



ڈاکٹر محمد اخیار فرخ

PROF. DR. MUHAMMAD AKHYAR FARRUKH



**Head of Department (HOD) - Chemistry
Director ORIC/Research
University of Central Punjab, Lahore, Pakistan**



Distinction/Merit Certificate, University of Karachi: **1999**
Three Gold Medals, University of Karachi: **2000**
Representative of Pakistan by UNESCO, Morocco: **2004**
Productive Scientists of Pakistan, PCST, Government of Pakistan since: **2005**
 (Ranked at 11th in Pakistan) (Category Chemistry Young Scientists in 2017)
TWAS-CNPq Postdoctoral Fellow, Brazil: **2007**
Young Chemist Award by IUPAC, Italy: **2007**
TWAS-USM Postdoctoral Fellow, Malaysia: **2010**
Young Scientist Award by TWAS, Egypt: **2010**
Young Scientist Award by IAP, Germany: **2010**
Young Scientist Award by World Economic Forum, China: **2010**
Young Scientist Award by BioVision Alexandria, Egypt: **2012**
Young Researcher by Lindau Nobel Laureate Meetings, Germany: **2013**
Award for Chemists from Developing Countries by IUPAC, Korea: **2015**
Established Nano-Chemistry Lab with research grants: **2015**
Four Gold Medals including one from Minister HED: **2014, 2016**
Research Productivity Awards (A, B, C, G), Pakistan: **2012, 2013, 2015, 2017**
SATHA Innovation Award with **Gold Medal**: **2018**
Best Performance Gold Medal, Presented by the Governor of the Punjab: **2020**
World's Top 02% Scientists by Stanford University, Elsevier: **2023-2025**
Member of International Professional Bodies: **21**
Industrial/Research Grants Won (TWAS, USM, HEC, PSF, UA, NSFC, UCP, PHEC): **19**
MS/M.Phil./Ph.D. Theses Supervised/Degrees Awarded: **85**
BS/BSc.(Hons.)/MSc. Theses Supervised/Degrees Awarded: **50**
Papers Published in Referred Journals: **146**
US Patents/Applications Issued: **07**
Impact Factor: **+335**
h-index: **36**
Citations: **+4200**
Books/Chapter Published/Edited: **27**
Plenary/Keynote/Invited Lectures: **113**
Papers Presented in International/National Conferences: **51**
Reviewer of Journals: **+100**
Countries visited: **25**

Profile

Name: **Muhammad Akhyar Farrukh** (محمد اخیار فرخ)
Father's Name: Khushi Muhammad Farrukh (Late)
Domicile: District Lahore (Punjab)
Nationality: Pakistani
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Tel No: +92 (42) 35880007 (office) Ext: 709
Fax: +92 (42) 35954892 (office)
Address: Department of Basic and Applied Chemistry
University of Central Punjab, 1-Khayaban-e-Jinnah Road
Johar Town, Lahore-54782, PAKISTAN

Academic Qualification

Post Doctorate, 10-07-2009 to 15-07-2010

(Area of Research: Nanomaterials: Synthesis, characterization and application)
School of Chemical Sciences, Universiti Sains Malaysia (USM), Penang, Malaysia

Post Doctorate, 30-03-2006 to 30-03-2007

(Area of Research: Physical Chemistry; Catalysis, Micellar Effects, Kinetics)
Department of Chemistry, Federal University of Santa Catarina (UFSC), Brazil

Ph.D. (Chemistry), 08-08-2003

(Area of Research: Physical Chemistry; Kinetics of Transition Metal Complexes)
Department of Chemistry, University of Karachi
(HEC Approved PhD Thesis, <http://eprints.hec.gov.pk/1307/1/1019.html.htm>)
PhD Country Directory: PCD Number 7403

M.Sc. (Chemistry), 31-01-2000.

First Class First Position in the Physical Chemistry
First Class First Position in the Department of Chemistry
First Class First Position in the Entire Faculty of Science
Total Marks: 1000, Marks obtained: 885
Percentage: 88.50%, Division: First, Grade: A, Grade point: 4.
Department of Chemistry, University of Karachi

B.Sc. (Hons), 31-12-1998.

First Class First Position in the Department of Chemistry
Total Marks: 2600, Marks obtained: 1954
Percentage: 75.15%, Division: First, Grade: A, Grade point: 4.
Department of Chemistry, University of Karachi

Higher Secondary Certificate, 11-11-1995.

Total Marks: 1100, Marks obtained: 735
Percentage: 66.82%, Division: First, Grade: B.
Board of Intermediate Education, Karachi
Govt. Superior Science College, Karachi, Pakistan.

Secondary School Certificate, 19-07-1993.

Total Marks: 850, Marks obtained: 661
Percentage: 77.76%, Division: First, Grade: A, Remarks: Excellent.
Board of Intermediate and Secondary Education, Gujranwala
Govt. Higher Secondary School Kamoke, Gujranwala, Pakistan

Professional Experience

S.#	POST	YEAR	INSTITUTION	NATURE OF DUTIES
1	Adjunct Professor (Nanomaterials)	01.05.2024 to date	Shandong University of Science and Technology, Qingdao, Shandong Province, China .	Teaching, curriculum development, advising to students, research collaboration with faculty members and researchers on interdisciplinary research projects, engaging in continuous professional development activities such as attending conferences, workshops, and seminars, participating in departmental meetings, committees
2	Professor (Chemistry)	15.09.2022 to date	Department of Basic and Applied Chemistry, University of Central Punjab, Lahore	Teaching, research and supervision of B.Sc(Hons)/M.Phil/PhD students
3	Associate Professor (Chemistry)	04.10.2018 to 14.09.2022	Department of Chemistry, Forman Christian College (A Chartered University), Lahore	Teaching, research and supervision of B.Sc(Hons)/M.Phil/PhD students
4	Assistant Professor (Chemistry)	17.06.2008 to 03.10.2018	Department of Chemistry, GC University, Lahore	Teaching, research and supervision of B.Sc(Hons)/M.Phil/PhD students
5	Postdoctoral Fellow (Study leave from GC University Lahore)	10.07.2009 to 15.07.2010	School of Chemical Sciences, Universiti Sains Malaysia, Penang, Malaysia	Metal Oxides Nanoparticles and Metal Organic Framework: Synthesis and Host-Guest Interaction Study
6	Postdoctoral Fellow (Study leave from PCST)	30.03.2006 to 30.03.2007	Department of Chemistry, Federal University of Santa Catarina, (UFSC) Florianopolis, Brazil	Catalysis and Mechanism of Organic Reactions; Micellar Effects on Reactions of Phosphoric, Sulphuric and Carboxylic Acid Esters
7	Senior Research Officer BPS-18	14.10.2005 to 16.06.2008	Pakistan Council for Science and Technology (PCST), MoST, Shahrah-e-Jamhuriat, G-5/2, Islamabad	1. S&T policy making. 2.To evaluate the data of the scientists/ engineers for the publication of the directory of Productive Scientists of Pakistan and of Research Productivity Allowance to the leading scientists of Pakistan. 3.Matters of Special Science and Technology Allowance (SS&TA), and International /National awards. 4.Worked in National Commission for Science and Technology, apex Govt. body on S&T, headed by the Prime Minister of Pakistan. Engaged in preparing agenda items, working papers for the meetings.

8	Senior Scientific Officer (BPS-18)	27.01.2004 to 13.10.2005	Pakistan Council of Scientific and Industrial Research, Jamrud Road, Peshawar	Planning and execution of R&D projects. Analysis of samples related to materials science. Assisted in ISO-17025, and different official jobs assigned by Head of the Centre.
9	Full Time Cooperative Teacher (B-17&18)	11.08.2000 to 25.01.2004	Department of Chemistry, University of Karachi	Research and teaching of BSc, M.Sc students of physical and analytical Chemistry

Administrative/Management Experience

S.#	POST	YEAR	INSTITUTION	NATURE OF DUTIES
	Head of Department (HOD)	15.06.2025 to date	University of Central Punjab, Lahore	To manage the academic and administrative affairs of the Department of Basic and Applied Chemistry
1.	Director ORIC	01.05.2025 to date	University of Central Punjab, Lahore	To manage the affairs of the Office of Research Innovation and Commercialization (ORIC) at UCP.
2.	Director Research	17.03.2025 to date	University of Central Punjab, Lahore	To look after the affairs of Research matters of UCP.
3.	Director Post Graduate Programs, Faculty of Science and Technology	27.09.2022 to 28.09.2025	University of Central Punjab, Lahore	To look after the affairs of Post Graduate Programs offered in Faculty of Science and Technology, having 10 M.Phil./MS and 06 PhD programs.
4.	Acting Dean Faculty of Science and Technology	01.10.2024 to 16.03.2025	University of Central Punjab, Lahore	To look after the academic, administrative affairs of the faculty including 07 departments, 26 UG and PG programs with 100+ faculty members along with lab staff.
5.	Principal Investigator of Projects/Founding Director, Nano-Chemistry Lab.	30.04.2015 to 03.10.2018	Nano-Chemistry Lab., GC University Lahore	Established Nano-Chemistry Lab. with the research projects funded by HEC, TWAS, PSF and GCU. Management and R&D of projects and Lab.
6.	Registrar	13.11.2013 to 30.06.2016	GC University Lahore	(i) Human resource management, academic and admission matters of the University (ii) Secretary of the Syndicate, the Academic Council, Advanced Studies and Research Board, the Selection Board and such other Committees (iii) Intra-departmental, Inter-departmental and Inter-sectoral co-ordination. etc.
7.	Public Information Officer	07.04.2014 to	GC University Lahore	To provide information, implementation of the Punjab Transparency and Right to

		20.05.2016		Information Act 2013 at GC University Lahore.
8.	Coordinator, Diploma in Forensic Science	23.08.2013 to 30.09.2014	GC University Lahore	Prepared proposal, feasibility, and curriculum. Approved by BoS on 05.04.2013 and BoF on 30.04.2013 and Academic Council on 07.08.2013. Relinquished the charge with the appointment as Registrar, GC University Lahore.
9.	Coordinator, Certificate in Forensic Science	01.10.2012 to 30.09.2014	GC University Lahore	Prepared proposal, feasibility, and curriculum. Approved by BoS on 10.07.2012. Administration, financial matters, purchasing, curriculum, examination internship etc. Relinquished the charge with the appointment as Registrar, GC University Lahore.
10.	Look After Charge	01.10.2014 to 17.03.2015	Abdus Salam School of Mathematical Science, GC University Lahore	Administrative affairs. Managed Finance and Planning Committee and Board of Governors meetings, matters related to faculty, staff and students. Worked till the appointment of DG, ASSMS.
11.	Coordinator, MS in Forensic Chemistry	24.10.2011 to 30.09.2014	GC University Lahore	Administration, financial matters, purchasing, curriculum, examination, internship etc. Relinquished the charge with the appointment as Registrar, GC University Lahore.
12.	Project Director	01.07.2007 to 16.06.2008	Pakistan Council for Science and Technology, Islamabad	To look after/management of the Project "Engagement of Consultants and Experts/Member of Peer Review Committees to implement National Commission on Science and Technology (NCST) Recommendations" Worked till the appointment at GC University Lahore.
13.	Officer Incharge / Head RES	02.04.2007 to 16.06.2008	Pakistan Council for Science and Technology, Islamabad	To look after, working and management of the Research Evaluation Section (RES). Worked till the appointment at GC University Lahore.

Community Services/Responsibilities Undertaken at International/National and University Level

1. Member, Board of Studies of Department of Chemistry, GC Women University, Faisalabad, 01.10.2026. No. GCWUF/Reg/Acad/26/2526
2. Member of the Lahore Chamber of Commerce & Industry (LCCI) Standing Committee on "Industry-Academia Linkage" for the year 2025-26. Ref. No. LCCI/R&D/SC-IAL/26 dated 04.02.2026

3. Resource Person, Training workshops on “Generative AI for Research and Academics” for the faculty members (+250) of the University of Central Punjab (UCP), Lahore, September 08-11, 2025 and GenAI Training for University Staff to Enable Efficient Workflows, 23.12.2025.
4. Master Trainer/Resource Person, MS/MPhil/PhD Supervision Course (Cohort 3, 08 sessions, 16 contact hours) on "Supervising Projects and Dissertations" as mandatory requirement under HEC GEP 2023, for the faculty members of the University of Central Punjab (UCP), Lahore, 28.07.2025-07.08.2025.
5. Expert, Policy Dialogue on Science, Technology & Engineering for Development (STED) 2025 organized by the Federal Minister for Planning, Development & Special Initiatives, 17-18 April 2025. Presented recommendations on nanotechnology.
6. Research Fellow, INTI International University, **Malaysia**, 04.10.2024
7. Member, Global Engagement Program, Abu Dhabi University (ADU), **Abu Dhabi**, 29.06.2024.
8. Master Trainer/Resource Person, MS/MPhil/PhD Supervision Course (Cohort 2, 08 sessions, 16 contact hours) on "Supervising Projects and Dissertations" as mandatory requirement under HEC GEP 2023, for the faculty members of the University of Central Punjab (UCP), Lahore, 01.08.2024-15.08.2024.
9. Consultant/Trainer, Faculty Development Program at University of Management and Technology, Lahore & Sialkot Campuses, Ref. CTL-002-24 dated 26.07.2024.
10. Focal Person: Industrial Project on “Novel Nanotechnology Approaches to Indigenous Waste Water Treatment for a Cleaner and Climate-Resilient Future” under MoU signed between UCP and Water Care Services Pakistan (WCSP), Lahore. 31.07.2024.
11. Member, Committee ISO/TC 229 Nanotechnologies of International Organization for Standardization (ISO), Switzerland, appointed by Pakistan Standards and Quality Control Authority (PSQCA). ISO is an independent, non-governmental international organization, which has mandate of developing international standards and enabled trade and cooperation between people and companies around the globe. 07.05.2024.
12. Member Academic Council, University of Sialkot, Sialkot. Ref. No. D/USKT/REG/151 dated 16.04.2024.
13. Master Trainer/Resource Person, MS/MPhil/PhD Supervision Course (Cohort 1, 16 08 sessions, contact hours) on "Supervising Projects and Dissertations" as mandatory requirement under HEC GEP 2023, for the faculty members of the University of Central Punjab (UCP), Lahore, 29.01.2024-29.02.2024.
14. Chairperson Disciplinary Committee of Faculty of Science and Technology, University of Central Punjab (UCP), Lahore, 28.11.2023.
15. Resource Person, capacity building of faculty members of the public and private sector Universities of Punjab on the use of Generative Artificial Intelligence Tools in Higher Education, Punjab Higher Education Commission-PHEC. 27.11.2023
16. Member PSF Screening Committee on Nanotechnology by Pakistan Science Foundation, Islamabad, 07.11.2023.
17. Member (Representative of Academia) of National Standards Committee (NSC) of Pakistan Standards and Quality Control Authority (PSQCA) which is the National Standards Body (NSB) of Pakistan working under the Ministry of Science and Technology (MoST), Government of Pakistan, 03.01.2023.
18. Member, Quality Assurance Committee, QEC, UCP, 03.01.2023
19. Chairman of Technical Committee on Nanotechnology of Pakistan Standards and Quality Control Authority (PSQCA) which is the National Standards Body (NSB) of Pakistan working under the Ministry of Science and Technology (MoST), Government of Pakistan, 28.12.2022.
20. Chairman of Technical Committee on Fine Chemicals of Pakistan Standards and Quality Control Authority (PSQCA) which is the National Standards Body (NSB) of Pakistan working under the Ministry of Science and Technology (MoST), Government of Pakistan, 28.12.2022.

21. Deputy Assessment Coordinator to fulfill New England Commission of Higher Education (NECHE) accreditation requirements for assessment of student learning at the program level, FCCU, 27 May 2022.
22. External Subject Expert/Head of the QEC Assessment Team (AT) for Self-Assessment of Bachelor of Science (Honors) Chemistry, Kinnaird College for Women, Lahore, 15 February 2022.
23. Subject Expert of Chemistry, Selection Board of Government College Women University, Sialkot, 19 January 2022
24. Member, Board of Faculty of Natural Sciences, FCCU, Lahore. 13.10.2021
25. Coordinator Postgraduate Diploma in Food and Drug Analysis, Department of Chemistry, FCCU, 16.09.2020
26. Lindau Alumni Peer Reviewer, Lindau Nobel Laureate Meetings, Next Gen Science sessions, The Online Science Days 2020 and 70th Lindau Nobel Laureate Meeting. 28 May 2020.
27. Member HEC Institutional Performance Evaluation (IPE) Review Committee to conduct peer-review of University, 27.02.2020.
28. Coordinator/member of organizing committee, Lab Staff Training Committee constituted by Faculty of Natural Sciences and Human Resources Department, since 19.08.2019.
29. Focal Person: Industrial Project on “Nano drug delivery systems in health care treatment” under MoU signed between FCCU and All Cure International, Lahore. 22.10.2019.
30. Member, Board of Studies of Department of Chemistry, Kinnaird College for Women, Lahore, 27.03.2019.
31. Coordinator, Nano-Materials research Group of Faculty of Natural Sciences, FCCU, Lahore, 04.10.2018.
32. Focal Person, Industrial Project under MoU “nanofiltration for waste water treatment of dyes”, Department of Chemistry, FCCU, Lahore, 10.12.2018.
33. Member, Academia Industry Linkage Committee, Chemistry Department, FCCU, 04.10.2018.
34. Expert on the Board of Studies of Chemistry, University of Engineering and Technology, Lahore, 19.01.2017-18.01.2020. No. Univ./Acad/M-75/NSH&IS/2017/40 dated 19.01.2017.
35. Probing Officer, Advance Para of Govt. Fatima Jinnah College for Women, Chuna Mandi, Lahore Vide HED letter No. S.O.(Audit)1-1/2016 dated 25.4.2016
36. Inquiry Officer, Draft Para of University of Engineering and Technology Lahore, Vide HED letter No. S.O.(Audit)4-46/2016(P-VII) dated 21.04.2016.
37. Member, Appointment Committee, Abdus Salam School of Mathematical Sciences, GC University Lahore, 05.08.2015, 01.09.2015, 21.12.2015.
38. Secretary, Statutory Bodies of Abdus Salam School of Mathematical Sciences, Approved by Board of Governors in its 26th Meeting held on 30.09.2015.
39. Member, Austerity Committee, constituted by the Syndicate, GC University Lahore, 04.06.2015.
40. Internal Compliance Officer (ICO), Focal Person for Internal Compliance Program (ICP) of Strategic Export Control Division, Ministry of Foreign Affairs. 11.05.2015.
41. Subject specialist on the selection/promotion committee (Lecturers Biochemistry), Queen Mary College, Lahore, 05.05.2015.
42. Member, Committee utilization of services of M. Phil/PhD degree holders by Higher Education Department, Directorate of Education Colleges, Lahore. No. 137/PA-DEC-LHR dated 07.04.2015.
43. Secretary, Committee constituted by the Higher Education Department, Government of the Punjab to review the syllabi of Sociology, Civics and Political Science at graduate and postgraduate levels of Universities of the Punjab. DS(QEU)Misc/2015 dated 26.03.2015.

44. Secretary, Selection Committee, Abdus Salam School of Mathematical Sciences, GC University Lahore, 18.03.2015, 02.09.2015, 21.12.2015.
45. Member/Secretary, Committee, formulation of contract policy of GC University Lahore, February 2015.
46. Focal Person, GCU Lahore-King Edward Medical University (KEMU) collaboration, 08.01.2015.
47. Convener, Purchase Committee, Abdus Salam School of Mathematical Sciences, GC University Lahore, 26.12.2014-17.03.2015.
48. Convener, Committee, formulation of policy and disbursement of loan for the employees of category B (BS-01 to 16), 22.08.2014.
49. Convener, Legal Committee, GC University Lahore, 07.08.2014.
50. Focal Person, public/private sector Universities of the Lahore, regarding fund raising for IDPs of North Waziristan, 1/47-SBP(IDPs)/2014 dated 18.07.2014.
51. Member, Students' Coordination Committee, IDPs Fund Raising Match, Sports Board Punjab, Government of the Punjab, 1/47-SBP(IDPs)/2014 dated 18.07.2014.
52. Member, Committee constituted by the Higher Education Department, Government of the Punjab to coordinate with public sector Universities of the Punjab regarding donation for IDPs of North Waziristan. SO(Univ)Misc-12/13 dated 07.07.2014.
53. Focal Person, GC University Lahore, Prime Minister Laptop Scheme. 02.06.2014.
54. Member, Benevolent Fund Statutes Framing Committee, GC University Lahore. January 2014.
55. Convener, Salary Package Revising Committee, GC University Lahore, January 2014.
56. Convener, Departmental Purchase Committee (Administrative Departments), GC University Lahore. 21.11.2013 to 2016.
57. Member, Dean's Committee, GC University Lahore, 13.11.2013 to 2016.
58. Member, Rationalization Committee, GC University Lahore. 13.11.2013 to 2016.
59. Secretary, Promotion Committee (BPS-1 to 17), GC University Lahore, 13.11.2013 to 2016.
60. Convener, Anomaly Committee, GC University Lahore, 13.11.2013 to 20.01.2016.
61. Secretary, Syndicate, GC University Lahore. 13.11.2013 to 30.06.2016.
62. Member/Secretary, Academic Council, GC University Lahore. 13.11.2013 to 2016.
63. Secretary, Advanced Studies and Research Board, GC University Lahore, 13.11.2013.
64. Secretary, Selection Board, GC University Lahore. 13.11.2013 to 2016.
65. Secretary, Selection Committee (BPS-1 to 16), GC University Lahore, 13.11.2013-19.10.2015.
66. Member, Finance and Planning Committee, GC University Lahore 13.11.2013 to 2016.
67. Member (Appointed by Academic Council), Board of Faculties of Arts & Social Sciences and Languages, Islamic & Oriental Learning, GC University Lahore, 07.08.2013 to 06.08.2016.
68. Quality Enhancement Cell (QEC) Focal Person of the Department of Chemistry, GC University Lahore, 05.08.2013 to 19.11.2013.
69. Coordinator, F.Sc. (Theory), Department of Chemistry, GC University Lahore, 05.08.2013 to 19.11.2013.
70. Enquiry Officer, to conduct formal inquiry staff worker, GC University Lahore, 01.07.2013.
71. Member, Board of Faculty, Faculty of Science and Technology, GC University Lahore, 05.03.2013.
72. Advisor, The Scientific Ravi, GC University Lahore, session 2013-2014.
73. Member, Staff Welfare Fund Committee, GC University Lahore, 09.10.2012 29.03.2016.
74. Member, Admission Committee, Department of Chemistry, 14.09.2012.
75. Coordinator, External Links, Department of Chemistry, 13.09.2012 to 2014
76. Member, Admission Committee of FA/FSc/I-Com 2012, 2013, GC University Lahore.

