

SUMAIRA ANJUM, PhD

Tenured Associate Professor (TTS)
Department of Biotechnology,
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Education

PhD (Biotechnology)	Quaid-i-Azam University, Islamabad Pakistan. Thesis: “Green Synthesis of Antimicrobial Nanoparticles (Silver and Zinc Oxide) and Production of Commercially Important Secondary Metabolites from In Vitro-Derived Cultures of <i>Linum usitatissimum</i> L.”	2014-2018
M.Phil. (Biochemistry)	Quaid-i-Azam University, Islamabad Pakistan. Thesis: “Genetic Analysis of Families with Retinitis Pigmentosa” CGPA: 4.65/5.0 (Percentage: 90.45%) Distinction: Gold Medal	2009-2011
M.Sc. (Chemistry)	Bahhudin Zakariya University, Multan Pakistan. Thesis: “Biochemical Analysis of milk Proteins in Commercially Available Tetra-pack Milk Brands” CGPA: 4.0/5.0 (Percentage: 80 %) Distinction: Silver Medal	2005-2008
B.Sc. (Bot, Zoo, Chem)	Government college for Women, Sahiwal Pakistan. Marks: 548/800 (Percentage: 68.69%)	2003-2005

Professional Experience

- **Tenured Associate Professor (2025 - To date)**
Department of Biotechnology, Kinnaird College for Women University, Lahore Pakistan.
- **Publication and Communication Specialist (2025 – To date)**
ORIC, Kinnaird College for Women University, Lahore Pakistan.
- **Assistant Professor (2019 - 2025)**
Department of Biotechnology, Kinnaird College for Women University, Lahore Pakistan.

- **Research Associate (2015-2017)**

Department of Biotechnology, Quaid-i-Azam University, Islamabad Pakistan.

- **Lecturer (2012-2014):** Punjab Group of Colleges, Science Campus, Okara.

- **Lecturer (2011-2012):** Superior Group of Colleges, Campus Depalpur.

Research Interests

- Synthesis of Nanomaterials (organic, inorganic and hybrid) by chemical and biological methods.
- Synthesis of drug-loaded nanocarriers/Nanomedicines for treating various diseases and evaluation of their biological activities in *in-vitro* (cell cultures/cell lines) and *in-vivo* (animal models) setups.
- Characterization of nanomaterials by various spectroscopy and microscopy techniques.
- Establishment of *In-vitro* cultures (seed/root/callus/cell suspension) of medicinally important plants and studying their interaction with various nanoparticles in terms of production of bioactive compounds.
- Quantification and metabolic profiling of bioactive metabolites produced in *in-vitro* cultures of plants by various elicitation strategies especially the abiotic elicitors.

Publications and Research-related Activities

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| • Peer-reviewed articles published: > 50 | • Conferences/workshops/trainings attended: > 30 |
| • Book chapter published: 11 | • Conferences/workshops/Seminar organized as moderator/focal person/facilitator: 5 |
| • Accumulative Impact Factor: > 185 | • Oral/Invited Talks: 13 |
| • Google Scholar citations: > 3900 | • Act as reviewer for journals: > 20 |
| • H-index: 31 | |

Awards, Fellowships and Honors

- **Best Research Award-2026** by Kinnaird College for Women, Lahore, Pakistan.
- **Ranked in top 2% Scientist** list-2024-2026 released by Stanford University in Collaboration with Elsevier-Scopus.
- **Gold Medal (Dr. Sajjad Aslam Shami Gold Medal)** for contribution in the field of Applied Biosciences by Applied Zoological Society of Pakistan (2023).
- **Gold Medal** for securing first place in M.Phil. (Biochemistry) by Quaid-i-Azam University, Islamabad Pakistan (2011).
- **Silver Medal** for securing second place in M.Sc. (Biochemistry) by Baha Uddin Zakariya University, Multan (2009).
- **Merit based fellowship** for M.Phil. in Quaid-i-Azam University, Islamabad (2009-2011).
- **Merit based fellowship** for M.Sc. in Baha Uddin Zakariya University, Multan (2005-

2007).

