, vanadium etc), micro nutrients (phosphate, nitrate, nitrite etc) and emerging pollutants (Paracetamol, Caffeine, Ibuprofen, anti-biotics etc) in environmental Water Samples (coastal water, open seawater, river water, underground water, sewerage water etc).
- To investigate the role of Trace elements (iron, copper, cobalt, manganese, vanadium etc) and macro nutrients (phosphate, nitrate, nitrite etc) in the growth of Phytoplankton and lowering the concentration of atmospheric carbon dioxide (CO₂) gas which is one of the main cause of climate change.
- The application of Flow Injection Analysis (FIA) in the identification of potent antioxidant in plants and making strategies for their conservation, preservation and development into druggable form of such plants.

Education:

- **Postdoc** (Emerging Pollutants/Toxicants determination in environmental samples and pharmaceutical formulations through Flow Injection-Voltametric detection system. Department of Chemical Engineering and Analytical Chemistry, University of Barcelona, Spain, September 2022 to April 2023)
- **PhD** (Analytical Chemistry)
Department of Chemistry, University of Balochistan, 2013.
- **MSc** (Chemistry)
Department of Chemistry, University of Balochistan, 2001.
- **BSc** (Chemistry, Zoology & Botany)
University of Balochistan, 1998.
- **FSc** (Premedical)
Federal Board of Intermediate and Secondary Education, Islamabad, 1996.
- **SSC** (Science)

Experience:

- Associate Professor (BS-20) in Department of Chemistry, Faculty of Basic Sciences, University of Balochistan, Quetta, Pakistan. February 28, 2022 to present.
- Manager Research Management, Office of the Research, Innovation and Commercialization, University of Balochistan, Quetta. October 13, 2021.
- Assistant Professor (TTS-19) in Department of Chemistry, Faculty of Basic Sciences, University of Balochistan, Quetta, Pakistan. May 11, 2017 to February 2022.
- Assistant Professor (BPS/TTS-19) in Department of Chemistry, University of Turbat, Balochistan, September 01, 2015 to May 10, 2017.
- Lecturer (BPS-17) in Education Department of Balochistan, August 15, 2008 to August 31, 2015.
- Appointed as Senior Science Teacher (BPS-17) in Education Department of Balochistan, April 07, 2003 to December 12, 2007.

Research Projects /Trainings:

- Trace Metal Interferences in the Determination of dissolved Iron in Open Seawater using Flow Injection Analysis using Luminol Chemiluminescence Detection System. International Research Support Initiative Programme (IRSIP), Higher Education Commission of Pakistan (Oct. 2008 - Feb 2009). GBP= 7500
School of Earth, Ocean and Environmental Science, University of Plymouth, United Kingdom, October 2008 to February 2009.
- Flow Injection Analysis with Electroanalytical Detection Systems for the Determination of Emerging Pollutants in Environmental Samples. HEC Post-Doctoral Fellowships Programme (Phase III)-Batch 2. (3-1/PDFP/HEC/2021/1585(B-2)/02. \$=20500
Department of Chemical Engineering and Analytical Chemistry, Faculty of Chemistry, University of Barcelona, Barcelona Spain. (September 2022 to June 2023).
- Development of environment green methods and risk assessment for pesticides in rice/cabbage and water samples by flow injection coupled with chemiluminescence/spectrophotometric detection of two distinct agriculture-impacted areas of Balochistan.
University of Balochistan Research Fund (UBRF) 2021 With the support of Government of Balochistan Research and Development Fund (GBRDF). UoB/ORIC/22/UBRF-21/22. Rs: 2.43 million. March 2023-Dec. 2024.

Research Supervision:

- PhD: Four students. Two theses have been submitted and two are in research progress.
- MPhil: About twenty (20) have supervised and about Fifteen have been degree awarded.