77. Advisor, Dunnicliff Chemical Society, Department of Chemistry, GC University Lahore, 16.04.2012 to 22.04.2013.
78. In-Charge, Library, Department of Chemistry, GC University Lahore, 2011 to 22.04.2013.
79. Member, Quality Assurance Committee, Department of Chemistry, GC University Lahore, 2011 to 2014.
80. In-charge, Non-Teaching/Laboratory Staff, Department of Chemistry, 23.09.2011 to 22.04.2013.
81. Founder/In-charge/Advisor, Ravian Forensic Society, GC University Lahore, 16.05.2011 to 15.05.2017.
82. Programme Coordinator, B.Sc. (Hons.) Applied Chemistry, GC University Lahore, Prepared proposal, feasibility, and curriculum for this new programme. Approved by BOS on 09.08.2011.
83. Member of Departmental Research Evaluation Committee, GC University Lahore, 22.11.2010 to 2014.
84. Coordinator, B.Sc. (Hons.) Chemistry, GC University Lahore, 03.11.2010 to 12.08.2011.
85. Departmental Representative/Incharge (Attendance), GC University, 2008-2009, 2010-2012.
86. Member of Academic Committee, Department of Chemistry, GC University, 2008 to 2009, 2011 to 2013.

Honours and Awards

1. Certificate of Recognition on "Global Top 2% Scientist" by Higher Education Commission of Pakistan. 15.06.2026.
2. Listed among the **"World's Top 02% Most Influential Scientists 2025"** by Stanford University using Scopus data and published by Elsevier on 19 September 2025. DOI:10.17632/btchxktzyw.8.
3. Listed among the **"World's Top 02% Most Influential Scientists 2024"** by Stanford University using Scopus data and published by Elsevier on 16 September 2024. DOI:10.17632/btchxktzyw.7.
(<https://elsevier.digitalcommonsdata.com/datasets/btchxktzyw/7>)
4. Listed among the **"World's Top 02% Most Influential Scientists 2023"** by Stanford University using Scopus data and published by Elsevier on 04 October 2023. doi: 10.17632/btchxktzyw.6.
(<https://elsevier.digitalcommonsdata.com/datasets/btchxktzyw/6>)
5. Awarded **"Best Performance Gold Medal"**, Presented by the Governor of the Punjab, Lahore, Adara Farogh-e-Taleem, 09 March 2020.
6. Received **SATHA Innovation Award 2018 with Gold Medal** by South Asia Triple Helix Association (SATHA), during 7th Invention to Innovation Summit 2018 at University of Management and Technology, Lahore, 07.03.2018.
7. **Productive Scientists of Pakistan 2017**, Ranked at 1st in Lahore, 2nd in Punjab and 11th in Pakistan (Category Chemistry Young Scientists) by Pakistan Council for Science and Technology, 11.01.2018.
8. Awarded **Research Productivity Award 2017, Category C** (Ranked at 18th in Pakistan with highest score from GC University Lahore) for the year 2017-2018 by Pakistan Council for Science and Technology, Ministry of Science and Technology. 11.01.2018.
9. **Productive Scientists of Pakistan 2016**, Ranked at 1st in Lahore, 4th in Punjab and 11th in Pakistan (Category Chemistry Young Scientists) by Pakistan Council for Science and Technology, 07.06.2017.
10. **2017Albert Nelson Marquis Lifetime Achievement**, by Marquis Who's Who USA, 23.05.2017.

11. Awarded **Sitara-e-Pakistan Gold Medal** by Tehreek-e-Istehkam-e-Pakistan Council Pakistan, 25 December 2016.
12. Awarded **Nishan-e-Haider (Maj Shabbir Shareef Shaheed) Gold Medal** by Tehreek-e-Istehkam-e-Pakistan Council Pakistan, 06 September 2016.
13. Awarded **Research Productivity Award 2015, Category A** (Ranked at 1st in Lahore, 2nd in Punjab and 11th in Pakistan in Chemistry, over all 26th in Pakistan) for the year 2015-2016 by Pakistan Council for Science and Technology, Ministry of Science and Technology.
14. **Best Patent Award** by University of Engineering and Technology, Lahore, during symposium on "Functional Nanomaterials for Catalysis and Energy Conversion" on 16.05.2016.
15. Awarded **Gold Medal** for Best Performance by Idara Farogh-e-Taleem, Mrs. Zakia Shah Nawaz, Minister for Higher Education, Punjab, 25 April 2016.
16. Selected for **IUPAC-2015 Award for Chemists** from Under-represented Countries (outstanding chemists from developing countries), Busan, Korea, August 9-14, 2015.
17. Awarded **Quaid-e-Azam Gold Medal** by Tehreek-e-Istehkam-e-Pakistan Council Pakistan, 14 August 2014.
18. Awarded **Research Productivity Award 2013, Category B** (secured highest score among the faculty of GC University) for the year 2013-2014 by Pakistan Council for Science and Technology, Ministry of Science and Technology.
19. Nominated as **Young Researcher** by The Academy of Sciences for the Developing World (TWAS), Italy and selected by the Council for Lindau Nobel Laureate Meetings, Germany for 63rd Lindau Nobel Laureate Meeting in Chemistry in 29 June-05 July, 2013.
20. Awarded **Research Productivity Award 2012**, Category G for the year 2012-2013 by Pakistan Council for Science and Technology, Ministry of Science and Technology.
21. Selected as delegation amongst the group of **Young Scientists** from developing countries by Bibliotheca Alexandrian (BA) and The Academy of Sciences for the Developing World (TWAS) to participate in the BioVisionAlexandria Conference 21-25 April 2012, Alexandria, Egypt.
22. Nominated by World Association of Young Scientists (WAYS) as a **Delegate of WAYS** and invited/sponsored by UNESCO to participate in "World Science Forum", 17-19 November 2011 in Budapest, Hungary and 24-27 November 2013 in Rio de Janeiro, Brazil.
23. Awarded **TWAS-UNESCO Associateship** (highly competitive award) by TWAS (the Academy of Sciences for the Developing World), Italy, 14 June 2010.
24. Nominated as a **Young Scientist** from Pakistan by the Pakistan Academy of Sciences and selected by the InterAcademy Panel (IAP), Italy among the 60 **outstanding Young Scientists** around the world and invited by World Economic Forum (WEF) for the WEF's Annual Meeting of the New Champions 2010, "Summer Davos" in Tianjin, China, 13-15 September 2010.
25. Selected as delegation amongst the group of **Young Scientists** from developing countries by Bibliotheca Alexandrian (BA) and The Academy of Sciences for the Developing World (TWAS) for TWAS/BioVisionAlexandria.NXT 2010 and BioVisionAlexandria Conference 10-15 April 2010, Alexandria, Egypt.
26. Selected **Young Scientist** from Pakistan by InterAcademy Panel (IAP), Italy and German Young Academy for the establishment of Global Young Academy (GYA) in Berlin, Germany in February 2010.
27. Awarded **TWAS-USM Postdoctoral Fellowship** by TWAS (the Academy of Sciences for the Developing World) and USM (Universiti Sains Malaysia), 2009-2010 in Malaysia.
28. Awarded **Young Chemist Award** by International Union of Pure and Applied Chemistry (IUPAC), USA, 41st IUPAC World Chemistry Congress: 5-11 August 2007, Torino, Italy.

29. Awarded **TWAS-CNPq Postdoctoral Fellowship** by TWAS (the Academy of Sciences for the Developing World) and CNPq (National Council for Scientific and Technological Development) in 2006-2007 in Brazil. A single Pakistani out of 10 candidates awarded throughout the developing countries.
30. Selected as “**Productive Scientists of Pakistan**”, name included in the same book published by Pakistan Council for Science and Technology, Government of Pakistan, 2005 and 2007.
31. Selected by UNESCO and WAYS as **Representative of Pakistan** to 1st WAYS (World Association of Young Scientists) General Assembly, 11-13 December 2004 at Marrakech, Morocco.
32. Awarded **Cambridge Commonwealth Trust Scholarship** by Malaysian Commonwealth Trust for the University of Cambridge, England, 2000.
33. Awarded **Gold Medal** for First Class First Position in the Entire Faculty of Science at the M.Sc examinations of University of Karachi, 26th February 2000.
34. Awarded **Gold Medal** for First Class First Position in the Department of Chemistry at the M.Sc examinations of University of Karachi, 26th February 2000.
35. Awarded **Gold Medal** for First Class First Position in Physical Chemistry at the M.Sc examinations of University of Karachi, 26th February 2000.
36. Awarded **Nishan-e-Sipas** (Sign of gratitude) by Jang Group of Newspaper, Karachi, 21st April 2000.
37. Awarded Honorary **Shield on Academic Merit Record** by Govt. Superior Science and Commerce College, Karachi, 1st April 2000.
38. Awarded **Merit Certificate** for First Class First Position in the Department of Chemistry at the B.Sc(Hons) examinations of University of Karachi, 16th April 1999.
39. Awarded Dr. Amir Hasan Siddique **Faculty of Science Merit Scholarship**, by University of Karachi, 1999.

Training Received/ Courses Attended

a. Administrative/Management/Professional

1. Course on “Emotional Intelligence” by LinkedIn Learning, 1 hour, 11.08.2023.
2. Writing Professional Goals and Statement, organized by CLT-FCCU, 05.12.2018
3. Young Scientist Leadership Workshop Thematic focus: Avoiding the weaponisation of new technologies, Organized by Global Young Academy, on 06.11.2017 at King Hussein Bin Talal Convention Centre, **Jordan**.
4. Training course on “Performance Management in Public Sector Organizations” from 23-26 November 2015 at Pakistan Planning and Management Institute, Planning Commission, Islamabad.
5. One day session on Internal Compliance Program (ICP) of Strategic Export Control Division, Ministry of Foreign Affairs by Higher Education Commission. at Forman Christian College (University) Lahore, 18.05.2015.
6. Two days Training on the Punjab Transparency and Right to Information (RTI) Act 2013, 29-30 December 2014 at Punjab Institute of Management and Professional Development, Management and Professional Development Department, Lahore.
7. Workshop on Punjab Procurement Rules 2014, by Managing Director, Punjab Procurement Regulatory Authority (PPRA), 01 September 2014.
8. Three days training workshop on Punjab Employees Efficiency, Discipline and Accountability (PEEDA) Act, 2006 for Officers, 11-13 August 2014 at Punjab Institute of Management and Professional Development, Management and Professional Development Department, Lahore.
9. Executive Course on Sustainability, 23-26 November 2009, Centre for Global Sustainability Studies, Universiti Sains Malaysia, Penang, **Malaysia**.

10. Training Workshop on Academic Assessment in Higher Education, 09-11 April 2009, Quality Enhancement Cell, GC University Lahore.
11. Staff Training Programme on Role and Working of Different Admin Wings of the University, 14-16 January 2009. Quality Enhancement Cell, GC University Lahore.
12. Training on “Design and Evaluation of Innovation Policies in Developing Countries”, 10-14 November 2008 organized by The United Nations University (UNU) and Maastricht Economic Research Institute on Innovation and Technology (MERIT) at UNU-MERIT, Maastricht University, Maastricht, **The Netherlands**.
13. Three months certificate course on “Official Language for the Officers of Federal Government”, March-May 2008, by Allama Iqbal Open University, Islamabad.
14. National In-Service training course on “WTO regime and its implications on Pakistan’s economy” 26-27 November 2007 by Pakistan Manpower Institute, Islamabad.

b. Teaching and Research

1. Course on “How to Research and Write Using Generative AI Tools” by LinkedIn Learning and ACS, 16.03.2024.
2. Course on “Ethics in the Age of Generative AI” by LinkedIn Learning, and Project Management Institute (PMI), 09.02.2024.
3. Course on “Introduction to Artificial Intelligence (AI)” by IBM and Coursera, 08.09.2023.
4. Course on “AI for everyone” by DeepLearning.AI and Coursera, 09.08.2023.
5. Blended course on “Supervising Projects and Dissertations” by CLT, FCCU Lahore. 10.08.2020.
6. Smart Class Orientation Session on February 19, 2020 by CLT, FCCU Lahore.
7. Course Design Guidelines for Remote Instruction on Jul 16, 2020 by CLT, FCCU Lahore.
8. Motivate, Engage and Communicate with All students, on July 22, 2020 by CLT, FCCU Lahore.
9. Attended 13 Webinar Series on online teaching methodology 2020 by CLT, FCCU Lahore, April 28-May 21, 2020.
10. One-week hands-on training workshop on, "Synthesis and Applications of Polyurethane (PU) Hydrogel, Department Chemistry, FCCU, 17-21 June 2019.
11. Session on 'Student Centered Learning' Monday 04.02.2019 at FCCU. Resource Person: Dr. Sean Moran
12. Faculty Workshop: Teaching in Science-PULSE framework, February 7, 2019 at FCCU.
13. Design Thinking in Pedagogy - Date: 29th April, 2019 at FCCU.
14. Blended course on “Understanding the Principles of Course Designing” on 07.01.2019 at CLT, FCCU.
15. Workshop Qualitative Teacher Inquiry, organized by CLT-FCCU, 08.11.2018.
16. Session on Gamification organized by CLT-FCCU, 28-11.2018.
17. Safety Training Workshop, IUPAC-Committee on Chemistry and Industry (COCI), 10 August 2015, Busan, **Korea**.
18. Training on Microfluidizer Processor (Microfluidics M-110P), Zetasizer Nano Series (Malvern Nano-ZS), PPTI, Universiti Sains, May 2010, **Malaysia**.
19. Training/working experience on ESI-MS following the experiments on the projects of hydrolysis of esters of sulphates and phosphates at Institute of Chemistry, Federal University of Rio Grande do Sul, Porto Alegre, 07-11 August 2006, **Brazil**.
20. Nizampur Cement Factory, 12.05.2004 – 15.05.2004 regarding problems with raw materials, high temperature bricks and kiln.

21. Computer Short Courses. (Global institute of Computer Education-1998), and The Bank of IT at PCSIR Labs Complex, Peshawar Jan-Feb 2005.
22. Postgraduate Training Course on Nuclear and other Advanced Techniques in Agricultural and Biological Research, held at NIAB, PAEC, 14-25 October 2002.
23. Apprenticeship Training, Darbar Soap Works (Pvt) Limited, 17 June - 16 July, 1999.
24. Certificate Course in Mathematics, University of Karachi, 1998.

Research Projects/Grants Won

a. Major Projects

1. Co-PI: PI: Dr. Huma Hameed, Development and Commercial Translation of High Demand Nutraceutical Products for Preventive Healthcare in Pakistan, ORIC University of Central Punjab, Rs. 1,142,000/- Ref. No. UCP/ORIC/IRGP/2026/01 Dated 30.03.2026. 2026-2027.
2. PI: R&D Cluster on Minerals and Rare Earth Metals, Punjab Higher Education Commission (PHEC), Rs. 10 m, Ref. No. PHEC/P&D/2025/375 dated 20.01.2026. Lead: PU, Members: UET, UCP.
3. PI: R&D Cluster on Climate Change, Punjab Higher Education Commission (PHEC), Rs. 10 m, Ref. No. PHEC/P&D/2025/371 dated 20.01.2026. Lead: BZU, Members: UoA, GCUG, ITU, UCP, IUB.
4. PI: “Commercial Manufacturing of Liquid Nano-Clay for Arid Land’s Irrigation and Water-Conserving Capacity” under Competitive Research Programme, Pakistan Science Foundation (PSF), Rs. 2.2 m Project No. PSF/CRP/7/Nano/Indv-724. 2025-2026.
5. PI: Industrial Project on “Novel Nanotechnology Approaches to Indigenous Waste Water Treatment for a Cleaner and Climate-Resilient Future” under MoU signed between UCP and Water Care Services Pakistan (WCSP), Lahore. Rs. 1,073,000/- 31.07.2024-30.07.2026
6. PI: Nano-Materials Fabrication (NMF) Lab under the National Center for Nanoscience and Nanotechnology (NCNN). Higher Education Commission (HEC) and Planning Commission of Pakistan. Inaugurated on 01.08.2023 at Planning Commission of Pakistan, Islamabad. Rs. 3325.598 million (total budget for 11 Labs and 85.404 m for NMF Lab). 2023-2026.
7. PI: Application of spectral process manufacturing analysis technology in intelligent manufacturing, under Pakistan Science Foundation (PSF) and National Natural Science Foundation of China (NSFC) Joint Scientific Exchange Program (JSEP). Rs. 3.5 m (PSF), 3.9 m (NSFC), 10.06.2023-09.06.2025. PSF-NSFC/JSEP/ENG/P-FCC/18.
8. Co-PI: Natural essential oil loaded nanoparticles (nanoemulsion) incorporated in poultry feed as alternative to antibiotics, under Competitive Research Programme, Pakistan Science Foundation (PSF). Rs. 6,639,300/-, 01.12.2022-01.12.2025. PSF/CRP/TH/4/CFP/431.
9. PI: Air pollution monitoring of PM_{2.5} in Lahore to investigate the cause of smog and its effects on health, USD 19,618 (Rs. 4.21 m), University at Albany, USA. MoU FOST/2022/03 dated 26.09.2022-25.09.2023 and 02.12.2024-03.02.2025

10. PI: Synthesis of Iron doped CeO₂/SiO₂ and SnO₂/SiO₂ nanocomposites for catalytic degradation of organophosphorus pesticides in water, Higher Education Commission, Pakistan. Rs. 3,383,034/. 2015-2018 (18.09.2015). Project No. 20-3142/NRPU/R&D/HEC/.
11. PI: Bacteriostatic applications of iron oxide doped tin oxide loaded with metals (Zn, Cu and Ag) nanoparticles synthesized via hydrothermal method. Rs.1,598,194/. Pakistan Science Foundation. 2014-2016. (28.03.2014). Project No. PSF/Res/P-GCUL/Chem (497)
12. PI: Lanthanum doped tin oxide-titanium oxide nano-photocatalyst and its application in development of nanofiltration system for industrial waste water treatment, Higher Education Commission, Pakistan Rs. 5,290,220/. 2014-16 (23.05.2014). Project No. 20-2660/NRPU/R&D/HEC/. (18.08.2014-02.12.2016)
13. PI: Hydrothermal Synthesis & Forensic application of CdS/NiO-ZnO nanoparticles, ORIC, GC University Lahore. Rs. 1,300,000/. 2015-16 (12.02.2015).
14. PI: Synthesis, characterization and application of lanthanide nano particles doped on ZnO, TiO₂, SiO₂. The World Academy of Sciences (TWAS), Italy. TWAS Research Grant. USD: 12000.00+10% (Rs. 1,320,000/). 2012-2014 (10.10.2012). Grant Ref. No. 11-028 RG/MSN/AS_C; UNESCO FR: 3240262649.
15. Co-PI: Removal of organophosphorus pesticides using Fe Nanoparticles (Fe NPs) immobilized in cyclodextrin-silica matrix, Universiti Sains Malaysia, Research grant RM. (Malaysian Ringgit) 159478.32 = Rs. 5,074,628/). 2012-2014. (14.12.2012).

b. Industrial Projects

16. PI: Industrial Project on “Novel Nanotechnology Approaches to Indigenous Waste Water Treatment for a Cleaner and Climate-Resilient Future” under MoU signed between UCP and Water Care Services Pakistan (WCSP), Lahore. Rs. 1,073,000/- 31.07.2024.
17. PI: Industrial Project on “Applied research on nano-clay commercially manufacturing for arid land’s irrigation and water conserving capacity building” funded by Enrichers Investment Group” under the MoU signed between UCP and Enrichers Investment Group, Lahore, 03.01.2023
18. PI: Industrial Project on “Nano drug delivery systems in health care treatment” under MoU signed between FCCU and All Cure International, Lahore. 22.10.2019.
19. PI: Industrial Project on “Nanofiltration for waste water treatment of dyes” under MoU signed between FCCU and Hydromech Corporation, Lahore. 11.12.2018.

c. Small Projects

20. Co-PI: Toxicity of ZnO and NiO nanoparticles in albino mice, ORIC, GC University Lahore. Rs. 350,000/. 2015-16 (22.06.2015).
21. PI: PhD Scholar Project: Synthesis of Quaternary Metal Oxide Nanoparticles for Photocatalytic Application. Rs. 200,000/- by ORIC, GC University Lahore. (30.11.2017).
22. PI: PhD Scholar Project: Synthesis of nanoporous metallic aluminosilicates and their application in fertilizer. Rs. 200,000/- by ORIC, GC University Lahore. 2016-2019 (18.04.2016).