- **Interim Placement for Fresh PhDs grant-** IPFP (2019-2020) to work as Assistant Professor at the Department of Biotechnology, Kinnaird College for Women, Lahore (funds provided by Higher Education Commission of Pakistan; HEC).
- **Awarded a researcher project** of worth 0.43 million under start-up research grant program (SRGP No: 21- 2492/SRGP/R&D/HEC/2019) by Higher Education Commission (HEC) of Pakistan (2019).
- Recognized as **PhD approved Supervisor** by Higher Education Commission (HEC) of Pakistan (2020).
- **Top Researcher Recognition:** Ranked as the top researcher among all faculty members at Kinnaird College for Women University Lahore (2024) by AD Scientific Index (2024). This recognition highlights outstanding contributions to research, publication quality, and academic impact within the institute.

Research Projects

- Completed a SRGP research project on, “Effect of Light-emitting Diodes on Plant-mediated Biosynthesis, Morphology, Anti-cancerous and Antimicrobial activities of Smart Metallic Bombs (Silver and Zinc Oxide Nanoparticles)” as Principle investigator (PI), funded (0.43 Million) by HEC (Duration: 2019-2021).

Membership in Scientific Societies/Editorial Boards/Board of Studies

- Member (Secretary) the Kinnaird Ethics Review Committee (KERC), 2026-2029.
- Member, Royal Society of Chemistry (RSC) (2025 onward)
- Managing Editor of the Journal of Natural and Applied Sciences Pakistan, 2026.
- Member of International Plant Breeding Society, 2026 onward.
- Member, Applied Zoological Society of Pakistan (AZSP) (2023 onward).
- Editorial Board member of Futuristic Biotechnology Journal by LMRC, Pakistan.
- Editorial Board Member of Plant Biotechnology Journal by Frontiers.
- Member, M.Phil. Research Committee, Department of Biotechnology, Kinnaird College for Women University Lahore (2024 onward).
- Member, Postgraduate Admission Test committee, Department of Biotechnology, Kinnaird College for Women University Lahore (2020 onward).
- Member of Inventory Committee of Kinnaird College for Women, University Lahore, Pakistan (2024 onward).
- Member of Convocation Organizing Committee, Kinnaird College for Women, Lahore (2026 onward).
- Member, Board of Studies, Department of Biotechnology, Kinnaird College for Women University Lahore (2021 onward).

Reviewer of Journals

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| <ul style="list-style-type: none"> • International Journal of Nanomedicines • Life • RSC Pharmaceutical • Journal of Cluster Science • Advanced Healthcare Materials | <ul style="list-style-type: none"> • BMC Cancer • Journal of Nanoparticle Research • Plant cell, tissue and Organ Culture • ACS applied Nanomaterials • Pharmaceutical Nanotechnology |
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Research Collaborations

NATIONAL

- Dr. Bilal Haider Abbasi, Tenured Professor in the Department of Biotechnology, Quaid-i-Azam University, Islamabad.
- Dr. Murtaza Hassan, Associate Professor, Department of Biotechnology, The Islamia University Bahawalpur.
- Dr. Bushra Ahmad, Assistant Professor, Department of Biochemistry and Biotechnology, Shaheed Benazir Bhutto University Peshawar.

INTERNATIONAL

- Dr. Christophe Hano, Associate Professor, Department of Plant Biochemistry, University of Orleans, France.
- Dr. Mohamed Mohamed Soliman, Professor, Clinical laboratory Sciences Department, Turabah University College, Taif University, Saudi Arabia.
- Dr. Wisam Nabeel Ibrahim, Assistant Professor of Biomedical Sciences College of Health Sciences, QU Health Qatar University, Doha Qatar.