Papers Published:

1. Mohammad Yaqoob, Atiq-ur-Rehman, Amir Waseem and Abdul Nabi. Determination of Iodide using flow injection with acidic potassium permanganate Chemiluminescence detection, **Luminescence** 21, No. 4(2006)221-225. (IF = 2.527)

2. **Attig-ur-Rehman**, Mohammad Yaqoob, Amir Waseem and Abdul Nabi. Determination of Arsenic(V) in fresh water by flow injection with Luminol Chemiluminescence detection, **Inter. J. Environ. Anal. Chem.** 88, No. 9(2008)603-612. (IF = 1.35)
3. **Attig-ur-Rehman**, Amir Waseem, Mohammad Yaqoob and Abdul Nabi. Flow Injection Spectrophotometric Determination of Total Iron In Fresh Water Using 1,10-Phenanthroline Reagent. **J. Chem. Soc. Pak.** 30, No. 6(2008)836-839. (IF = 0.345)
4. **Attig-ur-Rehman**, Mohammad Yaqoob, Amir Waseem and Abdul Nabi. Flow Injection Determination of Mo(VI) in Freshwaters with Luminol Chemiluminescence Detection. **J. Chem. Soc. Pak.** 31, No. 1(2009)74-79. (IF = 0.345)
5. **Attig-ur-Rehman**, Mohammad Yaqoob, Amir Waseem and Abdul Nabi. Flow Injection determination of total iron in freshwater samples with neutralization Chemiluminescence, **Intern. J. Environ. Anal. Chem.** 89, No. 14(2009)1071-1080. (IF = 1.35)
6. **Attig-ur-Rehman**, Mohammad Yaqoob, Amir Waseem, Abdul Nabi and Maqsood A. Khan. Determination of phosphate in freshwater samples by flow injection with lucigenin Chemiluminescence. **Intern. J. Environ. Anal. Chem.** 90, No. 14(2010)1119-1129. (IF = 1.35)
7. Simon J. Ussher, Angela Milne, William M. Landing, **Kakar Attig-ur-Rehman**, Marie J.M. Séguret, Toby Holland, Eric P. Achterberg, Abdul Nabi, Paul J. Worsfold. Investigation of iron(III) reduction and trace metal interferences in the determination of dissolved iron in seawater using flow injection with luminol chemiluminescence detection., **Anal. Chmi. Acta.** 652, No. 1(2009)259-265. (IF = 4.31)
8. **Attig-ur-Rehman**, Mohammad Yaqoob, Amir Waseem and Abdul Nabi. Pico molar Determination of Vanadium(IV) in seawater and freshwater by flow injection with Luminol Chemiluminescence detection, **Luminescence** 26, No. 6(2011)403-409. (IF = 2.527)
9. **Attig-ur-Rehman**, Mohammad Yaqoob, Amir Waseem and Abdul Nabi. Flow injection determination of nitrite and nitrate in fresh water samples with luminol hypochlorite inhibition Chemiluminescence detection, **Acta. Chim. Solv.** 58, No. 3(2011)569-575. (IF = 1.328)
10. Naqeebullah Khan, Yang Farina, Elhadi E Saad, Samiullah, Emad Yousif, Mohammad Anwar Panezai and **Attig-ur-Rehman**. Synthesis and Structural elucidation of diorganotin(IV) derivative of N-Phenyl-o-Methoxybenzohydroxamic acid., **Journal of Science & Technology. Lasbela, U. J. Sci. Techl.** 00 (2015) 0-0.
11. Samiullah, Samina Aslam, Noor Saba Kishwer Taher, Fehmila Raof, Fariha Alam, Salma Khalid, Naqeebullah Khan, Abdul Kabir Khan Achakzai and **Attig-ur-Rehman**., Qualitative and quantitative phytochemical investigation of leaves of *Narium indicum* collected from Panjgur, Balochistan., **Lesbela, U. J. Sci. Techl.** 00 (2015) 0-0.
12. Samiullah, Fareha Alam, Samina Aslam, Saniya Jadoon, Sajida, Rasool Bakhsh Tareen, Naqeebullah, Muhammad Aslam Buzdar, Muhammad Raza Khan, Saleha Suleman, Muzzafar Khan and **Attig-ur-Rehman**. Determination of chemical composition, total phenolic contents and antioxidant activity of *Xylanthmum macropodum*. **J. Chem. Soc. Pak.**, 39(01)(2017)83-91. (IF=0.327)
13. Ali Irshad, Naqeebullah Khan, Yang Farina, Nizam Baloch, Samiullah, Akbar Ali, Lo Kong Mun, Ghulam Murtaza, **Attig-ur-Rehman**. Synthesis, spectroscopic characterization, X-ray diffraction studies and in-vitro antibacterial activities of diorganotin(IV) derivatives

with N-methyl-4-bromobenzohydroxamic acid., **Inorganica Chimica Acta**, 469 (2017) 280–287. (IF=2.264)