23. PI: PhD Scholar Project: Synthesis of $\text{Ln-Sr}_x\text{Mo}_y\text{O}_z$ nanoparticles and their application in photocatalysis, Rs. 400,000/- by ORIC, GC University Lahore. 2015-2018 (22.06.2015).
24. PI: PhD Scholar Project: Synthesis of sulfur containing hetero metal oxide nanocomposites for the photo-degradation of agrochemical pollutants, Rs. 400,000/- by ORIC, GC University Lahore. 2015-2018 (22.06.2015).
25. PI: PhD Scholar Project: Synthesis and characterization of metal oxides nanoparticles/mesoporous materials and their applications in catalysis. Rs. 75,000/- by ORIC, GC University Lahore. 2012-2015 (06.09.2012).
26. PI: Project: Synthesis of SnO_2 nanoparticles and host guest interaction studies (RM 74081.64 (Malaysian Ringgit) = Rs.1,777,595/) By: Universiti Sains Malaysia, Malaysia. 2009-2010 (10.07.2009).
27. PI: Project: Production of analytical grade NaCl from rock salt and magnesium sulphate from magnesite ore. Rs.75,000/ By: GC University Lahore. 2008-2009.

Member Editorial Boards/Editor

1. Lead Guest Editor, Journal of Chemistry Special Issue on “Applications of Functionalized Metal Oxides Nanocomposites”
<http://www.hindawi.com/journals/jchem/contents/>
2. Member, Editorial Board, International Journal of Nanomaterials and Nanostructures,
<http://www.journalspub.com/>
3. Member, Editorial Board, Science Journal of Chemistry, Science Publishing Group, USA. <http://www.sciencepublishinggroup.com>
4. Member, Editorial Board, Journal of Nanoscience and Nanoengineering,
<http://www.publicscienceframework.org/journal/editorialboard/jnn.html>.
5. Member, International Editorial Board, Asian Journal of Pure and Applied Chemistry.
<http://www.informaticsjournals.org/index.php/ajpac/pages/view/eb>.
6. Member, International Editorial Board, Journal of Advanced Research in NanoScience and NanoTechnology, <http://science.adrpublications.com/index.php/JoARNSNT/about/editorialTeam>
7. Member, Editorial Board, International Journal of Materials Chemistry and Physics,
<http://www.publicscienceframework.org/journal/editorialboard/ijmcp.html>
8. Member, Asian Council of Science Editors (ACSE), Dubai,
http://theacse.com/newmembers.php?pageNum_Recordset1=8&totalRows_Recordset1=537
9. Managing Editor, Frontiers in Bioscience special issue on “Development of Nano-Drugs” https://www.bioscience.org/special-issue-details?editor_id=1316.
10. Editor, Nanoscience and Nanotechnology special issue on Photocatalytic applications of Metal Oxide nanoparticle, Scientific & Academic Publishing.
<http://www.sapub.org/Journal/specialissue.aspx?journalid=1014>
11. Editor, African Journal of Advanced Biotechnology (AJAB).
<http://www.worldscholarsjournals.org/biotechnology/index.php>
12. Advisory Editorial Board Member in International Journal of Pharmacy and Pharmaceutical Sciences.
<http://innovareacademics.in/journals/index.php/ijpps/pages/view/editorial-board>
13. Editorial Board member (Science), The Experiment journal.
<http://experimentjournal.com/editor.php>
14. Associate Editor, World Applied Sciences Journal
<http://www.idosi.org/appliedsci/appliedsci.htm>
15. Associate Editor, American-Eurasian Journal of Scientific Research
<http://www.idosi.org/aasr/sr.htm>
16. Regional Editors, Advances in Natural and Applied Sciences, American-Eurasian Network for Scientific Information (AENSI), <http://www.aensi.org/anas.html>

17. Editorial Board Member, Journal of Chemistry and Chemical Engineering, USA.
<http://www.davidpublishing.com>

Reviewer/Referee of Journals

Verified record available at:

<https://www.webofscience.com/wos/author/record/1257328>

<https://www.webofscience.com/wos/author/rid/P-1164-2015>

1. Materials Today Communications, Elsevier
2. Ionics-International Journal of Ionics – The Science and Technology of Ionic Motion, Springer
3. Advanced Materials Interfaces, WILEY
4. ACS Applied Materials & Interfaces, ACS
5. Applied Water Science, Springer
6. Diamond & Related Materials, Elsevier
7. Chemical Physics Letters, Elsevier
8. Heliyon, Elsevier
9. Ceramics International, Elsevier
10. Zeitschrift für Physikalische Chemie, De Gruyter academic publishing
11. Inorganic Chemistry Communications, Elsevier
12. Journal of Molecular Structure, Elsevier
13. Materials Research Bulletin, Elsevier
14. Optical and Quantum Electronics, Springer
15. Journal of Inorganic and Organometallic Polymers and Materials, Elsevier
16. Arabian Journal of Chemistry, Elsevier
17. Electromagnetic Biology and Medicine, Taylor & Francis
18. Inorganic Chemistry, ACS Publications
19. Advances in Materials Science and Engineering, Hindawi
20. Journal of Taibah University for Science, Taylor & Francis
21. Journal of Luminescence, Elsevier
22. Journal of Analytical Methods in Chemistry, Hindawi
23. PLOS Water, Public Library of Science (PLOS), US
24. Journal of Current Science and Technology
25. ECS Journal of Solid State Science and Technology, IOP
26. Materials Science & Engineering B, Elsevier
27. Advances in Natural Sciences: Nanoscience and Nanotechnology, IOP (UK)
28. PLoS One, Public Library of Science (PLOS), US
29. Inorganic and Nano-Metal Chemistry, Taylor & Francis
30. Journal of Rare Earths, Elsevier
31. Applied Nanoscience, Springer
32. Journal of Nanotechnology, Hindawi
33. Environmental Nanotechnology, Monitoring & Management, Elsevier
34. The Saudi Dental Journal, Elsevier
35. Chemical Papers, Springer
36. Periodica Polytechnica Chemical Engineering, Budapest University of Technology and Economics
37. Jordan Journal of Biological Sciences, Hashemite University, Jordan
38. Proceedings of the Pakistan Academy of Sciences
39. Romanian Biotechnological Letters
40. Journal of Physics and Chemistry of Solids, Elsevier
41. Biocatalysis and Agricultural Biotechnology, Elsevier
42. Microscopy Research and Technique, WILEY

43. Journal of Innovative Sciences, SPST
44. Applied Organometallic Chemistry, John Wiley & Sons
45. Punjab University Journal of Zoology, ResearchersLinks, Ltd
46. Materials Chemistry and Physics, Elsevier
47. Acta Physica Polonica A, Polish Academy of Sciences
48. Research on Chemical Intermediates, Springer
49. South Asian Journal of Research in Microbiology, Sciencedomain international.
50. Journal of Materials Science: Materials in Electronics, Springer
51. Chemical Science International Journal, Sciencedomain international
52. Analyst, Royal Society of Chemistry
53. RSC Advances, Royal Society of Chemistry
54. Materials Characterization, Elsevier
55. Advances in Natural Sciences: Nanoscience and Nanotechnology, VAST (VN) and IOP (UK)
56. Journal of Applied Chemistry, Hindawi
57. Superlattices and Microstructures, Elsevier
58. Optical Materials, Elsevier
59. Optik - International Journal for Light and Electron Optics, Elsevier
60. Journal of Elastomers and Plastics, SAGE Publishing
61. Environmental Engineering and Management Journal, Romania
62. Journal of Inorganic Materials, The Science Press
63. NANO, World Scientific Publishing
64. Scientia Iranica, Iran
65. Materials Science in Semiconductor Processing, Elsevier
66. Particulate Science and Technology, Taylor & Francis
67. Journal of Physical Organic Chemistry, Wiley
68. Thin Solid Films, Elsevier
69. Applied Surface Science, Elsevier
70. Journal of Molecular Liquids, Elsevier
71. Jordan Journal of Physics, Yarmouk University, Jordan
72. International Journal of Biomedical Nanoscience and Nanotechnology (IJBNN)
73. Korean Journal of Chemical Engineering
74. Journal of Nanoparticle Research, Elsevier
75. International Journal of Economic and Environment Geology
76. Journal of Research in Environmental Science and Toxicology
77. African Journal of Biotechnology
78. Journal of Medicine and Clinical Trials, Science Journal Publication.
79. Indian Journal of Science and Technology
80. QScience Connect
81. Acta Physica Polonica A, Poland.
82. Journal of Chemistry, Hindawi Publishing Corporation
83. Journal of Alloys and Compounds, Elsevier.
84. Journal of Environmental Chemistry and Ecotoxicology, Academic Journals.
85. Iranian Journal of Catalysis, Iran
86. Polish Journal of Chemical Technology, Poland.
87. Pakistan Journal of Pharmaceutical Science, Pakistan.
88. Journal of Medicinal Plants Research, Academic Journals.
89. Colloids and Surfaces B: Biointerfaces, Elsevier.
90. Analytical Letters, Taylor and Francis.
91. African Journal of Pure and Applied Chemistry, Academic Journals.
92. Journal of Brazilian Chemical Society, Brazil.
93. Journal of Saudi Chemical Society, Saudi Arabia.
94. Journal of Chemical Society of Pakistan, Pakistan.

95. Journal of Chemical Education, USA.
96. Fresenius Environmental Bulletin, Parlar Scientific Publications (PSP).
97. International Journal of Physical Sciences, Academic Journals.
98. Pakistan Journal of Scientific and Industrial Research, Pakistan
99. Pakistan Journal of Analytical & Environmental Chemistry
100. International Journal of Chemical Kinetics, WILEY.
101. Bulletin of Materials Science, IAS.
102. Pakistan Journal of Agriculture, Agriculture Engineering and Veterinary Sciences

Courses Taught/Being Taught at University Levels

a. Department of Basic and Applied Chemistry, University of Central Punjab

BS: Physical Chemistry, Physical Chemistry-II

M.Phil: Nano Chemistry, Radiation Chemistry

b. Department of Chemistry, Forman Christian College, Lahore

BSc (Hons.): Introductory Physical Chemistry, Thermodynamics and Equilibrium, Surface and Solid State Chemistry, Introductory Nuclear Chemistry. Quantum Chemistry, Introduction to Chemistry, Kinetics and Mechanism

M.Phil: Advanced Topics in Physical Chemistry

c. Department of Chemistry, GC University Lahore:

1. B.S (II Year): Spectroscopy, Environmental Chemistry, Dyes
2. B.S (III Year): Electrochemistry, Conductometry, Quantum Mechanics, Nuclear Chemistry, Polymer Chemistry, Group Theory, Thermodynamics, Chemical Equilibrium, Solution Chemistry, Chemical Kinetics.
3. B.S (IV Year): Quantum Mechanics and Molecular Spectroscopy, Photochemistry, Chemical Kinetics, Surface Chemistry, Organic Spectroscopy, Potentiometry, Radiation and Photochemistry
4. M.Phil: Radiation Chemistry, Advanced Chemical Kinetics
5. MS: Nano-Forensics
6. Ph.D: Nanochemistry

d. Department of Chemistry, University of Karachi:

1. B.Sc (Hons) (I Year) General Chemistry (Theory)
2. B.Sc (Hons) (II Year) Physical Chemistry (Lab)
3. B.Sc (Hons) (III Year) Electrochemistry, Nuclear Chemistry, Chemical Kinetics & Thermodynamic (Theory & Lab)
4. M.Sc (Final Year) Radiochemistry, Analytical Chemistry (Theory)

New Programme Developed/Introduced at GC University Lahore

1. New Programme: Certificate in Forensic Science (Evening Programme). Prepared proposal and curriculum which was approved by BOS meeting on 10.07.2012. First Session started in 2012.
2. New Programme: Diploma in Forensic Science (Evening Programme). Prepared proposal and curriculum which was approved by BOS meeting on 05.04.2013, BoF on 30.04.2013 and Academic Council on 07.08.2013. First Session started in 2013.
3. New Programme: B.Sc. (Hons.) Applied Chemistry (Evening programme): Prepared proposal and curriculum which was approved by BOS meetings on 14.04.2011 and 09.08.2011.

New Courses Developed/Amended at GC University Lahore

a. B.Sc. (Hons)

1. BSc (Hons.) Courses amended and introduced 2011, 2012, 2013
 - All Courses of Physical Chemistry were amended in 2011 and 2012
 - BSc (Hons.) Courses of Chemistry (whole syllabus) were prepared according to HEC revised syllabus for Chemistry, approved by BoS on 29.07.2013 and BoF on 30.07.2013.
- b. M.Phil (Chemistry)**
 1. New courses developed for M.Phil (Chemistry): 2011
 - CHEM-7108 Radiation Chemistry
 - CHEM-7209 Nanochemistry
 - CHEM-7212 Advanced Chemical Kinetics
 - CHEM-7201 Advanced Physical Chemistry
- c. MS Forensic Chemistry**
 1. New courses developed for MS Forensic Chemistry: 2012
FCHEM-7209 Nano Forensics
 2. Courses amended for MS Forensic Chemistry: 2012-2013
 - FCHEM-7105 Introduction to Forensic Science
 - FCHEM-7108 Analytical Techniques in Forensic Chemistry
 - FCHEM-7207 Statistics and Quality Control in Forensics
- d. PhD (Chemistry)**
 1. New courses developed for PhD (Chemistry): 2011
 - CHEM 8107 Advanced Chemical Kinetics
 - CHEM 8204 Radiochemistry
 - CHEM 8205 Nanomaterials
- e. Certificate/Diploma**
 1. New courses for Certificate/Diploma in Forensic Science developed 2012-2013
 - CFS-1101, CFS-1102, CFS-1103, CFS-1104, DFS-1101, DFS-1102, DFS-1103, DFS-1104, DFS-1201, DFS-1202, DFS-1203, DFS-1204, DFS-1205, DFS-1206.

New Courses Developed/Revised at FCCU

- a. B.Sc. (Hons)**
 - CHEM 170 Introductory Physical Chemistry (Revised 2022)
- b. PhD (Chemistry)**
 - CHEM 704 Kinetics of Electron Transfer Reactions (New 2022)

New Courses Developed/Revised at UCP

- a. M.Phil./PhD (Chemistry)**
 - CH751 Kinetics of Electron Transfer Reactions (New 2023) (PhD)
 - CH653 Nano Chemistry (Revised 2024) (M.Phil.)

Supervision of Research Students/Theses

(Higher Education Commission (HEC) Approved Ph.D. Supervisor:

No. 1-4/HEC/R&D/2003/PhD Sup/Chem-6/4/626 dated 13.10.2004)

(Reselected HEC/HRD/ASA/2017/17770 dated 16.03.2018, 26.05.2021)

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|--|----|
| • PhD. scholars supervised/degree awarded: | 07 |
| • PhD. scholars Co-supervised/degree awarded: | 03 |
| • PhD. scholars research under progress: | 04 |
| • M. Phil students supervised/degrees awarded: | 45 |
| • MS Pharmaceutical Chemistry students supervised: | 08 |
| • MS Forensic Chemistry students supervised: | 17 |
| • MS Biochemistry students supervised: | 03 |
| • B.Sc (Hons) students supervised: | 46 |

- M.Sc Industrial/Chemistry students supervised: 02
- M.Sc (Chemistry) students supervised: 02

Appointment of External Examiner

1. Appointed as an External Examiner of PhD Chemistry Scholar Mr. Muhammad Asgha, Department of Chemistry, University of Management and Technology, Lahore, Letter No. Exam/26/9127 dated 28.08.2026.
2. Appointed External Examiner for PhD (Chemistry) Scholar Mr. Nabeel Shahzad, Department of Chemistry, GC University, Faisalabad, Letter No. GCUF/CE/Theses/25/54 dated 13.01.2025. Viva Voce Examination: 07.05.2026.
3. Appointed as an External Examiner of PhD Chemistry Scholar Hira Fatima. Department of Chemistry, University of Management and Technology, Lahore, 06.03.2026.
4. Appointed as an External Examiner of PhD Chemistry Scholar Ms. Samina Farid. Department of Chemistry, University of Management and Technology, Lahore, Letter No. Exam/26/8322 dated 16.01.2026.
5. Appointed External Examiner for PhD (Chemistry) Scholar Ms. Fakiha Tul Jannat, Department of Chemistry, GC University, Faisalabad, Letter No. GCUF/CE/Theses/26/2 dated 01.01.2026. Viva Voce Examination: 08.01.2026.
6. Appointed as an External Examiner for thesis evaluation of Liew Son Qian Doctor of Philosophy (Engineering) of Department of Electrical and Electronics Engineering, Lee Kong Chian Faculty of Engineering and Science, Universiti Tunku Abdul Rahman, **Malaysia**. 17.03.2025.
7. Appointed External Examiner for PhD (Chemistry) Scholar Mr. Adil Mustafa, Department of Chemistry, GC University, Faisalabad, Letter No. No. GCUF/CE/Theses/24/1406 dated 28.11.2024. Viva Voce Examination: 20.10.2025.
8. Appointed as an External Examiner of PhD Chemistry Scholar Sundus Jameel. Department of Chemistry, University of Management and Technology, Lahore, 23.08.2024.
9. Appointed as an External Examiner for thesis evaluation of Aaron Hong Kai Jeat Doctor of Philosophy (Engineering) of Department of Electrical and Electronics Engineering, Lee Kong Chian Faculty of Engineering and Science, Universiti Tunku Abdul Rahman, **Malaysia**. 15.04.2024.
10. External Examiner for PhD (Chemistry) Scholar Ms. Misbah Umar, Department of Chemistry, University of Engineering and Technology, Lahore, Letter No. Exam/2023/5533 dated 25.11.2023. Viva-Voce Examination on 23.02.2024.
11. Appointed as an External Examiner of PhD Chemistry Scholar Ms. Tehmina Akhtar. Department of Chemistry, School of Natural Sciences, National University of Sciences and Technology, Islamabad, Viva-Voce Examination on 03.11.2023.
12. Appointed as an External Examiner of PhD Chemistry Scholar Qasar Saleem Qamar. Department of Chemistry, University of Management and Technology, Lahore, Viva-Voce Examination on 22.09.2023.
13. External Examiner for M.Phil (Food Science and Technology) Scholar Mr. Hammad Rafiqat, Department of Chemistry, University of Engineering and Technology, Lahore on 22.12.2022
14. External Examiner for PhD (Chemistry) Scholar Mr. Muhamamd Rizwan, Department of Chemistry, University of Engineering and Technology, Lahore, Letter No. Exam/2022/4089 dated 27.09.2022.
15. External Examiner for MS (Food Science and Technology) Scholar, Department of Chemistry, University of Engineering and Technology, Lahore on 22.09.2022
16. External Examiner for PhD (Chemistry) Scholar Ms. Amna Yaqub, Department of Chemistry, University of Engineering and Technology, Lahore, Letter No. Exam/2022/2756 dated 17.08.2022.

17. Appointed as an External Examiner of **three** M. Phil Chemistry Students. Department of Chemistry, University of Engineering and Technology, Lahore, 2022.
18. Appointed as an External Examiner to evaluate the theses of **three** MS Chemistry Students. Department of Chemistry, GC Women University Sialkot, Sialkot, 19.01.2022.
19. Appointed as an External Examiner of four BS Chemistry Students. Department of Chemistry, Government Graduate College for Women, Gulberg, Lahore, Lahore college for Women University, Lahore, Lahore, Ref No. Exam/LCWU-2405-B dated 16.08.2021.
20. Appointed as an External Examiner of MS Chemistry Student. Department of Chemistry, University of Management and Technology, Lahore, Viva-Voce Examination on 30.07.2021.
21. Appointed as an External Examiner to evaluate the theses of Four MS Chemistry Students. Department of Chemistry, GC Women University Sialkot, Sialkot, 17.05.2021.
22. Appointed as an External Examiner of PhD Chemistry Student Muhammad Azam Qamar. Department of Chemistry, University of Management and Technology, Lahore, Viva-Voce Examination on 05.04.2021.
23. Appointed as an External Examiner of MS Chemistry Student. Department of Chemistry, University of Management and Technology, Lahore, Viva-Voce Examination on 12.03.2021.
24. Appointed as an External Examiner of two M. Phil Chemistry Students. Department of Chemistry, University of Engineering and Technology, Lahore, Viva-Voce Examination on 17.02.2021.
25. Appointed as an External Examiner of M. Phil Chemistry Student. Department of Chemistry, University of Engineering and Technology, Lahore, Viva-Voce Examination on 28.01.2021.
26. Appointed as an External Examiner of PhD Chemistry Student Ms. Shehnaila Altaf. No. Exam/2020/1796 dated 03/11/2020, Controller of Examination, University of Engineering and Technology, Lahore
27. Appointed as an External Examiner of M. Phil Chemistry Student. No. Univ/Chem/ dated 06/10/2020 Department of Chemistry, University of Engineering and Technology, Lahore, Viva-Voce Examination on 08.10.2020.
28. Appointed as an External Examiner of PhD Chemistry Student Ms. Phool Shahzadi. No. Exam/2020/1658 dated 02/10/2020, Controller of Examination, University of Engineering and Technology, Lahore.
29. External Examiner of M. Phil Chemistry Students. Univ/Chem/211 dated 21/07/2020 Department of Chemistry, University of Engineering and Technology, Lahore, Viva-Voce Examination on 23.07.2020.
30. Appointed as a member of the Board of Examiners for adjudicating the Ph.D. thesis in M. Kanakaraj, Bharathiar University, **India**, 02 March 2020.
31. External Examiner of two M. Phil Chemistry Students. No.Univ/Chem/19 dated 15/01/2020 Department of Chemistry, University of Engineering and Technology, Lahore, Viva-Voce Examination on 16.01.2020.
32. External Examiner for the examination the Dissertation of Master of Engineering Science at Universiti Tunku Abdul Rahman, **Malaysia**, 04 April 2019.
33. External examiner of PhD (Chemistry) Scholar Ms. Aqsa Gulzar, Institute of Chemistry, University of the Punjab, Lahore, 07.12.2018, Letter No. 112-A/PhD/18 dated 06.12.2018.
34. External Examiner for M.Phil. Applied Chemistry student, Department of Chemistry, University of Engineering and Technology, Lahore, 15.11.2018.
35. External Examiner for PhD (Chemistry) Scholar Mr. Muhammad Liaqat, Institute of Chemistry, University of the Punjab, Lahore, 16.10.2018, Letter No. 2180/PhD/18 dated 04.10.2018.