Teaching (Undergraduate + Postgraduate)

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| <ul style="list-style-type: none"> • Applications of Nanotechnology • Principles of Biochemistry • Biochemistry-I • Biochemistry-11 • Agriculture Biotechnology | <ul style="list-style-type: none"> • Advances in Plant Biotechnology • Research Methodology and Scientific Writing • Methods in Molecular Biology • Nanotechnology in Life Sciences • Scientific and Review Writing |
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Publications in Peer-reviewed Journals

Papers Published as First/Corresponding Author

1. Shafique, J., Ali, A., Nazim, M., Inam, M., Althobaiti, S. A., Alotaibi, K. S., & **Anjum, S.** (2026). Hepatorenal protective effect of berberine-loaded Ag–ZnO nanoparticles in mitigating carbon tetrachloride (direct) and alloxan-induced oxidative stress (indirect)

in albino rat models. *RSC advances*, 16(44), 56258-56284.

2. Butt, Mahin Zubair, Zahra Tariq, Maryam Imran, Ahood A. Al-Eidan, Shahzadi Mahjabeen, Seerat Fatima, Ghayyas ud Din, **Sumaira Anjum***, Elham Abdullatif M. Sharif, and Wisam Nabeel Ibrahim. "Liposomal nanotherapeutics for cancer treatment: Targeted delivery and immunotherapy." *International Journal of Immunopathology and Pharmacology* 40 (2026).
3. Eiman L, Moazzam K, **Anjum S***, Kausar H, Sharif EAM and Ibrahim WN (2025), Gut dysbiosis in cancer immunotherapy: microbiota-mediated resistance and emerging treatments. *Front. Immunol.* 16:1575452. doi: 10.3389/fimmu.2025.1575452.
4. **Sumaira Anjum***, Mohamed Mohamed Soliman, Fayez Althobaiti, Shatha B. Albattal, Momina Riaz Dar, Mubashara Inam, Amna Komal Khan, Ahmed Elsnehawi and Huma Mujahid; Impacts of *Ficus Religiosa*-loaded chitosan nanoparticles against indomethacin induced peptic ulcer in rats: promising therapy with enhanced bioavailability and gastro-protective activity; *Toxicology Research*, **2025**, Vol. 25, No. 265-277.
5. Mariam Hashim, **Sumaira Anjum***, Huma Mujahid, Khalid S. Alotaibic, Shatha B. Albatta, Heba I. Ghamry; Thymoquinone loaded zinc oxide Nanoformulations synthesis, characterization and evaluation of their efficacy against carbon tetrachloride induced Hepatorenal toxicity in rats; *Toxicology Research*, **2025**, Vol. 25, No. 234-245.
6. **Anjum, S***, Inam, M., Jassim, A.Y., Attique, I., Zahra, M., Althobaiti, F., Soliman, M.M., Alotaibi, K.S., Albattal, S.B. and Hano, C., 2025. Comparative mechanistic study of green-synthesized silver-zinc oxide (Ag-ZnO) and iron–Zinc oxide (Fe-ZnO) bimetallic nanoparticles in antiglycation, antidiabetic, antioxidant, and anticancer activities. *Journal of Taibah University for Science*, 19(1), p.2515712.
7. **Anjum S***, Hashim, M., Imran, M., Babur, S., Adnan, S., Hano, C. and Ibrahim, W.N., **2025**. Selenium nanoparticles in cancer therapy: Unveiling cytotoxic mechanisms and therapeutic potential. *Cancer Reports*, 8(6), p.e70210.
8. Khansa Ali Sheikh, Momna Amjad, Mahnoor Tabassum Irfan, **Sumaira Anjum***, Tanveer Majeed, Muhammad Usman Riaz, Amar Yasser Jassim, Elham Abdullatif M Sharif, Wisam Nabeel Ibrahim; Exploring TGF- β Signaling in Cancer Progression: Prospects and Therapeutic Strategies; *Oncotargets and Therapy by Taylor & Francis* (2025); 233-262.
9. Azam, D., Arshad, N., Khalid, M., Hassan, S., **Anjum, S***, Abdullatif M Sharif, E. and Ibrahim, W.N., 2025. Snake venom in conjugation with silica nanoparticles: an emerging cancer therapy. *Oncologie*, (2025).
10. Attique, I., Haider, Z., Khan, M., Hassan, S., Soliman, M.M., Ibrahim, W.N. and **Anjum, S***, **2025**. Reactive Oxygen Species: From Tumorigenesis to Therapeutic Strategies in Cancer. *Cancer Medicine*, 14(10), p.e70947.
11. Noor, B., Zubair, A., Shahzad, R. **Sumaira Anjum***, Mohmed M. S., Cerium Oxide Nanoparticles (CeO₂ NPs): A Dual Approach to Therapy and Toxicity in Hepatorenal Systems. *BioNanoSci.* 15, 3 (2025).
12. Mubashara Inam, Zahra Haider, **Sumaira Anjum***, Bushra Ahmad, Mohammad Soliman, Iftikhar Hussain, Christophe Hano, Differential impact of biogenic and chemically synthesized zinc oxide nanoparticles on anti-aging, anti-oxidant and anti-cancerous activities: A mechanism based study; *New Journal of Chemistry*, **2024**; 2; 3456. (IF: 3.3).