14. **Attig-ur-Rehman Kakar**, Naqeebullah Khan, Samiullah, Naeemullah, Amir Waseem and Fazal-ur-Rehman. The application of flow injection analysis coupled with luminol chemiluminescence in basic medium. A – Review. **J. Chem. Soc. Pak.**, 40 (2018) 1103-1118 (IF=0.327)
15. Abdul Baqi , Samiullah , Rasool Bakhsh Tareen , Anum Mengal , Naqeebullah Khan , Farida Behlil , Abdul Kabir Khan Achakzai , Muhammad Anwer , **Attig-Ur-Rehman** , Mohammad Faheem. Determination of antioxidants in two medicinally important plants, Haloxylon griffithii and Convolvulus leiocalycinus, of Balochistan, **Pure Appl. Biol.**, 7(1) (2018)296-308.
16. Kinza Ghazal , Sarah Shoaib , Mahira Khan , Samiullah Khan, Muhammad Khawar Rauf, Naqeebullah Khan, Amin Badshah , Muhammad Nawaz Tahir , Irshad Ali, **Attig-ur-Rehman**., Synthesis, characterization, X-ray diffraction study, in-vitro cytotoxicity, antibacterial and antifungal activities of nickel(II) and copper(II) complexes with acyl thiourea ligand,. **Journal of Molecular Structure** 1177 (2019) 124-130 (IF= 2.10)
17. Abdul Ghaffar, Naqeebullah Khan, Samiullah, Irshad Ali, Ali Akbar, **Attig-ur-Rehman**, Waheed Ahmed Shah, Abdul Baqi and Saifullah., Biological and electronic transition studies of the previously reported organotin (IV) dithiocarbamates of p-FluoroN-methylbenzylaminedithiocarbamate ., **Pure Appl. Biol.**, 8(1) (2019)672-679.
18. Munir Ahmad, **Attig-ur-Rehman**, Samiullah, Rasool Bakhsh Tareen, Naqeebullah Khan, Abdul Baqi and Abdul Manan., Qualitative and quantitative determination of phytochemicals in Convolvulus leiocalycinus and Haloxylon griffithii., **Pure Appl. Biol.**, 8(1)(2019)733-741.
19. Atta Muhammad, **Attig-Ur-Rehman**, Naqeebullah Khan, Samiullah, Muhammad Asghar, Abdul Baqi, Abdullah Jan zeerak, Mohammad Hussain and Hayatullah., Spectrophotometric determination of phenolic antioxidants in four varieties of apples (Pyrus malus) from Balochistan, Pakistan., **Pure Appl. Biol.**, 8(1)(2019)768-779.
20. Farida Behlil, Samiullah, Naqeebullah Khan, Ali Akbar, Rasool Bakhsh Tareen, Abdul Kabir Khan Achakzai, Irshad Ali and **Attig-ur-Rehman**., Phytochemical screening and antioxidant activity determination of some medicinally important plants of balochistan., **Pak. J Bot.** 51(2)(2019)601-608 (IF=0.825)
21. Warda Saifullah, Samiullah, Naqeebullah Khan, **Attig-ur-Rehman**, Pari Wash Mengal, Abdul Baqi and Abdul Manan., Profiling of various elements in Haloxylon griffithii and Convolvulus leiocalycinus using atomic absorption spectroscopy and flame photometry., **Pure and Applied Biology** 8(2)(2019)1535-1542.
22. Imran Kiazai, Samiullah, Naqeebullah Khan, **Attig-Ur-Rehman**, Abdul Ghaffar and Abdul Baqi., Determination of heavy metals concentration in Astragalus anisacanthus and Ebenus stellata of Balochistan, Pakistan., **Pure and Applied Biology** 8(2)(2019)2028-2035.
23. Najeebullah Kakar, Samiullah, Naqeebullah Khan, Attiq-ur-Rehman Kakar, Rasool Bakhsh Tareen, Nazia Meer, S. W. H. Shah, Irshad Ali, Muhammad Asghar and Abdul Baqi Achakzai,. Determination of antioxidants and antimicrobial activities of Platyaenia multicaule., **ANJS** 22(4) (2019)10-29.
24. Pari Wash Mengal, Samiullah, Naqeebullah Khan, **Attig-ur- Rehman**, Abdul Baqi, Warda Saifullah and Abdul Manan., Determination of mineral and heavy metals in Cousinia stocksii Eremostachys thyrsoflora and Gaillonia macrantha plants for health safety approaches by atomic absorption and flame photometry techniques., **Pure and Applied Biology** 8(2)(2019)1571-1578.
25. Hayatullah Khan, **Attig-ur-Rehman Kakar**, Samiullah Khan, Naqeebullah Khan, Irshad Ali and Abdul Baqi Achakzai., Physicochemical and Spectroscopic Elemental Analysis of Ground Water in Thickly Populated and Industrial Area of Quetta Valley Pakistan., **Al-Nahrain Journal of Sciences** 22(3)(2019)18-25.