36. External Examiner for PhD (Chemistry) Scholar Ms. Amina Mumtaz, Institute of Chemistry, University of the Punjab, Lahore, 01.10.2018, Letter No. 2033/PhD/18 dated 26.09.2018.
37. External Examiner for PhD (Chemistry) Scholar Ms. Asmat Zahra, Institute of Chemistry, University of the Punjab, Lahore, 31.08.2018, Letter No. 1557/PhD/18 dated 26.07.2018.
38. External Examiner for M.Phil. Applied Chemistry student, Department of Chemistry, University of Engineering and Technology, Lahore, 26.04.2018.
39. External Examiner/Paper Setter for CHEM-3101, B.Sc(Hons.) Botany Final Examination-2018, GC University Lahore, 4250/C.Exam dated 29.12.2017.
40. External Examiner for M.Phil. Applied Chemistry student, Department of Chemistry, University of Engineering and Technology, Lahore, 05.12.2017.
41. External Examiner for PhD (Chemistry) Scholar Ms. Syeda Shahzadi Batool, Department of Chemistry, University of Engineering and Technology, Lahore, 26.04.2017, Letter No. Exam/2017/291 dated 17.03.2017.
42. External Examiner for PhD (Chemistry) Scholar, Department of Chemistry, Jinnah University for Women, Karachi, Letter No. BASR/Ph.D./Sci-Chem./2017/04 dated 07.2.2017.
43. External Examiner for M.Phil. Applied Chemistry student, Department of Chemistry, University of Engineering and Technology, Lahore, 31.01.2017.
44. External Examiner/Paper Setter for CHEM-3101, B.Sc(Hons.) Botany Final Examination-2017, GC University Lahore, 3521/C.Exam dated 03.01.2017.
45. External Examiner for M.Phil. Applied Chemistry student, Department of Chemistry, University of Engineering and Technology, Lahore, 19.08.2016.
46. External Examiner for M.Phil. Applied Chemistry student, Department of Chemistry, University of Engineering and Technology, Lahore, 16.05.2016.
47. External Examiner and Viva Voce Examiner of Ph.D. (Chemistry) Scholar Mr. Habib Hussain, Department of Chemistry, University of Engineering and Technology, Lahore, 2015.
48. External/Viva Voce Examiner of Ph.D. (Chemistry) Scholar, Institute of Chemistry, University of Sindh, Jamshoro, 31.05.2014.
49. External Examiner for M.Phil Chemistry student, University of Agriculture, Faisalabad, 08.03.2014.
50. External Examiner for M.Phil. Applied Chemistry student, Department of Chemistry, University of Engineering and Technology, Lahore, 24.01.2014.
51. External Examiner for M.Phil. Applied Chemistry student, Department of Chemistry, GC University Faisalabad, 11.01.2014.
52. External Examiner/Expert for Ph.D. Chemistry Scholar Mr. Ali Nawaz Siyal, Institute of Chemistry, University of Sindh, Jamshoro, 23.12.2013, Letter No. DFNS/PH/304 dated 13.12.2013.
53. External Examiner for M.Phil. Applied Chemistry students (3), Department of Chemistry, University of Engineering and Technology, Lahore, 14.12.2013.
54. External Examiner for M.Phil. Chemistry students (2), Institute of Chemistry, University of Punjab, 19.07.2013.
55. External Examiner for M.Phil Chemistry student, University of Agriculture, Faisalabad, 24.05.2013.
56. Evaluation of Thesis for M.Phil degree, University of Karachi, 2013.
57. External Examiner for M.Phil. Chemistry student, Institute of Chemistry, University of Punjab, 08.08.2012.
58. External Examiner for M.Sc Chemistry Students, Government Islamia College, Gujranwala, University of Punjab, 10.12.2011.
59. External Examiner for B.Sc.(Hons.) Chemistry student, Institute of Chemistry, University of Punjab, 11.08.2011.

60. Approved Co-supervisor for PhD, by the BASR, Sindh Agriculture University, Tandojam, 27.04.2011.
61. Examiner for M.Phil degree by appointed by University of Karachi.
62. Examiner for DAE Courses Appointed External Examiner by the N.W.F.P Board of Technical Education, Peshawar for the conduct of DAE annual examination held at D.I.Khan, 16-07-2005.

Session Chair/Co-Chair of International Conferences

1. **Sessions Co-Chair**, 15th International Biennial Conference of Pakistan Society for Microbiology (FIBC-PSM-2025), Quaid-i-Azam University, Islamabad, April 15-18, 2025
2. **Sessions Co-Chair**, International Conference on Nanoscience and Nanotechnology (ICONN 2025), School of Chemical and Materials Engineering (SCME), National University of Sciences and Technology (NUST), *April 14-15, 2025*
3. **Sessions Chair**, 3rd International Chemistry Conference on Emerging Trends in Chemistry (3rd CCUMT), University of Management and Technology, *April 10-12, 2025*
4. **Keynote Session Chair**, 3rd International Conference on Trends and Research in Chemistry TRIC-2024, Department of Chemistry, University of Education, Lahore, November 06-07, 2024.
5. **Sessions Chair**, 1st International conference on Green and Sustainable Environment (ICGSE-2023), Sindh Madressatul Islam University, Karachi, March 08-09, 2023
6. **Sessions Chair**, 20th International and 32nd National Chemistry Conference, Khawaja Farid University of Engineering & Information Technology, Rahim Yar Khan, November 2-4, 2022.
7. **Session Co-Chair**, International Conference on Chemical and Material Sciences (ICCMS-2022), Department of Chemistry, The University of Lahore, Lahore, May 21, 2022
8. **Session Chair**, 19th International & 31st National Chemistry Conference on Emerging Trends in Chemistry-CCUMT-2021 at Department of Chemistry, at University of Management and Technology, Lahore, December 16-18, 2021
9. **Session Chair**, 30th National & 18th International Chemistry Conference on Recent Trends in Chemistry-CCUMT-2019 at Department of Chemistry, at University of Management and Technology, Lahore, November 27-29, 2019
10. **Session Chair**, 1st International Conference on Science, Technology and Innovation, Kinnaird College for Women, 2-4 April 2019.
11. **Session Chair**, 02nd AIOU National Graduate Conference organized by Office of Research Innovation & Commercialization (ORIC) at Allama Iqbal Open University (AIOU), Islamabad, August 28-29, 2018.
12. **Session Chair**, 6th International Conference on Education (ICE), (Science Beyond Classroom), at University of Education, Bank Road Campus, Lahore, March 15-17, 2018.
13. **Session Chair**, 2nd UICPAS-2017 (UMT International Conference on Pure and Applied Sciences), at University of Management and Technology, Lahore, 05-07 October 2017
14. **Session Chairperson**, 1st international conference of women in science (Women in Science Without Borders (WISWB) organized by Egyptian Academy of Scientific Research and Technology (ASRT), Cairo, Egypt, 21-23 March 2017.
15. **Session Chair**, 27th National 15th International Chemistry Conference, Department of Chemistry, University of Malakand, August 22-25, 2016.
16. **Session Co-Chair**, 11th International Symposium on Analytical and Environmental Chemistry (ISAEC-2016), National Centre of Excellence in Analytical Chemistry, University of Sindh, Jamshoro, March 07-08, 2016

17. **Session Co-Chair**, Fourth International Conference on Environmental Horizon (ICEH 2016), Department of Chemistry, University of Karachi, January 08-10, 2016.
18. **Session Chair**, Third International Conference on Water, Energy and Environment (ICWEE 2015), American University of Sharjah, 24-26 March 2015, United Arab Emirates, **Sharjah**.
19. **Session Co-Chair**, Third International Conference on Environmental Horizon (ICEH 2015), Department of Chemistry, University of Karachi, 9-11 January 2015.
20. **Session Co-Chair** and member organizing committee, 1st international conference on forensic science and justice, GC University Lahore, 22-24 October 2014.
21. **Chairman Technical Session**, C2 Advanced Materials (Nanocomposites), 3rd ISESCO International Workshop and Conference on Nanotechnology (IWCN 2012), 06 December 2012, Universiti Kebangsaan Malaysia, Selangor, **Malaysia**.
22. **Panellist** for Symposium of the USM Fellowship Holders 2009, 14-16 November 2009, nominated by Institute of Postgraduate Studies, Universiti Sains Malaysia (USM), Penang, **Malaysia**.

Resource/Focal Person, Trainer

1. Resource Person, GenAI Training for University Staff to Enable Efficient Workflows, University of Central Punjab (UCP), Lahore, 23 December 2025
2. Resource Person, "Grant/Proposal Writing for Funding" at GC University Lahore, 15.10.2025.
3. Resource Person, "Using Generative AI in Research" at the GenAI4Univ Crash Course for Universities' faculty members organized by Innoventures Global, 13.09.2025.
4. Resource Person, Training Workshop for Faculty Members on Generative Artificial Intelligence in Research and Academics, organized by University of Central Punjab (UCP), Lahore, 08-11 September 2025.
5. Trainer "Commercialization Strategies & University-Industry Models and Legal Business Setup in Pakistan", Summer Course on Entrepreneurship: From Idea to Startup Launch, organized by ORIC, UCP, August 12, 2025
6. Trainer "Trade Mark and Patent Filing and Real-World Examples", Summer Course on Entrepreneurship: From Idea to Startup Launch, organized by ORIC, UCP, August 15, 2025.
7. Focal Person/Trainer, Two-day on "Workshop on research proposals & grants and Patent writing" Day-1: Research proposals & grants (RPG)- basic techniques and winning strategy. Day-2: Patent Writing, Office of Research, Innovation and Commercialization, University of Central Punjab, Lahore, August 04 and 06, 2025.
8. Master Trainer, MS/MPhil/PhD Supervision Course (16 contact hours) on "Supervising Projects and Dissertations" as mandatory requirement under HEC GEP 2023, for the faculty members of the University of Central Punjab (UCP), Lahore, Cohort 3 from 28.07.2025 to 07.08.2025.
9. Resource Person, Training Workshop for Faculty Members on Generative Artificial Intelligence in Research, Teaching and Professional Development, organized by University of Engineering and Technology (UET), Lahore, 08.05.2025
10. Focal Person/Trainer, Two-day on "Workshop on research proposals & grants: challenges and opportunities" Day-1: Research proposals & grants (RPG)- basic techniques and winning strategy. Day-2: RPG and commercialization (industry), Office of Research, Innovation and Commercialization, University of Central Punjab, Lahore, September 05-06, 2024.
11. Master Trainer, MS/MPhil/PhD Supervision Course (16 contact hours) on "Supervising Projects and Dissertations" as mandatory requirement under HEC GEP 2023, for the faculty members of the University of Central Punjab (UCP), Lahore, 05.08.2024-15.08.2024.

12. Resource Person, Training Workshop for Faculty Members on Generative Artificial Intelligence in Research, Teaching and Professional Development, organized by Center for Teaching and Learning (CTL), University of Management and Technology (UMT), 13.06.2024.
13. Resource Person, Training Workshop for Research Students on Use of Generative Artificial Intelligence in Research and Writing, organized by School of Food and Agricultural Sciences (SFAS), University of Management and Technology (UMT), 11.05.2024.
14. International Scientific Committee Members for 2nd International Conference on Advancing Sustainable Futures (ICASF 2024) by the Abu Dhabi University, **Abu Dhabi**.
15. Resource Person, two-day Training Workshop on " Use of Generative Artificial Intelligence in Higher Education" for teachers of the public and private sector Universities of Punjab, organized by Punjab Higher Education Commission (PHEC), at UVAS Lahore, 28.02.2024
16. Resource Person, two-day Training Workshop on " Use of Generative Artificial Intelligence in Higher Education" for teachers of the public and private sector Universities of Punjab, organized by Punjab Higher Education Commission (PHEC), at UVAS Lahore, 14.02.2024
17. Master Trainer, MS/MPhil/PhD Supervision Course (16 contact hours) on "Supervising Projects and Dissertations" as mandatory requirement under HEC GEP 2023, for the faculty members of the University of Central Punjab (UCP), Lahore, 29.01.2024-29.02.2024.
18. Resource Person, two-day Training Workshop on " Use of Generative Artificial Intelligence in Higher Education " for teachers of the public and private sector Universities of Punjab, organized by Punjab Higher Education Commission (PHEC), at UVAS Lahore, 31.01.2024
19. Resource Person, one day training workshop on the "Use of Generative Artificial Intelligence in Higher Education" for the faculty members of the public and private sector Universities of Punjab, organized by Punjab Higher Education Commission (PHEC), at UVAS Lahore, 20.12.2023
20. Focal Person/Trainer, Two Sessions on "Workshop on research proposals & grants: challenges and opportunities", Office of Research, Innovation and Commercialization, University of Central Punjab, Lahore, September 25-26, 2023.
21. Trainer, Training Workshop on Program Assessment Process, Learning Innovation Centre and Faculty of Science and Technology, University of Central Punjab, 12.09.2023.
22. Trainer, Proposal Development for Funded Projects, Leadership and Professional Development Centre, Bahria University Lahore Campus, June 14, 2023
23. Organizer, Workshop on "Sampling of smog through PTFE and Quartz filters for PM_{2.5} mass, black carbon, ionic species, and trace metals" by Dr. Muhammad Kamran Khan, Karachi at Department of Basic and Applied Chemistry, University of Central Punjab, 14 November 2022. **Project funded by University at Albany, USA.**
24. Organizer, International webinar on "Particulate Matter (PM) and Health Effects Matters: what is known and What Needs to be Done" by Dr. Haider Abbas Khwaja, University at Albany, USA at Department of Basic and Applied Chemistry, University of Central Punjab, 14 November 2022. **Project funded by University at Albany, USA.**
25. Member National Advisory Committee, 19th International & 31st National Chemistry Conference on Emerging Trends in Chemistry-CCUMT-2021 at Department of Chemistry, at University of Management and Technology, Lahore, December 16-18, 2021.

26. Member Advisory and Review Committee, Third International Symposium on Materials, Electrochemistry and Environment "CIMEE20" on 17-19 September 2020, Lebanese University, **Lebanon**. <http://cimee-science.org/index.php/cimee20/>.
27. Member Scientific/Organizing Committee, three-day international conference on "Chemical and Pharmaceutical Sciences: New Trends in Medicinal & Pharmaceutical Chemistry" to be held on January 29-31, 2020 at the Forman Christian College (A Chartered University), Lahore, Pakistan.
28. Member National Advisory Committee, "30th National & 18th International Chemistry Conference on Recent Trends in Chemistry-CCUMT-2019" at Department of Chemistry, at University of Management and Technology, Lahore, November 27-29, 2019.
29. Member Advisory Committee, 5th Conference on Frontiers of Nanoscience and Nanotechnology at PINSTECH on September 24-25, 2019.
30. Member Scientific, Reception and Registration committees, Three-day conference "Nanomaterials: New Trends in Development and Applications" January 29-31, 2019 at the Forman Christian College (A Chartered University), Lahore, Pakistan.
31. Member Advisory Committee, 4th Conference on Frontiers of Nanoscience and Nanotechnology at PINSTECH on December 12-13, 2017.
32. Organizer/Focal Person, 02nd Workshop on Nanoscience and Nanotechnology, GC University Lahore, 27 October 2017. **Funds received from HEC**.
33. Member Advisory Committee, 3rd Conference on Frontiers of Nanoscience and Nanotechnology at PINSTECH on October 25-27, 2016
34. Member, International Conference Committee, The ICOCC 2016: 18th International Conference on Organometallic Chemistry and Catalysis, September 22 - 23, 2016, Los Angeles, **USA**.
35. Organized "5th Annual Poster Competition", Faculty of Science and Technology, GC University Lahore, 22 October 2015.
36. Member Advisory Committee, 2nd Conference on Frontiers of Nanoscience and Nanotechnology at PINSTECH on September 08-10, 2015
37. Organizer, Workshop on Nanoscience and Nanotechnology, GC University Lahore, 27 August 2015. **Funds received from HEC**.
38. Organized 3rd training course on First Aid in collaboration with Pakistan Red Crescent Society, 18-20 November 2014.
39. Organized "4th Annual Poster Competition", Department of Chemistry, GC University Lahore, 23 September 2014.
40. Organized 2nd training course on First Aid in collaboration with Pakistan Red Crescent Society, 12-14 November 2013.
41. Organized "3rd Annual Poster Competition", Department of Chemistry, GC University Lahore, 24 September 2013.
42. Selected to host World Café by the BASF the Chemical Industry for the Science Breakfast to discuss on topic "It Is All About Chemistry. How We Tackle the Energy Challenges of the Future", 03 July 2013, Lochau, **Austria**.
43. Organized seminar on Hepatitis C Virus NS3/4A Protease Inhibitors: Understanding and Avoiding Drug Resistance, 09.01.2013 by Dr. Akbar Ali, University of Massachusetts Medical School, USA.
44. Organized Three days workshop on Environmental Pollution and Its Health Impact, GC University Lahore, 29-31 December 2012. By Dr. Haider Abbas Khwaja, University of Albany, USA.
45. Organized seminar on Sheesha Cafes- A Landmark of Drug Addiction, by S. Z. Hussain, Consultant Anti-Drugs/Narcotics Campaign, 30.11.2012.
46. Organized seminar on "A little outside Chemistry" by Dr. M.H.Haider, Cardiff University, UK, 26.11.2012.
47. Organized "2nd Annual Poster Competition", Department of Chemistry, GC University Lahore, 25 September 2012.

48. Organized a seminar and walk against drug of abuse in collaboration with Drug Free City Lahore, ANF, Bokhari Auditorium, GC University on 16 May 2012.
49. Organized a training course on First Aid in collaboration with Pakistan Red Crescent Society, 17-19 April 2012.
50. Organized a seminar on the 'Development of Novel Radionuclides for Medical applications' by Prof. Dr. Syed M. Qaim, Advisor Jülich Research Centre, and University of Cologne, Germany on 26 March, 2012.
51. Organized a Seminar on “Drug Abuse: Challenges and opportunities”, by NGO, at GC University Lahore, 22 December 2011.
52. Organized a Seminar on “Drug Control Mechanism in Pakistan and effects of drug money on our socio-economic set up”, by ANF, at GC University Lahore, 14 December 2011.
53. Organizer of International Workshop on Crystallography and Nanomaterials, (IYC 2011 Activity) Department of Chemistry, GC University Lahore, 19-21 October 2011, sponsored by IUCr, **Received funding USD:5000/- from IUCr.**
54. Organizer of First meeting of Pakistan Association of Crystallography, (IYC 2011 Activity) Department of Chemistry, GC University Lahore, 21 October 2011.
55. Organizer of “Inter Universities Poster Competition”, (IYC 2011 Activity), Department of Chemistry, GC University Lahore, 12 September 2011.
56. Organizer of “Two Days Workshop on Crystallography”, (IYC 2011 Activity) Department of Chemistry, GC University Lahore, 6-7 June 2011.
57. Invited by German Embassy, Malaysia to attend the event an introduction to “Alumniportal Deutschland”, bringing together leaders of the German business community in Malaysia and German alumni, on 13th October 2009, USM, **Malaysia.**
58. Training Course for Faculty of Department of Chemistry, GC University Lahore on Academic Assessment in Higher Education, 20-21 April 2009. Two presentations delivered on 1. Questions in Question Scripts of Higher Education and 2. Marking Scheme.
59. Instructor, Computer workshop from 27th July to 2nd June 2002, Department of Chemistry, University of Karachi.
60. Member Accommodation Committee, 3rd International and 13th National Chemistry Conference, University of Karachi, December 2002.
61. Member Liaison with Media committee, 3rd International and 13th National Chemistry Conference, University of Karachi, December 2002.
62. Member Accommodation Committee, 9th National Chemistry Conference, University of Karachi, December 1998.