13. Zahra Tariq, Muhammad Imran Qadeer, Iram, Anjum, **Sumaira Anjum***, Murtaza Hasan, Nondiagnostic advancements in revolutionizing lactose intolerance: A minireview for health sciences”, Hybrid Advances, Volume 6, **2024**, 100264.
14. **Sumaira Anjum***, Nanotechnology at the Crossroads: Advancements and Ethical Dilemmas in Healthcare, Environment and Agriculture, Nano: **2024**, 17 (3), 24311.
15. Zafar Iqbal Khan, Fatima Ghulam Muhammad, Kafeel Ahmad, Mona Alwahibi, His-Hsien Yang, **Sumaira Anjum**, Khalid Iqbal, Emanuele Radicetti, Muhammmad Iftikhar Hussain. Nickel toxicology testing in alternative specimen from farm ruminants in a urban polluted environment. Journal of King Saud University-Science; **2024**; Vol:36, pp. 103520.
16. Momina Riaz Dar, Amna Komal Khan, Mubashra Inam, Christophe Hano, **Sumaira Anjum***; Differential Impact of Zinc Salt Precursors on Physiognomies, Anticancerous, and Antibacterial Activities of Zinc Oxide Nanoparticles; Applied Biochemistry and Biotechnology: **2023**, 1-26. (IF:3.1)
17. Mubashra Inam, Iqra Attique, Maryam Zahra, Amna Komal Khan, Mariam Hahim, Christophe Hano, **Sumaira Anjum***, Metal oxide nanoparticles and plant secondary metabolism: unraveling the game-changer nano-elicitors; Plant Cell, Tissue and Organ Culture (PCTOC): **2023**, 1-18. (IF: 3.0)
18. Syeda Itrat Zahra Naqvi, Humera Kausar, Arooj Afzal, Mariam Hashim, Huma Mujahid, Maryam Javed, Christophe Hano, **Sumaira Anjum***, Antifungal Activity of Juglans-regia-Mediated Silver Nanoparticles (AgNPs) against *Aspergillus-ochraceus*-Induced Toxicity in In Vitro and In Vivo Settings; Journal of Functional Biomaterials: **2023**; 14 (4) 221-234 (IF: 4.8)
19. Zahra Tariq, Muhammad Imran Qadeer, Iram Anjum, Christophe Hano, **Sumaira Anjum***. Thalassemia and Nanotheragnostics: Advanced Approaches for Diagnosis and Treatment. Biosensors; **2023**, 13 (9), 1234. (IF: 5.4)
20. Mariam Hashim, Huma Mujahid, Samina Hassan, Shanila Bukhari, Iram Anjum, Christophe Hano, Bilal Haider Abbasi, **Sumaira Anjum***. Implication of Nanoparticles to Combat Chronic Liver and Kidney Diseases: Progress and Perspectives. Biomolecules; **2022**, 12 (11), 1337 (IF: 5.5)
21. **Sumaira Anjum***, Rimsha Chaudhary, Amna Komal Khan, Mariam Hashim, Iram Anjum, Christophe Hano, Bilal Haider Abbasi. Light-emitting diode (LED)-directed green synthesis of silver nanoparticles and evaluation of their multifaceted clinical and biological activities. RSC Advances; **2022**, 12, 22266-22284. (IF: 3.9)
22. **Sumaira Anjum***, Khadija Nawaz, Bushra Ahmad, Christophe Hano, Bilal Haider Abbasi. Green synthesis of biocompatible core-shell (Au-Ag) and hybrid (Au-ZnO and Ag-ZnO) bimetallic nanoparticles and evaluation of their potential antibacterial, antidiabetic, antiglycation and anticancer activities. RSC Advances, **2022**, 12, 23845-23859 (IF: 3.9)
23. Amna Komal Khan, Sullivan Renouard, Samantha Drouet, Jean-Philippe Blondeau, Iram Anjum, Christophe Hano, Bilal Haider Abbasi, **Sumaira Anjum***, Effect of UV Irradiation (A and C) on Casuarina equisetifolia-Mediated Biosynthesis and Characterization of Antimicrobial and Anticancer Activity of Biocompatible Zinc Oxide