26. Abdul Hakeem, Naqeebullah Khan, **Attig-ur-Rehman**, Samiullah Khan., A Comparative Study of the Heavy Metals in the Meat of Chickens in Different Cities of Pakistan. A Review. **Al-Nahrain Journal of Sciences** 23(2)(2020)175-179.
27. Mahira Khan, Naqeebullah Khan, Kinza Ghazal, Sara Shoaib, Samiullah, Irshad Ali, Muhammad Khawar Rauf, Amin Badshah, Muhammad Nawaz Tahir & **Attig-Ur Rehman**., Synthesis, characterization, crystal structure, invitro cytotoxicity, antibacterial, and antifungal activities of nickel(II) and cobalt(III) complexes with acylthioureas,. **Journal of Coordination Chemistry**., 73(12)(2020)1790–1805. (IF= 1.62)
28. Abdullah Jan, Naqeebullah Khan, **Attig-ur-Rehman Kakar**, Samiullah and Abdul Hakeem,. Importance of Polyvinylpyrrolidone as PyrrolidoneBased Surfactants and as Poly (N-vinylpyrrolidone)- Modified Surfaces for Biomedical Applications. A Review,. **European Academic Research** 8(5) (2020)2899-2911.
29. Abdul Sattar, Abdul Baqi, Muhammad Suleman, Muhammad Tahir Shah, Samiullah, Naqeebullah Khan and **Attig-Ur-Rehman**., Elemental analysis of medicinal plants and their impacts on human health,. **Pure and Applied Biology**., 9(1)(2020)249-255.
30. Khair Un Nisa, Samiullah, Naqeebullah Khan and **Attig-ur-Rehman**., Detection of Heavy metals in Fruits and Vegetables available in the Market of Quetta city,. **Al-Nahrain Journal of Sciences** 23(1) (2020)47-56.
31. Bibi Shereen, **Attig-ur-Rehman Kakar**, Naqeebullah Khan, Abdul Hakeem Tareen and Samiullah Khan,. Determination of Trace Elements in the Eggs of Poultry in Quetta, Balochistan,. **European Academic Research** 8(8) (2020)4852-4859.
32. Farzana Saleem, Naqeebullah Khan, Samiullah, **Attig-ur-Rehman** and Irshad Ali,. Synthesis of Hydroxamic Ligands with Transition Metal Complexes, their Biological Activities and Characterization Through Spectroscopic Techniques,. **Al-Nahrain Journal of Sciences** 23(2)(2020)1-7.
33. Hayat Ullah, Naqeebullah Khan, **Attig-ur-Rehman**, Samiullah Khan, Shams Ullah and Abdul Hakeem,. Physico-chemical and Spectroscopic Elemental Analysis of Fresh Water in Villages near Chromium Mines of Khanozai, Balochistan Pakistan,. **European Academic Research** 8(5) (2020)2912-2925
34. Bibi Shireen, Naqeebullah Khan, Samiullah, Irshad Ali, Ali Akbar, **Attig-ur-Rehman** and Farida Behlil,. Biological evaluation, synthesis and characterization of transition metal complexes of N-Methyl o and psubstituted benzohydroxamic acids,. **Pure and Applied Biology**., 9(4)(2020)2199-2206.
35. Abdul Wasai, **Attig-ur-Rehman Kakar**, Naqeebullah Khan, Abdul Hakeem and Samiullah Khan,. Detection of Physicochemical Parameters and Spectroscopic Analysis of Heavy Metals in Drinking Water of District Harnai,. **European Academic Research**, 8(4) (2020) 1884-1891.
36. Aminullah Mandokhail, Samiullah, Naqeebullah Khan, , Abdul Hakeem Tareen, **Attig-Ur-Rehman Kakar**, Sonia Tariq, Naqeebullah Kakar,. Determination of Antioxidants by Four Different Methods in Medicinally Important Plant Ebenus Stellata of Balochistan,. **Al-Nahrain Journal of Sciences** 23(4)(2020)13-18.
37. Muhammad Hashim, Samiullah, Naqeebullah Khan, Abdul Hakeem and **Attig-ur-Rehman Kakar**., Determination of Heavy Metals in Mentha longifolia of District Zhob, Balochistan,. **European Academic Research** 9(1) (2021)457-467.
38. Hira Javaid Siddiqui, Shamim Gul, **Attig-ur-Rehman Kakar**, Umbreen Shaheen, Gul Bano Rehman, Naqeebullah Khan and Samiullah,. Poultry Manure as an Organic Fertilizer with or without Biochar Amendment: Influence on Growth and Heavy Metal Accumulation in Lettuce and Spinach and Soil Nutrients,. **Phyton-International Journal of Experimental Botany**., 90(2) (2021)651-676. (IF=0.329)
39. Shameen Alizai, **Attig-ur-Rehman**, Naqeebullah Khan, Samiullah Khan, Abdul Hakeem and Abdul Ghaffar,. Determination of Heavy Metals Concentration in Four Different Samples of Apples District Kalat, Balochistan, Pakistan,. **European Academic Research** 9(5) (2021)3060-3069.