International Conferences/Workshops/Seminars/Meetings Attended (other than oral/poster/invited presentations listed under list of publications)

1. Attended, the 18th Shandong Province Higher Education Institutions Joint Conference, organized by Shandong University of Science and Technology, Qingdao, China, July 6-7, 2024, **China.**
2. Attended NanoSeries 2022: Global Conference on Nanotechnology, June 21-24, 2022|Virtual, organized by ELANVA, **India.**
3. Science Advice Workshop at the GYA Annual General Meeting and Conference for Young Scientists 2022, by Global Young Academy and Young Academy of Japan, at Kyushu University, June 13, 2022, **Japan.**
4. World Science Forum, 07-11 November 2017, King Hussein Bin Talal Convention Centre, Dead Sea, **Jordan.**
5. 14th New Ag International Conference and Exhibition by New Ag International, China World Hotel, Beijing, **China**, 6- 8, April 2016 (*Sponsored by Kengenta*).

6. New paradigms for integrating sustainable development into science and engineering education through IEEE Educational Activities, Institute of Electrical and Electronics Engineers (IEEE), 04 November 2015 in Budapest, **Hungary**.
7. World Science Forum, 04-07 November 2015 in Budapest, **Hungary**. (*Travel Award by UNESCO*).
8. World Chemistry Leadership Meeting on IUPAC's role in achieving United Nations Sustainable Development Goals, 10-12 August 2015, Busan, **Korea**.
9. 48th International Union of Pure and Applied Chemistry (IUPAC) General Assembly as a "Young Observer" 7-14 August 2015, Busan, **Korea**. (*Travel Award by IUPAC*)
10. World Science Forum, 24-27 November 2013 in Rio de Janeiro, **Brazil**. (*Travel Award by UNESCO*)
11. 47th IUPAC General Assembly, 08-15 August 2013, Istanbul, **Turkey**. (*Travel Award by HEC*)
12. 63rd Lindau Nobel Laureate Meeting in Chemistry from 29 June to 05 July, 2013 at Lindau, **Germany**. (*Travel Award by TWAS and AKB Stiftung*)
13. Workshop on presentation skills by Harold W. Kroto (Nobel Laureate) 01 July, 2013 at Lindau, **Germany**. (*Travel Award by TWAS and AKB Stiftung*)
14. International Scientific Spring 2012, March 05-09, 2012 at NCP, **Islamabad** and ICTP, Italy. (*Travel Award by NCP*)
15. G77 meeting on South-South Cooperation in Science and Technology at World Science Forum, 17 November 2011 in Budapest, **Hungary**. (*Travel Award by UNESCO*)
16. UNESCO Parliamentary Session at World Science Forum, 18 November 2011 in Budapest, **Hungary**. (*Travel Award by UNESCO*)
17. IAP Young Scientists conference and World Economic Forum (WEF) Annual Meeting of the New Champions 2010, "Summer Davos" in Tianjin, 13-15 September 2010, **China**. (*Travel Award by IAP and WEF*)
18. Workshop on Microfluidizer and Ultrasound Novel and Elegant Processing Techniques in NANO Technology Application, School of Industrial Technology, Universiti Sains Malaysia, 05 May 2010, Penang, **Malaysia**.
19. Workshop on the establishment of Global Young Academy (GYA), 14-16 February 2010, Berlin, **Germany**. (*Travel Award by IAP*)
20. The 3rd International Conference of UNESCO Chair on Higher Education for Sustainable Development (HESD), Universiti Sains Malaysia, 20-22 November 2009, Penang, **Malaysia**. Participated in round tables, workshops and created links with international community.
21. Symposium of the USM Fellowship Holders 2009, Universiti Sains Malaysia (USM), 14-16 November 2009, Penang, **Malaysia**. Nominated as a panellist.
22. 2nd USM-UHP (Universiti Sains Malaysia-Université Henri Poincaré, France) Colloquium, 27-29 October 2009, USM, Penang, **Malaysia**.
23. Meeting with senior officials from Developing Countries, UNU-MERIT, Maastricht University, 10-14 November 2008, Maastricht, **The Netherlands**. (*Travel Award by UN*)
24. Thirteenth General Assembly Meeting of the Organization of Islamic Conference (OIC) Standing Committee on Scientific and Technological Cooperation (COMSTECH), 01-03 April 2008, **Islamabad**.
25. Attended 10th Young Scientists Conference on Chemistry, 27-29 March 2008, Rostock, **Germany**. (*Travel Award by PSF*)
26. 44th International Union of Pure and Applied Chemistry (IUPAC) General Assembly as a "Young Observer" and 41st IUPAC World Chemistry Congress, 4-12 August 2007, Torino, **Italy**. (*Travel Award by IUPAC*)
27. Participated in 2nd Meeting of Noble Laureates with Pakistani Young Scholars in Islamabad/Lahore, March 27-31, 2007, **Islamabad**. Sponsored by HEC, PAEC, PAS, MoST and PSF.

28. 58th SBPC (Brazilian Society for the Progress of Science) UFSC, 16-21 July 2006, Florianopolis, **Brazil**.
29. Workshop on “Developing the underdeveloped: the role of science” and “Science and society: the young scientists’ contribution” Organized by World Academy of Young Scientists (WAYS) on 12 December 2004, at Marrakech, **Morocco**. (*Travel Award by UNESCO*)

National Conferences/Workshops/Seminars/Meetings Attended

(other than oral/poster/invited presentations listed under list of publications)

1. Emerging Risk Conference (ERC) 2024, organized by Marsh and CERM Pakistan at the Pearl Continental Hotel, Lahore on 24.09.2024.
2. 3rd UCP International Conference on The Transformative Potential of Generative Artificial Intelligence for Law and Legal Education: Opportunities, Challenges and the Way Forward, held on 21st & 22nd March 2024 at The University of Central Punjab, Lahore.
3. Two day workshop on “Promoting Research Excellence in Academics across Pakistan” Elsevier in collaboration with HEC Pakistan, 1-2 February 2022.
4. Seminar on role of modern tools in improving quality of teaching-learning process, Directorate of quality enhancement, Virtual University of Pakistan, Lahore, 21.06.2018.
5. Meeting to review current state of nanotechnology capability as well as projects funded through the NCNST, Planning Commission, Islamabad, 04.06.2018.
6. Energy Efficiency Initiatives, jointly being organized by LCCI and National Energy Efficiency & Conservation Authority. (NEECA), The Lahore Chamber of Commerce & Industry, 09.05.2017.
7. National Conference on “Renewable Energy Promotion and Innovative Technologies” organized by Standing Committee on Renewable Energy Promotion, The Lahore Chamber of Commerce & Industry, 24.04.2017.
8. Current Research in Chemical and Pharmaceutical Sciences, Department of Chemistry, Forman Christian College (A Chartered University), Lahore, 18-20 January 2017.
9. Workshop on Concept of bridging BA/BSc with BS four years and adoption of Associate Degree as an alternate degree, HEC Regional Office Lahore, 15.01.2016.
10. Provincial Special Selection Board, Planning and Development Department, Government of the Punjab, Lahore, August 2015
11. Board of Governors, Abdus Salam School of Mathematical Sciences, GC University Lahore, 02.06.2015, 30.09.2015, 06.01.2016, 08.02.2016.
12. Governing Board Meeting of National Testing Service, Serena Hotel, Islamabad, 20.01.2014.
13. World Space Week 2013 at SRDC, SUPARCO, Lahore, 04.10.2013.
14. Seminar on Space Applications in context of world space week 2012, 04.10.2012 at SRDC, SUPARCO, Lahore.
15. Focus group meeting on laboratory equipment, PITMAEM, PCSIR, Lahore, 28 July, 2011. Held by STEDEC (Technology Commercialization Corporation of Pakistan, MoST and PCSIR.
16. Workshop on Development and Analysis of Non-Ferrous Alloys, Centre of Advanced Studies Centre (CASP), GC University, Lahore, 14 October, 2010.
17. National Workshop on “Crystallography: Single Crystal Structure Determination” 25-26 August 2008 at Department of Chemistry, GC University Lahore.
18. 2nd National Conference on “Health Biotechnology” 27-28 May, 2008 at Pakistan Academy of Sciences, Islamabad. Organized by NCB.
19. Attended, as a member, “60th meeting of Cosmetics and Toilet Goods Sectional Committee” of PSQCA on 22-05-2008 at SDC, Karachi.

20. National Workshop on S&T Statistics: International Practices and their Applications, 15-16 April 2008, Islamabad. Organized by PCST.
21. Attended, as a member, "80th meeting of oil, fat, soap and detergent Technical Committee" of PSQCA on 15-04-2008 at SDC, Karachi
22. National Conference on "Recent Advances in Agriculture Biotechnology" 18-19 March 2008, PAS, NCB, NIGAB, Islamabad.
23. Attended, as a member, "79th meeting of oil, fat, soap and detergent Sectional Committee" of PSQCA on 07-12-2007 at SDC, Karachi
24. Attended, as a member, "78th meeting of oil, fat, soap and detergent Sectional Committee" of PSQCA on 16-08-2007 at SDC, Karachi.
25. Seminar on Latest plastic mold and molding technologies-Hot Runner, organized by Japan International Cooperation Agency (JICA), at PITAC, 29-30 September 2004, Lahore.
26. Workshop on Environmental Chemistry, Department of Chemistry, University of Karachi and EPA-USA Representative, January 8-9, 2004, Karachi.

Membership of Professional Bodies

1. Member, Asian Council of Science Editors (ACSE), Membership No. 242616324, 05.11.2024.
2. Regular Member, American Chemical Society (ACS), USA. Membership No. 30006626, 26.04.2023.
3. Mentor in the Lindau Mentoring Hub, Germany since 14.12.2021-07.02.2025.
4. Member, International Association of Advanced Materials, Sweden, membership Number: 779151923080. 10.10.2017-09.10.2022.
5. Professional Member of The New York Academy of Sciences (NYAS), New York, USA, 01/08/2016 - 31/07/2017.
6. Life Member, Chemical Society of Pakistan, 29.07.2015.
7. Member, American Geophysical Union (AGU), 04.08.2014 to 03.08.2017.
8. Advisor, Mendeley, UK/USA, since December 03, 2010.
9. European Association of Chemical and Molecular Sciences (EuCheMS).
10. Mentor/Member of Forum: Science and Innovation for Sustainable Development (SISD), AAAS, USA since June 26, 2010.
11. Member of International Union of Materials Research Societies (IUMRS), since June 22, 2010.
12. Founding Member of Global Young Academy (GYA), Berlin, Germany, since 16 February 2010.
13. World Assembly of Youth, Malaysia. Volunteer since 2009
14. Member of Association of Polar Early Career Scientists (APECS) since December 2009.
15. Member of The Science Advisory Board (SAB), United States, since June 03, 2008, Membership Number: 83774.
16. International Union of Pure and Applied Chemistry (IUPAC) Affiliate since 2007 to 2012, USA.
17. Member of The New York Academy of Sciences (NYAS), New York, USA. Membership ID 05077361 for 2007-08, Membership ID 10960387 for 2008-09.
18. Member of International Association of Colloid and Interface Scientists (IACIS), The Netherlands. Membership # 1097, 2006.
19. Member of American Chemical Society (ACS), USA. Membership # 2405692, 2006.
20. Regular Member of World Association of Young Scientists (WAYS), Hungary. Since 13.12.2004.
21. Treasurer, Pakistan Association of Crystallography, 21 October 2011.

Countries Visited

Morocco, Dubai, England, Brazil, Italy, Germany, Belgium, Netherlands, Abu Dhabi, Malaysia, Qatar, Egypt, China, Greece, Hungary, Ajman, Austria, Switzerland, Turkey, Sharjah, Thailand, South Korea, Slovakia, Iran, Jordan.

Research Interest

1. **Nanotechnology:** Artificial Intelligence integrated synthesis and applications of nanomaterials, Synthesis of metal oxides nanoparticles, nanocomposites and thin films for their applications in nanofiltration for waste water, slow release nano-fertilizers, catalysis, photodegradation of industrial wastes/organic pollutants/pesticides, solid oxides fuel cells, antibiotic/anticancer nanodrugs, drug delivery & release, nanoproducts for skin and body care and toxicity of nanomaterials.
2. **Nano-Forensics:** Analysis and health hazards of poisons in medicinal oils. Antimicrobial activities of drugs. Application of nanomaterials in degradation of explosive materials and development of nanopowders for latent fingerprints.
3. **Physical Chemistry:** Kinetic study of electron transfer reactions. Reaction mechanism. Micellar effect and catalysis of organic/inorganic reactions of biological interest.



List of Publications

(Muhammad Akhyar Farrukh)



(A) US Patents/Applications Issued.

1. **Muhammad Akhyar Farrukh**, Development of nanofiltration system with La/SnO₂-TiO₂ nanoparticles, US patent filing application No. 15/131,814, Patent. No. US 10,258,977 B2, Pub. Date of patent issued: 16 April 2019.
2. **Muhammad Akhyar Farrukh**, Muhammad Rehan Gul, and Muhammad Khaleeq-ur-Rahman, Ciprofloxacin loaded diethylaminoethyl cellulose nanoparticles, US patent filing application No. 14/516,824, Patent. No. US 9,555,009 B2, Date of patent issued: 31 January 2017.
3. **Muhammad Akhyar Farrukh**, Adarsh Shams, and Muhammad Khaleeq-ur-Rahman, Drug entrapment efficiency and sustained drug release of Chloramphenicol loaded polymeric-iron nanoparticles, US patent filing application No. 14/514,055, Patent. No. US 9,393,313 B2, Date of patent issued: 19 July 2016.
4. **Muhammad Akhyar Farrukh**, ZnO-SiO₂ nanopowder for the development of latent fingerprints, US patent filing application No. 13/968,025, Pub. No.: US 2015/0050495 A1, Publication Date: 16 February 2015.
5. **Muhammad Akhyar Farrukh** and Fizza Naseem, Nano-Leucite for Slow Release Nitrogen Fertilizer and Green Environment, US patent filing application No. 13/738,727, Patent No. US 8,911,526 B2, Date of patent issued: 16 December 2014.
6. **Muhammad Akhyar Farrukh** and Rohana Adnan, Zinc oxide nanoflaks for treatment of pollutants, US patent filing application No. 13/609,962, Pub. No.: US 2014/0069819 A1, Publication Date: 13 March 2014.
7. **Muhammad Akhyar Farrukh**, Analytical Grade Salt, US patent filing application No. 13/216,232, Patent No. US 8,273,321 B1, Date of patent issued: 25 September 2012.

(B) Papers Published in International Abstracted/Referred Journals

1. Huma Waqif, Neelma Munir, Zainul Abideen, Rukhama Haq, **Muhammad Akhyar Farrukh**, Daniel A. Dias & Mohamed A. El-Sheikh, Application of Algae-Mediated Zinc Oxide Nanoparticles Enhances Citrus Canker Disease Control and Plant Growth for Sustainable Agriculture, *BioNanoScience*, 16, 547 (2026). (IF2025/26=4.0)
2. Aliya Zahid, Shaista Ali, Muhammad Shahid, **Muhammad Akhyar Farrukh**, Enhancing synergistic efficiency of rGONCs heterostructure for wastewater removal via photocatalysis and adsorption against cationic and anionic dyes, *FlatChem*, 59, 101104, (2026). (IF2025/26=5.7)
3. Shaista Ali, Aliya Zahid, Muhammad Haider Saleem, Nida Tahir, **Muhammad Akhyar Farrukh**, Aniza Latif, Nadia Khalid & Fizza Naseem, Exploring Iron and Copper Chalcogenides as Promising Photocatalysts for Wastewater Application: An Experiment & DFT Analysis, *Catal. Surv. Asia.*, <https://doi.org/10.1007/s10563-026-09482-9> (2026). (IF2025/26=2.5)

4. Azka Shakeel, Syeda Taskeen Shahid, Shaista Ali, Nimra Farooq, Atia Sarfraz, **Muhammad Akhyar Farrukh**, Harnessing *Aloe barbadensis* Miller (*Aloe vera*) gel extract for the green synthesis of ZnO and MnO₂ nanoparticles: A phytochemical, statistical, and antibacterial study, *Environ Prog Sustainable Energy*, 45(4), e70389, (2026) (IF2025/26=2.6)
5. Syeda Taskeen Shahid, Ali Abbas, Shaista Ali, Aliya Zahid, **Muhammad Akhyar Farrukh**, One-pot hydrothermal engineering of rGO-doped transition metal oxide nanocomposites for synergistic photocatalytic and adsorptive performance, *Inorg. Chem. Commun.*, 186, Part 2, 116327. (2026). (IF2025/26=5.9)
6. Abaid Ullah, Aliya Zahid, Shaista Ali, Aniza Latif, Muhammad Shahid, Atia Sarfraz, **Muhammad Akhyar Farrukh**, Biochar and GO doped biochar powder for photocatalysis, adsorption, and latent fingerprint detection, *J. Water Process Eng.*, 78, 108794, (2025) (IF2025=6.6)
7. Yaseen Ayub, **Muhammad Akhyar Farrukh***, Sana Ben Khalifa, Saleh Chebaane, Refka Ghodhban, Mostafa A. Ismail, Muhammad Ibrar, Tauseef Munawar, Suleyman I. Allakhverdiev, In-situ Synthesis of Polyethylene Glycol-assisted Combined Semiconductor Metallic Oxides Nanocomposite for solar cell, supercapacitor, photocatalytic, and antibacterial applications, *Ceram. Int.*, 51 (23B), 39432-39444 (2025) (IF2025=6.0)
8. Ali Saeed, **Muhammad Akhyar Farrukh**, Hafiz Mahfooz ul Haque, and Duaa Javaid, Advanced Machine Learning Algorithms for Accurate Prediction of Band Gaps in Rare Earth Metal Oxides Nanoparticles, *ES Energy Environ.* 28, 1314 (2025).
9. Faryal Sakina, Shaista Ali, **Muhammad Akhyar Farrukh**, Ayesha Imtiaz & Abid Mahmood, Pristine and green synthesis of Fe₂O₃ and CuO nanoparticles using Allium cepa for photocatalytic and antibacterial applications, *J. Iran. Chem. Soc.*, 22(7), 1535-1553 (2025). (IF2025=2.4)
10. Ali Raza, Anam Ashraf, Shaista Ali, Farrukh Bashir, **Muhammad Akhyar Farrukh**, Fizza Naseem, Durr-e Shahwar, Assessing the Impact of NaOH on Green Synthesis of Zinc-Based Nanoparticles Using Onion Extract and Exploring Their Photocatalytic, Antibacterial, and Antioxidant Potentials, *ChemistrySelect*, 10(23), e00253, (2025) (IF2025=2.3)
11. Qaisar Manzoor, **Muhammad Akhyar Farrukh***, Muhammad Tariq Qamar, Arfaa Sajid, Efficient adsorption and photocatalytic removal of hexavalent chromium using chitosan-functionalized graphene oxide-MnO₂ nanocomposite, *Int J Biol Macromol.* 311(3), 144009, (2025). (IF2025=8.7)
12. Hanya Murtaza, Shaista Ali, Arfa Mubeen, Nadia Khalid, Nauman Ahmad, **Muhammad Akhyar Farrukh**, Green synthesized (*Curcuma longa*) Ni nanoparticles doped chitosan and PEG for wound healing and anti-bacterial activity, *Int J Biol Macromol.* 308(4), 142631, (2025). (IF2025=8.7)
13. Sanaya Yousaf, Anam Ashraf, Shaista Ali, Akasha Rafiq, Abid Mahmood, Farrukh Bashir, **Muhammad Akhyar Farrukh**, Fizza Naseem, Durr -e-Shahwar, Evaluation of the preservative efficacy of green-synthesized ZnO Nanoparticles using *Cucumis sativus* in cream formulations, *Environ Prog Sustainable Energy*, 44(3), e14583, (2025) (IF2025=2.6)