Nanoparticles. *Pharmaceutics*. **2021**, 13 (11) 1977. (IF: 5.4)

24. **Sumaira Anjum***, Amna Komal Khan, Anza Qamar, Noor Fatima, Samantha Drouet, Sullivan Renouard, Jean Philippe Blondeau, Bilal Haider Abbasi, Christophe Hano. Light Tailoring: Impact of UV-C Irradiation on Biosynthesis, Physiognomies, and Clinical Activities of *Morus macroura*-Mediated Monometallic (Ag and ZnO) and Bimetallic (Ag–ZnO) Nanoparticles. *International Journal of Molecular Sciences*. **2021**, 22 (20) 11294. (IF: 5.6)
25. **Sumaira Anjum***; Ishaque, S.; Fatima, H.; Farooq, W.; Hano, C.; Abbasi, B.H.; Anjum, Iram. Emerging Applications of Nanotechnology in Healthcare Systems: Grand Challenges and Perspectives. *Pharmaceutics*. **2021**, 14, 707. (IF: 4.6)
26. Hashim, M.; Ahmad, B.; Drouet, S.; Hano, C.; Abbasi, B.H.; **Sumaira Anjum***. Comparative Effects of Different Light Sources on the Production of Key Secondary Metabolites in Plants In Vitro Cultures. *Plants*. **2021**, 10, 1521. (IF: 4.5)
27. **Sumaira Anjum***, Mariam Hashim, Sara Asad Malik, Maha Khan, José M Lorenzo, Bilal Haider Abbasi, Christophe Hano. Recent Advances in Zinc Oxide Nanoparticles (ZnO NPs) for Cancer Diagnosis, Target Drug Delivery, and Treatment. *Cancers*. **2021**. 13 (18) 4570. (IF: 5.2)
28. Khan, A.K.; Kousar, S.; Tungmunthum, D.; Hano, C.; Abbasi, B.H.; **Anjum, S***. Nano-Elicitation: As an Effective and Emerging Strategy for In Vitro Production of Industrially Important Flavonoids. *Appl. Sci*. **2021**, 11, 1694. (IF: 2.7)
29. Nawaz, K.; Chaudhary, R.; Sarwar, A.; Ahmad, B.; Gul, A.; Hano, C.; Abbasi, B.H.; **Anjum, S***. Melatonin as Master Regulator in Plant Growth, Development and Stress Alleviator for Sustainable Agricultural Production: Current Status and Future Perspectives. *Sustainability*. **2021**, 13, 294. (IF: 3.9)
30. Faryal S., Muhammad Y., Hina F., Sadaf M., Faiz Ur R., Muzamil S., **Anjum, S.**, Nisar A., Mohammad a., Christophe H., Bilal Haider A (2021). Green and chemically synthesized zinc oxide nanoparticles: effects on in-vitro seedlings and callus cultures of *Silybum marianum* and evaluation of their antimicrobial and anticancer potential. *Artificial Cells, Nanomedicine, and Biotechnology*. 49 (1); 450-460. (IF: 5.8)
31. **Anjum, S.***; Komal, A.; Drouet, S.; Kausar, H.; Hano, C.; Abbasi, B.H. Feasible Production of Lignans and Neolignans in Root-Derived In Vitro Cultures of Flax (*Linum usitatissimum* L.). *Plants* **2020**, 9, 409. (IF: 4.5)
32. Rimsha C., Khadija N. Amna K. K., Christophe H., Bilal H. A., **Anjum S***. (2020). An Overview of the Algae-mediated Biosynthesis of Nanoparticles and their Biomedical Applications. *Biomolecules*. (IF: 5.5)
33. Amna K.K., Kausar H. , Samra S. J., Christophe H., Bilal H. A., **Anjum S***. (2020). Algal Genomics and Evolution: An Insight into the Biotechnological productions of industrially important Metabolites. *Biomolecules*. (IF: 5.5)
34. Shafiq M, **Anjum S***, Hano C, Anjum I, Abbasi B.H. An overview of the applications of nanomaterials and nanodevices in the food industry. *Foods*. **2020**;9(2):148. (IF: 5.561).