40. Faiza Altaf , Shamim Gul, Tasawar Ali Chandio, Gul Bano Rehman, **Attig-ur-Rehman Kakar**, Sami Ullah, Naqeebullah Khan, Umbreen Shaheen, Muhammad Naeem Shahwani, Muhammad Ajmal and Misbah Manzoor,. Influence of Biochar based Organic Fertilizers on Growth and Concentration of Heavy Metals in Tomato and Lettuce in Chromite Mine Tailings Contaminated Soil,. **Sarhad Journal of Agriculture**., 37(2021) 315-324. (IF=0.7)
41. Abdul Qahir, **Attig- Ur- Rehman Kakar**, Naqeebullah Khan, Samiullah, Abdul Hakeem, Rehana Kamal and Fazal-Ur-Rehman,. The Antioxidant, Antimicrobial, and Clinical Effects with Elemental Contents of Pomegranate (Punica Granatum) Peel Extraction: A Review,. **Baghdad Journal of Biochemistry and Applied Biological Sciences** 2(01)(2021)21-28.
42. Rooh Ullah, Saif Ullah, Rasha M.K. Mohamed, Muhammad Sufaid Khan, Rozina Khattak and **Attig Ur Rehman Kakar**.. Qualitative Analysis of Two Phenolic isomers of Carvacrol and Thymol by using Briggs-Rauscher Oscillator System,. **Int. J. Electrochem. Sci.**, 16 (2021) Article Number: 211257, doi: 10.20964/2021.12.57 (IF=1.55)
43. Iqra Arshad, Muhammad Ayub Kakar, **Attig-ur-Rehman Kakar**, Noor Hassan Kakar, Saeeda Khanam, Rehana Kamal and Atta Muhammad,. Comparative Study of Total Phenolics and Antioxidants in ASTRAGLUS STOCKSII by using Methanol, Ethanol and Acetone and to Evaluate its Anti -Inflammatory Activity,. **ANJS** 24 (3) (2021)16-22.
44. Zareen Gul, Ali Akbar, Saadullah Khan Leghari, **Attig Ur Rehman Kakar**, Naqeebullah Khan, Javed Muhammad, Nazir Ahmad Khan, Zia Ur Rehman, Rehana Kamal, Imran Ali,. Daily Dose Standardization Based on Essential and Nonessential Trace Element Presence in Berberis baluchistanica Ahrendt Bark, Leaf, and Root, **BioMed Research International** Volume 2022, Article ID 6811613, 9 pages. (IF=3.24)
45. Habib ur Rehman, **Attig ur Rehman Kakar**, Yaqoob, M., Asghar, M., Saeed Ahmed, S., & Nisa, K. U. (2022). Determination of pioglitazone hydrochloride by flow injection chemiluminescence tris (2, 2'-bipyridyl) ruthenium (II)-silver (III) complex system. **Luminescence** 38(2023) 99-108. (IF=2.65)