14. Rabia Manzar, Sajid Mahmood, **Muhammad Akhyar Farrukh**, Qandeel Laraib, Rabia Nawaz, Muhammad Tariq Qamar, Ammar Zidan, İsmail Seçkin Çardaklı, Ali Motameni, Shahid Iqbal & Khalid M. Alotaibi, Graphene oxide-mediated green synthesis of Ag, Co₃O₄ and ZnO nanocomposites for multifunctional antimicrobial applications, *J. Sol-Gel Sci. Techn.*, 113(2), 573–591 (2025). (IF2025=4.2)
15. Muhammad Haider Saleem, Shaista Ali, **Muhammad Akhyar Farrukh**, Syed Sajid Ali Gillani, Investigating the properties of cubic and hexagonal Nd₂O₃ nanoparticles for optics & energy storage material: Experimental and DFT approach, *Solid State Commun.*, 397, 115836 (2025). (IF2025=2.8)
16. Rabia Arshad Butt, **Muhammad Akhyar Farrukh***, Anwar Ul-Hamid, Structural elucidation and environmental remediation potential of *Ficus carica* mediated synthesis of novel Eu₃O₄/rGO nanocatalyst, *Mater. Sci. Eng: B.*, 312, 117876 (2025). (IF2025=5.7)
17. Qaisar Manzoor, **Muhammad A. Farrukh**, Muhammad T. Qamar, Arfaa Sajid, Samar A. Aldossari, A. Manikandan, Munawar Iqbal, Polymer-assisted synthesis of ternary magnetic graphene oxide nanocomposite for the adsorptive removal of Cr(VI) and Pb(II) ions, *Heliyon*, 10(15), E35204 (2024) (IF2023/24=3.4)
18. Atif Hussain, Aliya Zahid, Shaista Ali, Nadia Khalid, Anam Ashraf, Aniza Latif, **Muhammad Akhyar Farrukh**, Muneeba Jabeen, Enhancing the photocatalytic efficiency of green synthesized MoO₃ and MnO nanoparticles by making heterojunction with graphene oxide, *J. Taiwan Inst. Chem. E.*, 163, 105642 (2024) (IF2023/24=5.5)
19. Zirwa Fayyaz, **Muhammad Akhyar Farrukh***, Anwar Ul-Hamid and Kok-Keong Chong, Elucidating the structural, catalytic and antibacterial traits of *Ficus carica* and *Azadirachta indica* leaf extracts-mediated synthesis of Ag/CuO/rGO nanocomposite, *Microsc. Res. Tech.*, 87(5), 957-976 (2024) (IF2022/23=2.5)
20. Huma Waqif, Neelma Munir, **Muhammad Akhyar Farrukh**, Maria Hasnain, Muhammed Sohail, Zainul Abideen, Algal macromolecular mediated synthesis of nanoparticles for their application against citrus canker for food security, *Int. J. Biol. Macromol.*, 263, 130259 (2024). (IF2022/23=8.2)
21. Qaisar Manzoor, **Muhammad Akhyar Farrukh*** and Arfaa Sajid, Optimization of lead (II) and chromium (VI) adsorption using graphene oxide/ZnO/chitosan nanocomposite by response surface methodology, *Appl. Surf. Sci.*, 655, 159544 (2024). (IF2022/23=6.7)
22. Ayesha Imtiaz, **Muhammad Akhyar Farrukh**, Hamid Latif, pH-dependent Synthesis of CeO₂-ZnO Nanocomposite for Enhanced Environmental Remediation of Endosulfan and Dimethoate Pesticides, *J. Mol. Struct.*, 1300, 137174 (2024). (IF2022/23=3.8)
23. Arooj Asif, **Muhammad Akhyar Farrukh***, *Citrus limetta* essential oil mediated synthesis of Dy₂O₃/Eu₂O₃/rGO nanocomposite for the removal of ciprofloxacin under irradiation of Visible and UV light, *Mater. Sci. Eng: B.*, 299, 116997 (2024). (IF2022/23=3.6)
24. Arifa Shaukat, **Muhammad Akhyar Farrukh**, Kok-Keong Chong, Rabia Nawaz, Muhammad Tariq Qamar, Shahid Iqbal, Nasser S. Awwad, Hala A. Ibrahim, The Impact of Different Green Synthetic Routes on the Photocatalytic Potential of FeSnO₂ for the Removal of Methylene Blue and Crystal Violet Dyes under Natural Sunlight Exposure, *Catalysts*, 13(7), 1135 (2023) (IF2022/23=3.9)

25. Iqra Mubeen, **Muhammad Akhyar Farrukh***, Mechanisms of green synthesis of iron nanoparticles using Trifolium alexandrinum extract and degradation of methylene blue. *Inorg. Nano-Met. Chem.*, 53 (1), 23-32 (2023) (IF2022/23=1.7)
26. Arooj Javaid, **Muhammad Akhyar Farrukh***, Comparison of photocatalytic and antibacterial activities of allotropes of graphene doped Sm₂O₃ nanocomposites: optical, thermal and structural studies, *J. Chin. Chem. Soc.*, 70(1), 32-45 (2023). (IF2022/23=1.8)
27. Shahana Akbar, **Muhammad Akhyar Farrukh*** and Kok-Keong Chong, Facile synthesis of Gd₂O₃/rGO nanocomposite: optical, thermal, morphological, structural, and catalytic studies, *Russ. J. Phys. Chem. A.*, 97(4), 722-734 (2023) (IF2022/23=0.7)
28. Saiqa Bashir, Muhammad Siddique Awan, **Muhammad Akhyar Farrukh**, Ravi Naidu, Shahzad Akbar Khan, Nagina Rafique, Shaista Ali, Imran Hayat, Imtiaz Hussain, Muhammad Zubair Khan, In-vivo (*Albino Mice*) and in-vitro Assimilation and Toxicity of Zinc Oxide Nanoparticles in Food Materials, *Int. J. Nanomed.*, 17, 4073-4085 (2022) (IF2022=8.0)
29. Aleezay Anjum Ahmed, Zoha Raza Rizvi, Hira Shahzad and **Muhammad Akhyar Farrukh***, Neodymium oxide nanoparticles synthesis using phytochemicals of leaf extracts of different plants as reducing and capping agents: growth mechanism, optical, structural and catalytic properties, *J. Chin. Chem. Soc.*, 69(3), 462-475 (2022). (IF2022=1.8)
30. Nadia Ghaffar, Sumera Javad, **Muhammad Akhyaar Farrukh**, Anis Ali Shah, Mansour K. Gatasheh, Bander M. AL-Munqedhi, Ozair Chaudhry, Metal nanoparticles assisted revival of Streptomycin against MDRS *Staphylococcus aureus*, *PLOS ONE*, 17(3):e0264588, 1-25 (2022). (IF2022=3.7)
31. Aisha Ishtiaq, **Muhammad Akhyar Farrukh***, Atta ur Rehman and Shafqat Karim, Kok-Keong Chong, Facile synthesis of zwitterionic surfactant-assisted molybdenum oxide/reduced graphene oxide nanocomposite with enhanced photocatalytic and antimicrobial activities, *J. Chin. Chem. Soc.*, 69(2), 269-279 (2022). (IF2022=1.8)
32. Iqra Muneer, **Muhammad Akhyar Farrukh***, Structural, optical, photoluminescence, photocatalytic and antifungal features of Gd/Mn₂SnO₄ nanocomposite annealed at different temperatures, *J. Mater. Sci: Mater. Electron.*, 33(3), 1263-1279 (2022). (IF2022=2.8)
33. Isobel J. Simpson, Barbara Barletta, Simone Meinardi, Omar Siraj Aburizaiza, Peter F. DeCarlo, **Muhammad Akhyar Farrukh**, Haider Khwaja, Jinseok Kim, Younha Kim, Arnico Panday, Azhar Siddique, Elizabeth A. Stone, Tao Wang, Jung-Hun Woo, Likun Xue, Robert J. Yokelson, Jahan Zeb, and Donald R. Blake, CFC-11 measurements in China, Nepal, Pakistan, Saudi Arabia, and South Korea (1998-2018): Urban, landfill fire and garbage burning sources, *Environ. Chem.*, 18(8), 370-392 (2021). (IF2021=4.236)
34. Zubaida Khalil, **Muhammad Akhyar Farrukh***, An efficient nanofiltration system containing mixture of rice husk ash and Fe/CeO₂-SiO₂ nanocomposite for the removal of azo dye and pesticide, *Pure Appl. Chem.*, 93(5), 607-621 (2021) (IF2021=2.320)
35. Abid Mahmood, Salaha Zulfikar, Shaista Ali, Umme Ammara, Khalid Mahmood, **Muhammad Akhyar Farrukh**, Zohaib Saeed & Muhammad Ibrahim, Novel Fe₂O₃-CuO-MoO₃ Magnetic Nanocomposite for Photocatalysis of Methylene Blue. *J. Supercond. Nov. Magn.*, 34(7), 1791-1799, (2021) (IF2021=1.675)

36. Iqra Ilyas, Ifra Bashir, **Muhammad Akhyar Farrukh***, Optimization of $\text{Fe}_2\text{O}_3\text{-CeO}_2$ nanocomposite as an efficient catalyst for the synthesis of 2,4,5-triaryl imidazole. *Russ. J. Phys. Chem. A.*, 95(5), 1023-1032 (2021) (IF2021=0.791)
37. Iqra Muneer, **Muhammad Akhyar Farrukh***, Dilawar Ali, Farooq Bashir, Heterogeneous photocatalytic degradation of organic dyes by highly efficient GdCoSnO_3 , *Mater. Sci. Eng: B.*, 265, 115028 (2021). (IF2021=3.407)
38. Fizza Naseem, Yang Zhi, **Muhammad Akhyar Farrukh**, Fayyaz Hussain & Zongyou Yin, Mesoporous $\text{ZnAl}_2\text{Si}_{10}\text{O}_{24}$ nanofertilizers enable high yield of *Oryza sativa* L., *Sci. Rep.*, 10, 10841 (2020) page 1-11 <https://doi.org/10.1038/s41598-020-67611-4> (IF2020=4.379)
39. Iqra Muneer, **Muhammad Akhyar Farrukh***, Rizwan Raza "Influence of annealing temperature on the physical and photoelectric properties of $\text{Gd/Fe}_{1.727}\text{Sn}_{0.205}\text{O}_3$ nanoparticles for solid oxides fuel cell application", *J Sol-Gel Sci Technol.*, 94(1), 89-108 (2020) (IF2020=2.326)
40. I. Aftab, **M. A. Farrukh***, "Formulation of Methotrexate Loaded Polymeric Zn-Nanoparticle An Efficient Anti-Cancer Nano-Drug", *Adv. Clin. Toxicol.*, 5(2), 000186 (2020)
41. Mohsan Bashir, Shaista Ali, and **Muhammad Akhyar Farrukh**, Green synthesis of Fe_2O_3 nanoparticles from orange peel extract and study of its antibacterial activity, *J. Korean Phys. Soc.*, 76(9), 848–854(2020) (IF2020=0.649)
42. **Muhammad Akhyar Farrukh***, Komal Mehmood Butt, Amna Altaf, Sadia Khadim, Influence of pH and temperature on structural, optical and catalytical investigations of $\text{CeO}_2\text{-SiO}_2$ nanoparticles, *Silicon*, 11(6), 2591-2598 (2019) (IF2019=1.499)
43. Nabeela Aslam, **Muhammad Akhyar Farrukh*** and Shafqat Karim, Sensitization of $\text{Sm/SnO}_2\text{-SiO}_2$ nanocomposite with zwitterionic surfactant for enhanced photocatalytic performance under sunlight" *Russ. J. Phys. Chem. A.*, 93(8), 1610-1619 (2019) (IF2019=0.719)
44. Zhengyu Xiao, Fei Zhang, Zhiyong Quan, **Muhammad Akhyar Farrukh**, Rui Wang, Guowei Zhou, and Xiaohong Xu, Perpendicular magnetic anisotropy in compressive strained $\text{La}_{0.67}\text{Sr}_{0.33}\text{MnO}_3$ films, *J. Mater. Sci: Mater. Electron.*, 54(12), 9017-9024 (2019). (IF2019=2.220)
45. **Muhammad Akhyar Farrukh***, Komal Mehmood Butt, Kok-Keong Chong, Wei Sea Chang, Photoluminescence emission behavior on the reduced band gap of Fe doping in $\text{CeO}_2\text{-SiO}_2$ nanocomposite and photophysical properties, *J. Saudi Chem. Soc.*, 23(5), 561-575 (2019). (IF2019=3.517)
46. Dilawar Ali, M. Z. Butt, I. Muneer, **M. A. Farrukh**, M. Aftab, M. Saleem, F. Bashir, A. U. Khan, Synthesis and characterization of sol-gel derived La and Sm doped ZnO thin films: A solar light photo catalyst for methylene blue, *Thin Solid Films*, 679, 86-98 (2019). (IF2019=2.030)
47. Mehwish Iqtedar, Mehral Aslam, **Muhammad Akhyar**, Asma Shehzaad, Roheena Abdullah and Afshan Kaleem, Extracellular biosynthesis, characterization, optimization of silver nanoparticles (AgNPs) using *Bacillus mojavensis* BTCB15 and its antimicrobial activity against multidrug resistant pathogens, *Prep. Biochem. Biotech*, 49(2), 136-142 (2019). (IF2019=1.415)

48. Muhammad Arshad, Mazhar Abbas, Syed Ehtisham-ul-Haque, **Muhammad Akhyar Farrukh**, Abid Ali, Hina Rizvi, Gul Afshan Soomro, Abdul Ghaffar, Muhammad Yameen, Munawar Iqbal, Synthesis and characterization of SiO₂ doped Fe₂O₃ nanoparticles: Photocatalytic and antimicrobial activity evaluation, *J. Mol. Struct.*, 1180, 244-250 (2019) (IF2019=2.463)
49. **Muhammad Akhyar Farrukh**^{*}, Iqra Muneer, Sidra Sharif, Zeeshan Munawar, Nuzhat Batool, Surface modification of La/ SnO₂-TiO₂ nanocomposite via changing the ionic nature of surfactants, *Mater. Res. Express.*, 5(11), 115009 (2018) DOI: <https://doi.org/10.1088/2053-1591/aadbf5>. (IF2018=1.449)
50. Muhammad Usman, and **Akhyar Farrukh, M.** ^{*}, “Formulation of polymeric iron nano-chloroquine phosphate anti-malarial drug via polyol method”, *Mater Today: Proc.*, doi: 10.1016/j.matpr.2018.04.168, 5(7), 15595-15602 (2018).
51. Muhammad Usman, and **Akhyar Farrukh, M.** ^{*}, “Delayed release profile of iron nano-chloroquine phosphate and evaluation of its toxicity”, *Mater Today: Proc.*, doi: 10.1016/j.matpr.2018.04.174, 5(7), 15645-15652 (2018).
52. Sadia Perveen and **Muhammad Akhyar Farrukh**^{*}, Ti_{0.85}Sn_{0.15}O₂ nanocomposite: an efficient semiconductor photocatalyst for degradation of pesticides under solar light, *J. Mater. Sci: Mater. Electron.*, 29(4), 3219-3230 (2018). (IF2018=2.195)
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58. Maryam Allah Ditta, **Muhammad Akhyar Farrukh**^{*}, Shaista Ali, and Naeem Younas, “X-ray Peak Profiling, Optical Parameters and Catalytic Properties of Pure and CdS Doped ZnO–NiO Nanocomposites”, *Russ. J. Appl. Chem.*, 90(1), 151-159 (2017). (IF2017=0.494)
59. Ayesha Imtiaz, and **Muhammad Akhyar Farrukh**^{*}, “Influence of CdS Dopant on Oxygen Vacancies and Ce³⁺ Formation in CeO₂-ZnO Nanocomposites: Structural, Optical and Catalytic Properties” *J. Mater. Sci: Mater. Electron.*, 28(3), 2788-2794 (2017).

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63. Muhammad Arshad, **Muhammad Akhyar Farrukh***, Raja Adil Sarfraz, Abdul Qayyum, Shaista Ali, "Structural characterization of Fe/TiO₂ nanoparticles: antioxidant and antibacterial studies", *Biointerface Res. Appl. Chem.*, 6(5), 1497-1501 (2016) *ISI Index*.
64. Komal Mehmood Butt, **Muhammad Akhyar Farrukh***, and Iqra Muneer, "Influence of lanthanum doping via hydrothermal and reflux methods on the SnO₂-TiO₂ nanoparticles prepared by sol-gel method and their catalytic properties" *J. Mater. Sci: Mater. Electron.*, 27(8), 8493-8498 (2016). (IF2016=2.019)
65. Muhammad Arshad, **Muhammad Akhyar Farrukh***, Sadia Haneef, Nabeela Aslam, Amna Afzaal, "Antibacterial and Antifungal Activities of Zinc-Silicon Oxides Nanocomposite", *Lett. Health. Biol. Sci.* 1(1), 1-5 (2016)
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27. Editor "Proceedings of Symposium of USM Fellowship Holders 2009" published by the Institute of Postgraduate Studies, Universiti Sains Malaysia, Penang Malaysia. pp: 1240, ISBN:978-967-5417-48-2.

(D) Plenary/Keynote/Invited/Guest Speaker

1. Muhammad Akhyar Farrukh, *Keynote Speaker*, "Machine Learning Algorithms for Predicting Band Gaps and Photocatalysis Applications of Graphene–Metal Oxide Nanocomposites, Seminar on "AI and Machine learning in Chemical Catalysis", OIC-COMSTECH Secretariat, Islamabad, 29.09.2026.
2. Muhammad Akhyar Farrukh, *Keynote Speaker*, "Nanodrug Delivery Systems for Enhanced Therapeutic Outcomes in Communicable and Non-Communicable Diseases", International Symposium on Emerging Challenges, Opportunities and Innovations in Biosciences, Department of Pharmaceutical Sciences, Government College University, Lahore, 29 June 2026.
3. Muhammad Akhyar Farrukh, *Keynote Speaker*, "Nanodrug Delivery Systems for Targeted Therapeutics in Infectious and Chronic Diseases", 2nd International Conference on Healthcare Challenges and Innovations in the 21st Century (HCIC 2026), School of Pharmacy, University of Management and Technology (UMT), Lahore, 10-11 June 2026.
4. Muhammad Akhyar Farrukh, *Keynote Speaker*, "Nanomaterials for Sustainable Industrial Applications: Emerging Innovations and Key Challenges" 4th International Chemistry Conference on Emerging Trends in Chemistry, Department of Chemistry, School of Science, University of Management and Technology (UMT), Lahore, 04-06 June 2026.
5. Muhammad Akhyar Farrukh, *Keynote Speaker*, "Nano-Fertilizers and Nano-Clay Solutions for Crop Yield Enhancement and Arid Land Irrigation", 19th International Agri Asia Conference, Lahore Expo Centre, 09-11.05.2026.

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6. Muhammad Akhyar Farrukh, *Guest Speaker*, "AI-Driven Spectroscopic Techniques for Characterizing Metal Oxide Nanocomposites in Catalytic Applications", Department of Chemistry at Government College University Faisalabad (GCUF), 07.05.2026.
7. Muhammad Akhyar Farrukh, *Guest Speaker*, Chemistry Careers: Innovation, Product Development, and Commercialization Challenges, Department of Chemistry, University of Lahore, 04.12.2025
8. Muhammad Akhyar Farrukh, *Invited Speaker*, AI-Driven Molecular Spectroscopy for Characterizing Graphene–Metal Oxide Nanocomposites in Catalytic Applications, International Symposium: Chemistry for a Sustainable Future, Department of Chemistry, Forman Christian College University, Lahore, 18.11.2025.
9. Muhammad Akhyar Farrukh, *Guest Lecture*, AI-Powered Spectroscopic Techniques for Characterization and Applications of Nanocomposites, Department of Chemistry, Quaid-i-Azam University, Islamabad, 05.11.2025.
10. Muhammad Akhyar Farrukh, *Keynote Lecture*, “Sustainable Industrial Applications of Nanomaterials: Innovation Opportunities and Challenges” at the 35th National and 23rd International Chemistry Conference held at Government College University Faisalabad on 21-23 October 2025.
11. Muhammad Akhyar Farrukh, *Guest Lecture*, Chemistry Careers: Navigating Beyond the Lab, Department of Chemistry, Lahore Garrison University, 27 May 2025.
12. Muhammad Akhyar Farrukh, *Keynote Lecture*, Innovating Sustainable Nanodrug Delivery Systems for Targeted Therapeutics in Infectious and Chronic Diseases, 15th International Biennial Conference of Pakistan Society for Microbiology (FIBC-PSM-2025), Quaid-i-Azam University, Islamabad, April 15-18, 2025
13. Muhammad Akhyar Farrukh, *Keynote Lecture*, Machine Learning Algorithms for Predicting Band Gaps and Photocatalysis Applications of Semiconductor Nanomaterials, International Conference on Nanoscience and Nanotechnology (ICONN 2025), School of Chemical and Materials Engineering (SCME), National University of Sciences and Technology (NUST), April 14-15, 2025
14. Muhammad Akhyar Farrukh, *Keynote Lecture*, AI-Driven Molecular Spectroscopy for Characterizing Graphene-Metal Oxide Nanocomposites, 3rd International Chemistry Conference on Emerging Trends in Chemistry (3rd CCUMT), University of Management and Technology, April 10-12, 2025
15. Muhammad Akhyar Farrukh, *Keynote Lecture*, The Role of Machine Learning in Advanced Characterization of Graphene-Metal Oxide Nanocomposites, 3rd International Conference on Science, Technology and Innovation, ORIC - Kinnaird College for Women, Lahore, February 18-20, 2025
16. Muhammad Akhyar Farrukh, *Invited Lecture*, The Role of Machine Learning in Advanced Characterization of Graphene-Metal Oxide Nanocomposites, 4th International Conference on Chemical and Pharmaceutical Sciences: Innovation to Commercialization, Forman Christian College (A Chartered University), Lahore, Pakistan, January 22-24, 2025
17. Muhammad Akhyar Farrukh, *Plenary Lecture*, Sustainable Graphene-Based Nanomaterials for Environmental Solutions, 4th International Conference on Recent

Advances in Interdisciplinary Sciences, Department of Chemistry, GC Women University Faisalabad, 4-6 December-2024

18. Muhammad Akhyar Farrukh, *Plenary Lecture*, Industrial Applications of Nanomaterials, Innovation Opportunities and Challenges, 2nd International Conference on Emerging Horizons in Science and Technology (ICEHST), Faculty of Science and Technology, UCP Lahore, 21-22 NOVEMBER 2024.
19. Muhammad Akhyar Farrukh, *Keynote Lecture*, Innovation Opportunities and Industrial Applications of Nanomaterials, International Conference on Nanotechnology and Natural Products (ICNNP), Department of Chemistry, UET Lahore, 18 NOVEMBER 2024.
20. Muhammad Akhyar Farrukh, *Keynote Speaker*, Advancing Sustainable Graphene-Based Nanomaterials for Environmental Solutions, 6th International Symposium on Materials, Electrochemistry and Environment (CIMEE24), Lebanese University, **Lebanon**, 24 to 26 October 2024.
21. Muhammad Akhyar Farrukh, *Plenary Lecture*, Training machine learning models with molecular spectroscopy data for analysis and applications of graphene-based metal oxide nanocomposites, 3rd International Conference on Trends and Research in Chemistry TRIC-2024, Department of Chemistry, University of Education, Lahore, November 06-07, 2024.
22. Muhammad Akhyar Farrukh, *Invited Lecture*, Molecular spectroscopy in developing artificial intelligence integrated analysis of graphene-based metal oxides nanomaterials in environmental/marine applications, Key Laboratory of Marine Chemistry Theory and Technology, Ministry of Education, College of Chemistry and Chemical Engineering, Ocean University of China, Qingdao, **China**, July 12, 2024
23. Muhammad Akhyar Farrukh, *Invited Lecture*, Molecular spectroscopy in developing artificial intelligence integrated analysis and applications of graphene-based metal oxides semiconductor nanocomposites, School of Physics, Henan Normal University, Xinxiang, **China**, July 10, 2024
24. Muhammad Akhyar Farrukh, *Invited Lecture*, Innovation opportunities and challenges in commercialization of nanomaterials, One-day Symposium on Commercial Potential and Societal Impact of Nanotechnology, Jointly organized by NIBGE (Faisalabad), Pakistan Nuclear Society (PNS) and National Centre of Physics (NCP), at Islamabad, May 08, 2024.
25. Muhammad Akhyar Farrukh, *Invited Lecture*, Innovating Sustainable Nanodrug Formulation Strategies to Tackle Infectious and Chronic Diseases, Colloquium on Nano-biotechnology in the Real World, Department of Biotechnology, Lahore University of Biological & Applied Sciences, Lahore, April 30, 2024
26. Muhammad Akhyar Farrukh, *Plenary Speaker*, Molecular spectroscopy in developing artificial intelligence integrated analysis and applications of graphene-based metal oxides nanocomposites, International Conference on Material Chemistry and Industrial Technologies (MCIT), Department of Chemistry, The University of Lahore, Lahore, April 24-25, 2024
27. Muhammad Akhyar Farrukh, *Keynote Speaker*, Nano-liposomal drugs formulations for communicable and non-communicable diseases, 6th International Conference on Advances in Biosciences (ICABS-2024), Biological Society of Pakistan, GC University Lahore, 18-19 April 2024.