35. Shah, M.; Nawaz, S.; Jan, H.; Uddin, N.; Ali, A.; **Anjum, S.**; Giglioli-Guivarc'h, N.; Hano, C.; Abbasi, B.H. Synthesis of bio-mediated silver nanoparticles from *Silybum marianum* and their biological and clinical activities. *Materials Science and Engineering: C*. **2020**, 110889. (IF: 8.457)
36. Usman, H.; Ullah, M.A.; Jan, H.; Siddiquah, A.; Drouet, S.; **Anjum, S.**; Giglioli-Guivarc'h, N.; Hano, C.; Abbasi, B.H. Interactive Effects of Wide-Spectrum Monochromatic Lights on Phytochemical Production, Antioxidant and Biological Activities of *Solanum xanthocarpum* Callus Cultures. *Molecules* **2020**, 25, 2201. (IF: 4.6)
37. **Anjum S***, Anjum I, Hano C, Sidra K. **(2019)**. Advances in Nanomaterials as Novel Elicitors of Pharmacologically Active Plant Specialized Metabolites: Current Status and Future Outlooks. *RSC Advances*. 9: 40404-40423. (IF: 3.9).
38. Saleem K, Khurseed Z, **Anjum S***, Hano C, Anjum I. **(2019)**. Theranostic Applications of Nanomaterials in Leishmaniasis: A Focus on Recent Advances and Challenges. *Nanomaterials*. 9: 1749-1766. (IF: 5.3)
39. **Anjum S**, Abbasi BH, Hano C **(2017)**. Trends in accumulation of pharmacologically important antioxidant-secondary metabolites in callus cultures of *Linum usitatissimum* L. *Plant Cell, Tissue and Organ Culture (PCTOC)*. 129: 73-83. (IF: 3.0)
40. **Anjum S**, Abbasi BH, Doussot J, Favre-Réguillon A, Hano C **(2017)**. Effects of photoperiod regimes and ultraviolet-C radiations on biosynthesis of industrially important lignans and neolignans in cell cultures of *Linum usitatissimum* L. (Flax). *Journal of Photochemistry and Photobiology B: Biology*. 167:216-227. (IF: 5.4)
41. **Anjum S**, Abbasi BH, Shinwari ZK **(2016)**. Plant-mediated green synthesis of silver nanoparticles for biomedical applications: Challenges and opportunities. *Pakistan journal of Botany*. 48 (4): 1731-1760. (IF: 1.2)
42. **Anjum S**, Abbasi BH **(2016)**. Thidiazuron-enhanced biosynthesis and antimicrobial efficacy of silver nanoparticles via improving phytochemical reducing potential in callus culture of *Linum usitatissimum* L. *International Journal of Nanomedicine*. 11:715-728. (IF: 8.0)
43. **Anjum S**, Abbasi BH **(2016)**. Biomimetic synthesis of antimicrobial silver nanoparticles by using in vitro-propagated plantlets of a medicinally important endangered plant species: *Phlomis bracteosa*. *International Journal of Nanomedicine*. 11:1663-1675. (IF: 8.0)

Note: *denotes to corresponding author.