46. Khair Un Nisa, **Attig Ur Rehman Kakar**, Muhammad Asghar, Sami ullah, Naqeeb ullah, Niamatullah Kakar and Arif Shah, Flow Injection Chemiluminescence Determination of Acetochlor and Cartap-HCl in Fresh Water Samples Employing Acidic KMnO₄–Rhodamine-B Reaction System,. **Luminescence** 38(2023)647-661. (IF=2.65).
47. Abdul Hakeem, Naqeebullah Khan, Rehana Kamal, **Attig-Ur-Rehman Kakar**, Samiullah, Habiba Taj, Khair Un Nisa., Flow Injection Determination of Paracetamol in Pharmaceutical Formulations using Luminol-Diperiodatoargentate (III) System with Chemiluminescence Detection,. **Journal of Population Therapeutics & Clinical Pharmacology** 31 (5) (2024)1578-1590. (IF =1.94)
48. Rishteen Wasay Khan, **Attig Ur Rehman Kakar**, Naqeebullah Khan, Abdul Hakeem and Sami Ullah., Determination of selected metal concentrations in potatoes with different brands of potato chips in Quetta,. **S. Afr. J. Chem.** 78(2024)158–161. (IF = 1.82)
49. Abdul Ghafar, Naqeebullah khan, Muhammad Zafar Saleem, Irshad Ali, **Attig Ur Rehman**, Waheed Ahmed Shah and Samiullah., Identification and Characterization of Evolutionary Conserved Muskmelon Non-coding miRNAs and Their Target Proteins,. **Biochemical Genetics** 2024 (IF = 2.95)
50. Abdul Baqi, Samiullah, Ghulam Mustafa Khan, Asadullah, Naqeebullah Khan, **Attig-Ur-Rehman** and Alia Ahmed., Identification and characterization of functional microRNAs and their significant targets in maize plants,. **Journal of Plant Biochemistry and Biotechnology**(2024) (IF = 1.94)
51. A. Hakeem1, N. Khan, **A.-ur-R. Kakar**, Samiullah, M. Asghar and G. M. Khan., Determination of Heavy Metals in Domestic and Broiler Chickens Meat in Quetta City,. **Portugaliae Electrochimica Acta** 43 (2025) 355-363. (IF = 1.1)
52. Khair Un Nisa Jaffar, **Attig Ur Rehman Kakar**, Muhammad Asghar, Samiullah Khan and Naqeebullah Khan., Flow injection chemiluminescence determination of lambda-

cyhalothrin and clodinafop-propargyl in freshwater samples,. International Journal of Environmetal Analytical Chemistry (2025) doi.org/10.1080/03067319.2024.2416516