28. Muhammad Akhyar Farrukh, *Keynote Speaker*, Molecular spectroscopy in developing artificial intelligence integrated analysis and applications of nanomaterials, 4th iiScience Int'l Conference 2024 "Recent Advances in Photonics & Physical Sciences, Department of Physics, Lahore College for Women University, Lahore, April 16-18, 2024.
29. Muhammad Akhyar Farrukh, *Keynote Speaker*, Sustainable approaches in nanodrugs formulation for infectious and chronic diseases, Symposium on Sustainable Chemistry, Department of Chemistry, Lahore College for Women University, Lahore, April 16, 2024.
30. Muhammad Akhyar Farrukh, *Keynote Speaker*, Nano-drugs formulations for communicable and non-communicable diseases, 2nd International conference on Green and Sustainable Environment (ICGSE 2024), Department of Environmental Sciences, Sindh Madressatul Islam University, Karachi, Pakistan, 28-29 February 2024.
31. Muhammad Akhyar Farrukh, *Keynote Speaker*, Nano-drugs formulations for communicable and non-communicable diseases, International Symposium on Nanobiology: Integrating Nanotechnology & Microbiology for a Sustainable Future, Institute of Microbiology, Government College University Faisalabad, Punjab, Pakistan, 28-29 February 2024
32. Muhammad Akhyar Farrukh, *Keynote Speaker*, Green synthesis of graphene-based metal oxides nanomaterials and their environmental applications, International Symposium on Environmental Applications of Carbon Based Nanomaterials, Department of Environmental Sciences, Forman Christian College (A Chartered University), Lahore, 13th December 2023.
33. Muhammad Akhyar Farrukh, *STEM Advantage+ Speaker*, The Power of Chemistry in Advancing our Daily Lives with Nanomaterials, STEMx, National STEM School™, Pakistan Innovation Foundation, November 28, 2023.
34. Muhammad Akhyar Farrukh, *Keynote/Guest Speaker*, Synthesis and Photocatalysis Applications of Semiconductor Nanomaterials (online), at International Symposium on Frontiers of Condensed Matter Physics and Excited Dynamics of Semiconductor Photocatalysis, School of Physics, Henan Normal University, Xinxiang, **China**, September 01, 2023.
35. Muhammad Akhyar Farrukh, *Keynote/Guest Speaker*, Molecular spectroscopy in nanomaterials characterization to develop AI-integrated analysis and applications, at Shandong University of Science and Technology, Qingdao, **China**, under Pakistan Science Foundation (PSF) and National Natural Science Foundation of China (NSFC) Joint Scientific Exchange Program-JSEP: August 14-21, 2023.
36. Muhammad Akhyar Farrukh, *Keynote Speaker*, Applications of nanomaterials and nano-fertilizers for high crop yield and sustainable environment, 2023 Natural Sciences Symposium, Directorate of ORIC and Faculty of Sciences, University of Sahiwal, Sahiwal, May 30, 2023.
37. Muhammad Akhyar Farrukh, *Keynote Speaker*, Slow-release nano-fertilizers using mesoporous metals aluminosilicates for high rice crop yield, 2nd International Conference Trends and Research in Chemistry TRIC-2023, Department of Chemistry, University of Education, Lahore, May 16-18, 2023.

38. Muhammad Akhyar Farrukh, *Keynote Speaker*, Green synthesis of graphene-based nanomaterials and their environmental applications, 1st International conference on Green and Sustainable Environment (ICGSE-2023), Sindh Madressatul Islam University, Karachi, March 08-09, 2023
39. Muhammad Akhyar Farrukh, *Keynote Speaker*, Green synthesis of metals and metal oxides doped graphene derivatives nanomaterials for wastewater treatment, 2nd International Conference on Energy, Power, Environment, Control, and Computing (ICEPECC-2023), Faculty of Engineering and Technology, University of Gujrat, March 08-09, 2023.
40. Muhammad Akhyar Farrukh, *Keynote Invited Speaker*, Slow-Release Nano-Fertilizers for High Rice Crop Yield, 20th International and 32nd National Chemistry Conference, at Khawaja Farid University of Engineering & Information Technology, Rahim Yar Khan, November 2-4, 2022.
41. Muhammad Akhyar Farrukh, *Invited/Guest Speaker*, Slow-Release Nano-Fertilizers for High Crop Yield and Sustainable Environment, National Conference on Efficient Integrated Nutrients Management Technologies for Enhancing Wheat Productivity in Pakistan at NARC, Park Road, Islamabad, September 6-7, 2022.
42. Muhammad Akhyar Farrukh, *Invited/Guest Speaker*, Synthesis, chemical and biological applications of metal oxides nanocomposites doped graphene derivatives, 17th JKSA Webinar Series on Chemistry, Department of Chemistry, Faculty of Sciences and Mathematics, Diponegoro University, **Indonesia**, June 08, 2022.
43. Muhammad Akhyar Farrukh, *Invited/Guest Speaker*, Applications and optimization of reaction parameters for the synthesis of nanomaterials, Seminar organized by Department of Chemistry, Kinnaid College for Women, Lahore, May 30, 2022.
44. Muhammad Akhyar Farrukh, *Invited/Guest Speaker*, Functionalization of nanomaterials and their applications, Seminar organized by Department of Chemistry, Govt. Graduate College for Women, Gulberg, Lahore, May 27, 2022.
45. Muhammad Akhyar Farrukh, *Invited Speaker*, Methods development for the synthesis of metal oxides nanocomposites doped graphene derivatives and their chemical and biomedical applications, International Conference on Chemical and Material Sciences (ICCMS-2022), Department of Chemistry, The University of Lahore, Lahore, May 21, 2022.
46. Muhammad Akhyar Farrukh, *Invited/Guest Speaker*, Entrepreneurship and Protection of Intellectual Property Rights: Filing, Process, Prosecution of Patents, Seminar organized by Department of Chemistry, Government College Women University, Sialkot, March 21, 2022.
47. Muhammad Akhyar Farrukh, *Invited Speaker*, Chemical and green synthesis of metal oxides nanocomposites doped graphene derivatives and their chemical and biomedical applications, 1st International Conference (Online) Trends and Research in Chemistry (TRIC-2022), Department of Chemistry, Division of Science and Technology, University of Education, Lahore, January 18-19, 2022
48. Muhammad Akhyar Farrukh, *Invited Speaker*, Methods development and potential applications of graphene and metal oxides based nanocomposites, “19th International & 31st National Conference on Emerging Trends in Chemistry (2nd CCUMT 2021)” at

Department of Chemistry, at University of Management and Technology, Lahore, December 16-18, 2021.

49. Muhammad Akhyar Farrukh, *Facilitator/Invited Speaker*, Protection of Intellectual Property Filing, Process and Prosecution of Patents, Session organized by Office of Research Innovation and Commercialization (ORIC), University of Management and Technology, Lahore, October 12, 2021.
50. Muhammad Akhyar Farrukh, *Panellist/Invited Speaker*, Opportunities and Challenges in Nano-Materials, at Innovator Seed Fund's Webinar on Challenges and Innovation Opportunities in the Emerging Technologies Sectors, Higher Education Commission (HEC), Islamabad, September 30, 2021.
51. Muhammad Akhyar Farrukh, *Invited Speaker*, Methods development for the synthesis of metal oxides/reduced graphene oxide nanocomposites and their applications, The 4th International Conference on Material Strength and Applied Mechanics (MSAM 2021), August 16-19, 2021, **China**.
52. Muhammad Akhyar Farrukh, *Invited Speaker*, Graphene based metal oxides nanocomposites and their potential applications, The 10th Global Conference on Materials Science and Engineering (CMSE 2021), August 1-4, 2021, Pisarenko Institute for Problems of Strength, National Academy of Sciences of Ukraine, **Ukraine**.
53. Muhammad Akhyar Farrukh, *Keynote Speaker*, Reduced graphene oxide based metal oxides functional nanomaterials and their potential applications, Advanced Materials and Green Energy Conference (AMGEC), February 4-7, 2021, Research and Technology Centre of Energy, **Tunisia**.
54. Muhammad Akhyar Farrukh, *Invited Speaker*, Metal oxides doped graphene oxide nanocomposites and their applications, 2nd International Conference on Graphene and Novel Nanomaterials, November 1-4, 2020, NCP-NRU Joint International Research Center on Advanced Nanomaterials and Defects Engineering, National Centre for Physics (NCP) Islamabad Pakistan & Northwestern Polytechnical University (NPU), **China**.
55. Muhammad Akhyar Farrukh, *Invited Speaker*, Optimization parameters for synthesis and applications of metal oxides nano-materials, 3rd International Chemistry Conference (ICC) Virtual, on Innovative Challenges and prospects in the field of Molecular and Chemical Sciences, September 21-22, 2020, Department of Chemistry, Lahore Garrison University, Lahore.
56. Muhammad Akhyar Farrukh, *Keynote Speaker*, Facile synthesis of nanocomposites and their environmental applications, Third International Symposium on Materials, Electrochemistry and Environment "CIMEE20". scheduled from on 17-19 September 2020, Lebanese University, **Lebanon**.
57. Muhammad Akhyar Farrukh, *Invited Panel Speaker* on Nano-Products and Industrial Applications of Nano-Materials, workshop on Industry-Academia Collaboration for Identification of Industrial and Medical Solutions through Discovery of New Materials", Organized by Higher Education Commission (HEC) under the banner of Technology Transfer Support Fund (TTSF), 5-7 PM, 14 September 2020.
58. Muhammad Akhyar Farrukh, *Keynote Speaker*, Synthesis of multinary metal oxides nanocomposites and their chemical and biochemical applications, The Virtual Conference

on Chemistry and its Applications (VCCA-2020), held from 1st to 31st August 2020 at Department of Chemistry, Faculty of Science, University of Mauritius, **Mauritius**.

59. Muhammad Akhyar Farrukh, *Invited Speaker*, Nano-drugs development for communicable and non-communicable diseases, 3rd International Conference on “Chemical and Pharmaceutical Sciences: New Trends in Medicinal & Pharmaceutical Chemistry” held on January 29-31, 2020 at the Forman Christian College (A Chartered University), Lahore, Pakistan.
60. Muhammad Akhyar Farrukh, *Invited Speaker*, Formulation of nanobiomaterials and their sustained release profile with polymeric metal nanoparticles, “30th National & 18th International Chemistry Conference on Recent Trends in Chemistry-CCUMT-2019” at Department of Chemistry, at University of Management and Technology, Lahore, November 27-29, 2019.
61. Muhammad Akhyar Farrukh, *Invited Speaker*, Applications of multinary metal oxides nanocomposites, 2nd International Conference on Nanoscience & Nanotechnology, Lahore University of Management Sciences (LUMS), 1-2 November, 2019.
62. Muhammad Akhyar Farrukh, *Invited Speaker*, Nano-materials connecting basic science with global health, Workshop on “New Voices in Global Health: The (Dis)connection between Science and Global Health” at **World Health Summit** 2019, Kosmos, Karl-Marx-Allee, Berlin, **Germany**, 27-29 October, 2019.
63. Muhammad Akhyar Farrukh, *Invited Speaker*, Sustained-release anticancer, antimalarial and antibiotic nanodrugs, One Day Symposium on Nanomedicine: Current Scenario and Future Perspectives, Institute of Pharmacy, Physiology and Pharmacology, University of Agriculture Faisalabad, 06 August, 2019.
64. Muhammad Akhyar Farrukh, *Invited Speaker*, One Day Seminar on “Innovation in Nano-Chemistry” at Department of Chemistry, Division of Science & Technology, University of Education, Township Campus, Lahore, 17 April, 2019 .
65. Muhammad Akhyar Farrukh, *Resource Person*, Workshop on Nanotechnology and its Various Aspects, 1st International Conference on Science, Technology and Innovation, Kinnaird College for Women, 2-4 April 2019.
66. Muhammad Akhyar Farrukh, Nano-Biomaterials Based Therapy Approaches, *Keynote Speaker*, 12th International Biennial Conference of Pakistan Society for Microbiology (PSM) at Abbottabad University of Science and Technology, Abbottabad, Pakistan, 20-22 February, 2019.
67. Muhammad Akhyar Farrukh, Intellectual Property Rights: Filing of Patents (Pakistan-US), *Guest Speaker*, Virtual University of Pakistan, Lahore, 08 February 2019.
68. Muhammad Akhyar Farrukh, Nano-Materials Fabrications and their scope in industries as nano-catalysts, nano-filtration, nano-fertilizers, nano-drugs, nano-forensics, nano-toxicity, *Invited Speaker*, Three-Day Conference on “*Nanomaterials: New Trends in Development and Applications*” at Forman Christian College (A Chartered University), Lahore, Pakistan, 29- 31 January, 2019.
69. Muhammad Akhyar Farrukh, Enhanced catalytic efficiencies of multinary metal oxides nanocomposites, *Invited Speaker*, Frontiers of Nanotechnology Applications in Pakistan:

Present Scenario and Future Avenues at National Institute for Biotechnology & Genetic Engineering, (NIBGE), Faisalabad, October 24, 2018.

70. Muhammad Akhyar Farrukh, Surfactant and solvent assisted synthesis of multinary metal oxides nanocomposites and their applications, *Invited Speaker*, International Conference on Modern Trends in Chemistry and Energy Technologies, Department of Chemistry, Pharmacy and Energy Research Center, COMSATS University Islamabad, Lahore campus, The Nishat Hotel, Lahore, October 23, 2018.
71. Muhammad Akhyar Farrukh, Nano-Chemistry: Multidisciplinary Science, *Inaugural Keynote Speaker*, 02nd AIOU National Graduate Conference organized by Office of Research Innovation & Commercialization (ORIC) at Allama Iqbal Open University (AIOU), Islamabad, August 28-29, 2018.
72. Muhammad Akhyar Farrukh, Development in Nanoscience and Nanotechnology with special reference to metal/metal-oxides nanoparticles, , *Invited Speaker*, One Day Seminar on Nano-Chemistry, at Department of Chemistry, Government College Women University, Sialkot, 13 April 2018.
73. Muhammad Akhyar Farrukh, Recent developments in quaternary metal oxides nanocomposites: synthesis and applications, *Invited Speaker*, 6th International Conference on Education (ICE), (Science Beyond Classroom), at University of Education, Bank Road Campus, Lahore, March 15-17, 2018.
74. Muhammad Akhyar Farrukh, Recent Developments in Binary, Ternary and Quaternary Metal Oxides Nanocomposites: Synthesis and Applications, *Keynote Speaker*, Fourth International Conference on Frontiers of Advanced Engineering Materials (FAEM-18), at Pakistan Council of Scientific and Industrial Research, Lahore, February 19-20, 2018.
75. Muhammad Akhyar Farrukh, Industrial Application of Nanomaterials, *Keynote Speaker*, International Chemistry Conference for the Promotion of University-Industry Linkage at Department of Chemistry, GC University Lahore, January 24-26, 2018.
76. Muhammad Akhyar Farrukh, Recent Trends in Nano-Chemistry as an Emerging Field of Research, *Invited Speaker*, National Symposium on Current Trends in Chemistry, at Lahore College for Women University 12 January 2018.
77. Muhammad Akhyar Farrukh, Kinetics and Thermodynamics properties of zwitterionic surfactant assisted synthesis of Fe/SnO₂-SiO₂ nanocomposite with enhanced photocatalytic activity under sun light, *Invited Speaker*, 3rd International Conference on "Recent Trends in Chemistry" 2017 at Department of Chemistry, Allama Iqbal Open University, Islamabad, 23-24 November 2017.
78. Muhammad Akhyar Farrukh, Photocatalysis with quaternary metal oxides nanoparticles: chemical ways to change band gap, *Invited Speaker*, 2nd International Conference on Impact of Nanoscience on Energy Technologies (NanoSET-2017) at COMSATS Institute of Information Technology, Lahore, 25-27 October, 2017.
79. Muhammad Akhyar Farrukh, Synthesis and Applications of Nanomaterials, Two-Day workshop on Nanomaterials Research, *Plenary Lecture*, Fabrications and Applications, at Department of Chemistry, Hazara University, Mansehra, 12-13 October 2017.
80. Muhammad Akhyar Farrukh, Heterogeneous photocatalyst containing ternary metal oxides nanocomposite for degradation of pesticides, *Invited Speaker*, 2nd UICPAS-2017 (UMT

- International Conference on Pure and Applied Sciences), at University of Management and Technology, Lahore, 05-07 October 2017.
81. Muhammad Akhyar Farrukh, Development in Nanocomposites Containing p-block, d-block and f-block Elements, *Invited Speaker*, Symposium on “FUN-Materials in Applied Chemistry and Catalysis” at Department of Chemistry, University of Engineering and Technology Lahore May 08, 2017.
 82. Muhammad Akhyar Farrukh, Nano-based therapy approaches using nano-enabled antibiotics, *Keynote Speaker*, International Conference/Workshop on Nanotechnology and Nanomedicine, Inter-Islamic Network on Nanotechnology (INN) Secretariat, Materials and Energy Research Centre (MERC), May 02-03, 2017, Meshkindasht, Alborz, **Iran**.
 83. Muhammad Akhyar Farrukh, Nanotechnology: A New Paradigm for Integrating Scientists across Disciplines towards Sustainable Development, *Invited Speaker*, 1st international conference of women in science and international networking: bridging the gender gap in STEM in favor of sustainable development, organized by Egyptian Academy of Scientific Research and Technology (ASRT), Ramses Hilton, 21-23 March 2017, Cario, **Egypt**.
 84. Muhammad Akhyar Farrukh, Nano-Chemistry: an Emerging Field of Research and Scope for Chemists, *Invited Speaker*, One Day Seminar at Chemistry Department Govt. Sadiq College Women University Bahawalpur, 17 February 2017.
 85. Muhammad Akhyar Farrukh, Properties and Current Applications of Nanomaterials, *Invited Speaker*, One Day Seminar at Chemistry Department Govt. Sadiq College Women University Bahawalpur, 17 February 2017.
 86. Muhammad Akhyar Farrukh, Research Methodology, Writing Research Papers and Research Grants, , *Invited Speaker*, One Day Seminar at Chemistry Department Govt. Sadiq College Women University Bahawalpur, 17 February 2017.
 87. Muhammad Akhyar Farrukh, Synthesis and Applications of Nanotechnology in Fertilizer, Chemical and Pharmaceutical Industries, *Resource Person/Invited Speaker*, COMSTECH International Workshop on “Nanosciences: Education and its Industrial Applications” at Ministerial Standing Committee on Scientific and Technological Cooperation of the OIC (Organization of Islamic Cooperation) COMSTECH, Islamabad, December 13-15, 2016.
 88. Muhammad Akhyar Farrukh, Slow Release Nano-Fertilizers, at Fauji Fertilizer Company Ltd., Rawalpindi, November 29, 2016
 89. Muhammad Akhyar Farrukh, Ternary metal oxides nanocomposites: their structural, optical, catalytic and thermodynamic properties, *Keynote Speaker*, 8th Chemistry Conference 2016 on Chemistry in Engineering and Life Sciences, at PINSTECH, November 28-30, 2016. pp20-21.
 90. Muhammad Akhyar Farrukh, Formulation of nano-antibiotics: evaluation of antibacterial and in-vitro release studies, *Invited Speaker*, Symposium on Nanotechnology Research in Pakistan, National Institute for Biotechnology and Genetic Engineering (NIBGE), Faisalabad, November 09, 2016.
 91. Muhammad Akhyar Farrukh, Quaternary Rare Earth-Transition Metals Oxides Nanoparticles: Synthesis and Applications, *Invited Speaker*, International Conference on Nanoscience and Nanotechnology (ICNN-2016) at Kharazmi University, Karaj, **Iran**, 26-28 October 2016 (Sponsored by INS, Iran).