Papers Published as Co-Author

44. Saira Idrees, Mian Hasnain Nawaz, Muhammad Azhar Hayat Nawaz, Muhammad Nasir, Abdur Rahim, **Sumaira Anjum**, Essam R.I. Mahmoud, Mazhar Amjad Gilani, Akhtar Hayat, “Computational model-guided design of β -cyclodextrin-aminopyrene fluorescence nanoprobe for competitive displacement detection of theophylline drug”,

45. Mahgoub, Samar M., Sarah I. Othman, Ahmed A. Allam, Sahar Abdel Aleem Abdel Aziz, Esraa Khaled, Abdullah A. Eweis, **Sumaira Anjum**, and Rehab Mahmoud. "Hydroxyapatite-Based Nanoformulation for Osteosarcoma Treatment and Bone Regeneration." *Journal of Nanotechnology* 2025, no. 1 (2025): 6704125.
46. Zafar Iqbal Khan, Fatima Ghulam Muhammad, Kafeel Ahmad, Mona Alwahibi, His-Hsien Yang, **Sumaira Anjum**, Khalid Iqbal, Emanuele Radicetti, Muhammad Iftikhar Hussain. Nickel toxicology testing in alternative specimen from farm ruminants in a urban polluted environment. *Journal of King Saud University-Science*; **2024**; Vol:36, pp. 103520.
47. Bisma Meer, Anisa Andleeb, Junaid Iqbal, Hajra Ashraf, Kushif Meer, Joham Sarfraz Ali, Samantha Drouet, **Sumaira Anjum**, Azra Mehmood, Taimoor Khan, Mohammad Ali, Christophe Hano, Bilal Haider Abbasi. Bio-Assisted Synthesis and Characterization of Zinc Oxide Nanoparticles from *Lepidium sativum* and their Potent Antioxidant, Antibacterial and Anticancer activities. *Biomolecules*; **2022**, 26, 828. (IF: 5.5).
48. Shah, M.; Nawaz, S.; Jan, H.; Uddin, N.; Ali, A.; **Anjum, S.**; Giglioli-Guivarc'h, N.; Hano, C.; Abbasi, B.H. Synthesis of bio-mediated silver nanoparticles from *Silybum marianum* and their biological and clinical activities. *Materials Science and Engineering: C*. **2020**, 110889. (IF: 8.457)
49. Usman, H.; Ullah, M.A.; Jan, H.; Siddiquah, A.; Drouet, S.; **Anjum, S.**; Giglioli-Guivarc'h, N.; Hano, C.; Abbasi, B.H. Interactive Effects of Wide-Spectrum Monochromatic Lights on Phytochemical Production, Antioxidant and Biological Activities of *Solanum xanthocarpum* Callus Cultures. *Molecules* **2020**, 25, 2201. (IF: 4.6)
50. Zaeem, A.; Drouet, S.; **Anjum, S.**; Khurshid, R.; Younas, M.; Blondeau, J.P.; Tungmunthum, D.; Giglioli-Guivarc'h, N.; Hano, C.; Abbasi, B.H. Effects of Biogenic Zinc Oxide Nanoparticles on Growth and Oxidative Stress Response in Flax Seedlings vs. In Vitro Cultures: A Comparative Analysis. *Biomolecules* **2020**, 10, 918. (IF: 5.5)
51. Faryal S., Muhammad Y., Hina F., Sadaf M., Faiz Ur R., Muzamil S., **Anjum, S.**, Nisar A., Mohammad a., Christophe H., Bilal Haider A (2021). Green and chemically synthesized zinc oxide nanoparticles: effects on in-vitro seedlings and callus cultures of *Silybum marianum* and evaluation of their antimicrobial and anticancer potential. *Artificial Cells, Nanomedicine, and Biotechnology*. 49 (1); 450-460. (IF: 5.8)
52. Abbasi BH, **Anjum S**, Hano C (2017). Differential effects of in vitro cultures of *Linum usitatissimum* L. (Flax) on biosynthesis, stability, antibacterial and antileishmanial activities of zinc oxide nanoparticles: a mechanistic approach. *RSC Advances*. 7: 15931– 15943. (IF: 3.9)
53. Zahir A, Abbasi BH, Adil M, **Anjum S**, Zia M, Ihsan-ul-haq. Synergistic Effects of Drought Stress and Photoperiods on Phenology and Secondary Metabolism of **Silybum marianum**. *Applied Biochemistry and Biotechnology*. **2014**; 174: 693-707. (IF: 3.0)