92. Muhammad Akhyar Farrukh, Development and applications in nanotechnology with special reference to metal oxides nanoparticles, *Plenary Speaker*, Symposium on Prospects of Modern Chemical Sciences in Pakistan, Department of Chemistry, Government Postgraduate Islamia College Gujranwala, 22.10.2016.
93. Muhammad Akhyar Farrukh, Evaluation of optical, catalytic and thermodynamic properties of metal oxides nanocomposites, *Invited/Keynote Speaker*, 27th National 15th International Chemistry Conference, Department of Chemistry, University of Malakand, 24.8.2016.
94. Muhammad Akhyar Farrukh, Ternary Metal Oxides Nanoparticles, *Invited Speaker*, Symposium on "Functional Nanomaterials for Catalysis and Energy Conversion" Department of Chemistry, University of Engineering and Technology, Lahore, 16.05.2016.
95. Muhammad Akhyar Farrukh, Nano-Fertilizer: Slow Release Nitrogen Fertilizer with Nano-Leucite, *Invited Speaker*, 4th International Conference on Slow- and Controlled-Release and Stabilized Fertilisers (SCRSFs), organized by New Ag International and International Fertilizer Industries Association, China World Hotel, Beijing, **China**, 4- 6, April 2016 (Sponsored by Kengenta).
96. Muhammad Akhyar Farrukh, Characterization of rare earth metals doped metals oxide nanoparticles through advanced analytical techniques and their applications in solving environmental problems, *Invited Speaker*, 11th International Symposium on Analytical and Environmental Chemistry (ISAEC-2016), National Centre of Excellence in Analytical Chemistry, University of Sindh, Jamshoro, March 07-08, 2016
97. Muhammad Akhyar Farrukh, Synthesis of multi-metal oxides nanoparticles and their environmental applications, *Invited Speaker*, Fourth International Conference on Environmental Horizon (ICEH 2016), Department of Chemistry, University of Karachi, January 08-10, 2016.
98. Muhammad Akhyar Farrukh, Recent developments in metal oxides nanoparticles and their applications, *Invited Speaker*, Symposium on Nanotechnology in Pakistan; Recent Trends & Developments, National Institute for Biotechnology and Genetic Engineering (NIBGE), Faisalabad, December 16, 2015.
99. Muhammad Akhyar Farrukh, Influence of dielectric constant on the optical properties and particle size of La/ SnO₂-TiO₂ nanoparticles, *Invited Speaker*, International Conference on Solid State Physics, 2015 (ICSSP'15) Centre of Excellence in Solid State Physics, University of the Punjab, December 13-17, 2015
100. Muhammad Akhyar Farrukh, Multi metal oxides nanoparticles and their multi applications, *Plenary Speaker*, 2nd Conference on Frontiers of Nanoscience and Nanotechnology at PINSTECH on September 08-10, 2015.
101. Muhammad Akhyar Farrukh, Synthesis of nanomaterials: wastewater treatment and health hazard effect, *Invited Talk*, Third International Conference on Environmental Horizon (ICEH 2015), Department of Chemistry, University of Karachi, 9-11 January 2015.
102. Muhammad Akhyar Farrukh, Synthesis of Magnetic Nanopowder for the Development of Latent Fingermarks, *Invited Speaker*, 1st international conference on forensic science and justice, GC University Lahore, 22-24 October 2014.

103. Muhammad Akhyar Farrukh, Development of metal oxides nanoparticles for their applications in environment, green fertilizer, forensics and their health hazards effects, *Plenary Speaker*, Conference on Frontiers of Nanoscience and Nanotechnology at PINSTECH on June 03-05, 2014.
104. Muhammad Akhyar Farrukh, Development of metal oxides nanocomposites for their applications to overcome environmental issues, *Invited Lecture* at Chemical Trends 2013, Lahore University of Management Sciences (LUMS), 27 September 2013.
105. Muhammad Akhyar Farrukh, Air Pollution Control over Nano-catalysts, at Three days workshop on Environmental Pollution and Its Health Impact, GC University Lahore, 31 December 2012.
106. Muhammad Akhyar Farrukh, Nano-Forensics: Application of nanotechnology in forensic science, *Invited Lecture* at Chemistry Week of Dunnicliff Chemical Society, 27 December 2011.
107. Introduction to Nanomaterials, *Invited Lecture* at International Workshop on Crystallography and Nanomaterials, Department of Chemistry, GC University Lahore, 19-21 October 2011.
108. Muhammad Akhyar Farrukh, How to manage and annotate the scientific paper collections, *Invited Lecture* at Inter Universities Poster Competition, GC University Lahore, 12 September 2011. Sponsored by Mendeley.
109. Muhammad Akhyar Farrukh, One day workshop, *Invited Lecture* on “Teaching Advanced Chemistry” for faculty members, Government College for Women, Satellite Town, Gujranwala, 12 July 2011.
110. Muhammad Akhyar Farrukh, One day workshop, *Invited Lecture* on “Teaching Skills in Chemistry” for faculty members, Government College for Women, Satellite Town, Gujranwala, 6 July 2011.
111. Muhammad Akhyar Farrukh, *Invited Lecture* on Research Guidance to M.Sc (Chemistry) Research Students, Government Islamia College, Gujranwala, 12 March 2011.
112. Muhammad Akhyar Farrukh, Workshop on Development and Analysis of Non-Ferrous Alloys, *Invited Lecture* on “Chemistry of Non-Ferrous Alloys”, Centre of Advanced Studies Centre (CASP), GC University, Lahore, 14 October, 2010.
113. Muhammad Akhyar Farrukh, *Invited Lecture* on “Selection of electrolytes for the synthesis of metal oxides nanoparticles by anodizing process”, at School of Chemical Sciences, USM, **Malaysia**, 06 August 2009.

(E) Papers presented in International Conferences / Symposiums / Seminars

1. Muhammad Akhyar Farrukh, Presentation “SDG-impact Projects through Research” at Global Liberal Arts Alliance (GLAA) Conference: Humanitarian Innovation & Entrepreneurship: SDG Impact through Service-Learning at Lingnan University, **Hong Kong**, 16-17 December, 2019. Live stream from CLT, FCCU.

2. Muhammad Akhyar Farrukh, Water4life - Global Solution for Water Quality, 48th IUPAC General Assembly, World Chemistry Leadership Meeting, 12 August 2015, Busan, **Korea**.
3. Muhammad Akhyar Farrukh, Influence of particle size on the optical and catalytic properties of multi-metal oxides nanoparticles, 45th IUPAC World Chemistry Congress, 9-14 August 2015, Busan, **Korea**. (*Travel Award by IUPAC*)
4. Muhammad Akhyar Farrukh, Catalytic properties of Sm doped SnO₂/TiO₂ nanoparticles for the waste water treatment, Third International Conference on Water, Energy and Environment (ICWEE 2015), American University of Sharjah, March 24-26, 2015, United Arab Emirates, **Sharjah**. (*Travel Award by HEC*)
5. B Barletta, I J Simpson, N J Blake, S Meinardi, O S Aburizaiza, A Siddique, J Zeb, L E Yu, H A Khwaja, **M A Farrukh**, D R Blake, *POSTER* A13C-3173 Characterization of Nonmethane Hydrocarbons at Three Urban Sites in Western Saudi Arabia, in Lahore (Pakistan), and in Singapore, American Geophysical Union (AGU) Fall Meeting, 15-19 December 2014, San Francisco, **USA**.
6. M. Akhyar Farrukh, Micelle Controlled Synthesis of Alumina Supported Calcium Oxide Nanocatalysts and their Applications in Photodegradation of Industrial Pollutants, 44th IUPAC World Chemistry Congress, 11-16 August 2013, Istanbul, **Turkey**. (*Travel Award by HEC*)
7. M. Akhyar Farrukh, Solvent controlled synthesis of tin oxide nanocatalysts and their applications in photodegradation of environmental hazardous materials, 3rd ISESCO International Workshop and Conference on Nanotechnology 2012 (IWCN2012), 05-07 December 2012, Universiti Kebangsaan Malaysia, Selangor, **Malaysia**. (*Travel Award by HEC*)
8. M. Akhyar Farrukh, Reduction of organic pollutants by supported gold nanoparticles, BioVisionAlexandria.NXT 2012 Conference, 21-25 April 2012, Bibliotheca Alexandrina, Alexandria, **Egypt**. (*Selected Top 10 presentation*). (*Travel Award by TWAS and Alexandria Library*)
9. M. Akhyar Farrukh, Influence of 1-amino-9-octadecene surfactant on the synthesis and properties of tin oxide nanoparticles, 3rd Penang International Conference for Young Chemists (Penang ICYC) 23-25 June 2010, Copthorne Orchid Hotel, Penang, **Malaysia**.
10. M. Akhyar Farrukh, Preparation and characterization of alumina supported gold nanoparticles and its application in the reduction of *p*-nitrophenol, 3rd Penang International Conference for Young Chemists (Penang ICYC) 23-25 June 2010, Copthorne Orchid Hotel, Penang, **Malaysia**.
11. M. Akhyar Farrukh, Nanotechnology for Sustainable Environment, BioVisionAlexandria 2010, 11-15 April 2010, Alexandria, **Egypt**. (*Travel Award by Alexandria Library*)
12. M. Akhyar Farrukh, Effect of Surfactants on Synthesis of SnO₂ Nanoparticles, (MAT15) School of Chemical Sciences, Research Colloquium 2009, 2-3 November 2009, Bayview Hotel, Penang, **Malaysia**.
13. M. Akhyar Farrukh, Mechanism of Hydrolysis of Benzoic Anhydride in Sulfobetaine Micelles, (P704_002) 42nd IUPAC Congress, 2-7 August 2009, Glasgow, Scotland, **UK**.

14. M. Akhyar Farrukh, "Science and Technology Governance in Pakistan" on 13th November 2008 at UNU-MERIT, Maastricht University, Maastricht, **The Netherlands**. (*Travel Award by UN*).
15. M. Akhyar Farrukh, "Anions Binding to Micelles and Effect of Sulfobetaine Micelles in Nucleophilic Reactions" 10th Young Scientists Conference on Chemistry, 27-29 March 2008, Rostock, **Germany**. (*Travel Award by PSF*)
16. M. Akhyar Farrukh, "A new model for incorporation of iodide ion in zwitterionic micelles and reactions with methyl naphthalene-2-sulfonate", 41st IUPAC World Chemistry Congress, 5-11 August 2007, Torino, **Italy**. (*Travel Award by IUPAC*)
17. M. Akhyar Farrukh, "Reactions of Lauryl hydroxamic acid with Bis-(2,4-dinitrophenyl) Phosphate in presence of Zwitterionic, and anionic micelles" Seminar at Departamento de Química, Universidade Federal de Santa Catarina, Florianópolis, December 14, 2006, **Brazil**.
18. M. Akhyar Farrukh, "Incorporation of anions in Zwitterionic sulfobetaine micelles" Seminar at Departamento de Química, Universidade Federal de Santa Catarina, Florianópolis, June 26, 2006, **Brazil**.
19. M. Akhyar Farrukh, "Facilitate the emergence and sharing of scientific knowledge to reduce the gap between developed and less developed countries" 1st General Conference of World Academy of Young Scientists (WAYS), 11-13 December 2004, at Marrakech, **Morocco**. (*Travel Award by UNESCO*)

(F) Papers presented in National Conferences / Symposiums / Seminars

1. Muhammad Akhyar Farrukh, *Oral Presentation*, Nano Ag-Antibacterial Hand Sanitizer, Forman International Conference on Business and Innovation, School of Management, Forman Christian College (A Chartered University), March 02-03, 2022.
2. Muhammad Akhyar Farrukh, *Oral Presentation*, Nano Ag-Antibacterial Herbal Hand Wash, Forman International Conference on Business and Innovation, School of Management, Forman Christian College (A Chartered University), March 02-03, 2022
3. Iqra Muneer, Muhammad Akhyar Farrukh, Rizwan Raza, Effect of calcination temperature on structural, optical and electrical properties of Gadolinium doped tin oxide-iron oxide, Fourth International Conference on Frontiers of Advanced Engineering Materials (FAEM-18), at Pakistan Council of Scientific and Industrial Research, Lahore, February 19-20, 2018. Pp32-33.
4. Shaista Ali and Muhammad Akhyar Farrukh, Determination of optical parameters and X-ray peak profile analysis and MoO₃ Nanoparticles, 8th Chemistry Conference 2016 on Chemistry in Engineering and Life Sciences, at PINSTECH, November 28-30, 2016. Pp23.
5. Muhammad Usman, Muhammad Akhyar Farrukh, Toxicological properties of iron loaded polymeric chloroquine phosphate nanodrug, 3rd Conference on Frontiers of Nanoscience and Nanotechnology, 25-27 October 2016. Pp 57.
6. Amna Afzaal, Nabeela Aslam, Sadia Perveen, Muhammad Akhyar Farrukh, Comparative study of SnO₂-TiO₂ and SnO₂-SiO₂ on photocatalytic degradation of methylene blue, 3rd Conference on Frontiers of Nanoscience and Nanotechnology, 25-27 October 2016. Pp 43.

7. Shaista Ali, Muhammad Akhyar Farrukh, XRD peak profiling, optical parameters and catalytic properties of SrO-MoO₃ nanoparticles, 3rd Conference on Frontiers of Nanoscience and Nanotechnology, 25-27 October 2016. Pp 34.
8. Shaista Ali and Muhammad Akhyar Farrukh, Synthesis of SrO-MoO₃ nanoparticles and their optical and photocatalytic properties, 27th National 15th International Chemistry Conference, Department of Chemistry, University of Malakand, August 22-25, 2016. Pp 224.
9. Muhammad Arshad, Sadia Perveen, Nabeela Aslam, Amna Afzaal, Muhammad Akhyar Farrukh, Synthesis and biological activities of ZnO-SiO₂ nanocomposite, 11th International Symposium on Analytical and Environmental Chemistry (ISAE-2016), National Centre of Excellence in Analytical Chemistry, University of Sindh, Jamshoro, March 07-08, 2016. Pp 73.
10. Shaista Ali, Muhammad Akhyar Farrukh, Catalytic and antibacterial activities of MoO₃ nanoparticles, Fourth International Conference on Environmental Horizon (ICEH 2015), Department of Chemistry, University of Karachi, 8-10 January 2016. Pp37.
11. Muhammad Akhyar Farrukh, Shaista Ali, Synthesis of CuO-ZnO and CdS/CuO-ZnO for enhanced photocatalytic activity, International Conference on Solid State Physics, 2015 (ICSSP'15) Centre of Excellence in Solid State Physics, University of the Punjab, December 13-17, 2015.
12. Shaista Ali, Muhammad Akhyar Farrukh, Synthesis of MoO₃ nanoparticles, 2nd Conference on Frontiers of Nanoscience and Nanotechnology, 8-10 September 2015. Pp 33.
13. Asma Sehrish, Muhammad Akhyar Farrukh, Enhancement of drug release of antimalarial nanodrug, 2nd Conference on Frontiers of Nanoscience and Nanotechnology, 8-10 September 2015. Pp 45.
14. Ayesha Imtiaz, Muhammad Akhyar Farrukh, Synthesis of CeO₂-ZnO nanocomposites at different pH and its structural evaluation, 2nd Conference on Frontiers of Nanoscience and Nanotechnology, 8-10 September 2015. Pp 45.
15. Fizza Naseem, Nano Leucite for matrix-based urea fertilizer, 2nd Conference on Frontiers of Nanoscience and Nanotechnology, 8-10 September 2015. Pp 47.
16. Komal Mehmood Butt, S. Batool, N. Fakhar, I. Mineer, M. Akhyar Farrukh, Sol-gel synthesis of lanthanum doped tin oxide/titanium oxide nanoparticles by using benzyl alcohol, 2nd Conference on Frontiers of Nanoscience and Nanotechnology, 8-10 September 2015. Pp 50.
17. Mariam Allah Ditta, N. Malik, Shaista Ali, M. Akhyar Farrukh, Influence of feed rate on the synthesis of CdS/ZnO-NiO nanocomposites and their antibacterial activities, 2nd Conference on Frontiers of Nanoscience and Nanotechnology, 8-10 September 2015. Pp 53.
18. Nuzhat Batool, Sidra Sharif, Z. Munawar, Iqra Muneer, M. Akhyar Farrukh, Surfactant controlled synthesis of lanthanum doped SnO₂-TiO₂ nanoparticles and its applications, 2nd Conference on Frontiers of Nanoscience and Nanotechnology, 8-10 September 2015. Pp 60.

19. Ayesha Imtiaz and Muhammad Akhyar Farrukh, Synthesis of Alumina doped Calcium Oxide Nanocatalyst for Photodegradation of Warfare Pollutants, *Poster* in the Third International Conference on Environmental Horizon (ICEH 2015), Department of Chemistry, University of Karachi, 9-11 January 2015.
20. Rabia M. Ali, Muhammad Akhyar Farrukh and Aziz-ur-Rehman, Synthesis of Fluorescent Dye Modified with Metal Nanoparticles for Development of Fingermarks, *Poster* in the conference on Frontiers of Nanoscience and Nanotechnology at PINSTECH on June 03-05, 2014.
21. Shaista Ali and M. Akhyar Farrukh, Degradation of Explosive Compound Through MgO Nanoparticles, International Conference and Workshop on Nano Science and Technology, Department of Electronics, Quaid-i-Azam University, Islamabad, October 1-5, 2012.
22. M. Akhyar Farrukh, "Measurement of thermodynamic parameters on the reduction of diphenylbenzidine by sodium Thiosulfate" 5th International and 15th National Chemistry Conference, Quaid-I-Azam University, Islamabad, November 24-27, 2004, pp 44
23. M. Akhyar Farrukh, "Effect of dielectric constant and ionic strength on the redox reaction between tris(2,2-bipyridine)iron(II) and cerium(IV)" Presented in 4th International and 14th National Chemistry Conference, P.C.S.I.R Labs Complex Lahore, May 16-18, 2004, pp. 205
24. M. Akhyar Farrukh, "Seasonal Effect on Concentration of Trace Metals in Plants and Soil of Different Areas of Karachi (A Comparative Study)" Presented in International Conference on Environmental Challenges, University of Peshawar, 11-13 March 2004, PP 7-8.
25. M. Akhyar Farrukh, "Determination of Trace Metals (Co, Cu, Cd, Fe, Ni, Pb, Zn, Mn) and Macronutrients (Na, K) also Li in Different Sweets of Karachi Region by Atomic Absorption and Flame Emission Spectroscopy" Presented in International Conference on Environmental Challenges, University of Peshawar, 11-13 March 2004, PP 8.
26. M. Akhyar Farrukh, "Determination of Cu, Cd, Pb, and Zn Concentration in Edible Marine Fish", Presented in 7th National Symposium on Analytical & Environmental Chemistry, CEAC, University of Sindh, March 4th –5th, 2003, pp. 16.
27. M. Akhyar Farrukh, "Correlation Between Electrochemical and Kinetics Investigations for the Redox Reaction Between Iron(III)-Iron(II) Complexes" Presented in 3rd International and 13th National Chemistry Conference, University of Karachi" December 28-31, 2002, pp. 156.
28. M. Akhyar Farrukh, "Kinetic Study Between Hexacyanoferrate(III) and L-ascorbic Acid" Presented in 3rd International and 13th National Chemistry Conference, University of Karachi, December 28-31, 2002, pp. 75.
29. M. Akhyar Farrukh, "Kinetic study of electron transfers reaction between acetylacetonatomanganese(III) perchlorate and thiosulfate, and Investigations of factors influencing the electron transfer process" Presented in 2nd International and 12th National Chemistry Conference, University of Sindh, February 4-6, 2002, pp. 05.

30. M. Akhyar Farrukh, "Determination of Stability and Effect of Temperature on the Rate of Reduction of Fe (III) opt by Ferrocene" Presented in 2nd International and 12th National Chemistry Conference, University of Sindh, February 4-6, 2002.
31. M. Akhyar Farrukh, Dependence of Medium on Formal Potentials and Effect of Temperature on Rate of Oxidation of Potassium Hexacyanoferrate(II), Presented in 2nd International and 12th National Chemistry Conference, University of Sindh, February 4-6, 2002, pp. 07.
32. M. Akhyar Farrukh, Kinetic study of reduction of bis(pentane-2,4-dionato)diaquo manganese(III) complex with L-ascorbic acid, Presented in 10th National Chemistry Conference, Quaid-i-Azam University, Islamabad, October 28-30, 1999, pp. 80.