Book Chapters Published

1. Tariq, Zahra, Abeer Fatima, Safana Khurram, Zahra Haider, Samina Hassan, Muhammad Iftikhar Hussain, and **Sumaira Anjum***. "Influence of Carbon-Based Nanomaterials on Plant Cell Toxicity, Nutritional, and Active Compound Accumulation." In *Emerging Carbon Nanomaterials for Sustainable Agricultural Practices: Synthesis, Plant Growth, Performance, Production and Protection*, pp. 149-180. Singapore: Springer Nature Singapore, 2025. (https://link.springer.com/chapter/10.1007/978-981-97-5104-4_8)
2. Attique, Iqra, Mubashra Inam, and **Sumaira Anjum***. "Nanomaterials Journey in Citrus Trees: A Pivotal Agroforestry Exploration." In *Nanomaterials in Agroforestry Systems*, pp. 409-436. Singapore: Springer Nature Singapore, 2025. (https://link.springer.com/chapter/10.1007/978-981-96-1337-3_17)
3. Tariq, Zahra, Tabinda Shahzadi, Hijab Fatima, Irha Mujeeb, Sara Maham, Areej Imran, M. Iftikhar Hussain, Fatima, and **Sumaira Anjum***. "Effects of Silver Nanoparticles on Wetland Plant and Soil Systems." In *Plant Response to Silver Nanoparticles: Plant Growth, Development, Production, and Protection*, pp. 225-247. Singapore: Springer Nature Singapore, 2024. (https://link.springer.com/chapter/10.1007/978-981-97-7352-7_13)
4. Alyas, Jessica, Noor Khalid, Sara Ishaque, Hijab Fatima, Mariam Hashim, Samina Hassan, Shanila Bukhari, Christophe Hano, Bilal Haider Abbasi, and **Sumaira Anjum***. "Light (high light/UV radiation) modulates adaptation mechanisms and secondary metabolite production in medicinal plants." In *Medicinal plants: their response to abiotic stress*, pp. 363-390. Singapore: Springer Nature Singapore, 2023. (https://link.springer.com/chapter/10.1007/978-981-19-5611-9_14)
5. Hijab Fatima, Sara Ishaque, Mariam Hashim, Christophe Hano, Bilal Haider Abbasi, **Sumaira Anjum***. *Role of Hydrogen peroxide in Plant and Crosstalk with Signaling Networks, Growth, and Development. Hormonal Cross-Talk, Plant Defense and Development*; 2023, Academic press Elsevier. (<https://www.sciencedirect.com/science/article/abs/pii/B9780323953757000021>)
6. Markulin, Lucija, Samantha Drouet, Laurine Garros, **Sumaira Anjum**, Duangjai Tungmunthum, Bilal Haider Abbasi, Randolph RJ Arroo, Eric Lainé, Mohamed Addi, and Christophe Hano. "Production of antidiabetic lignans in flax cell cultures." *Biotechnology of anti-diabetic medicinal plants* (2021): 383-407. (https://link.springer.com/chapter/10.1007/978-981-16-3529-8_13)
7. Nawaz, Khadija, Rimsha Chaudhary, Amna Komal Khan, Christophe Hano, Bilal Haider Abbasi, and **Sumaira Anjum***. "Algal-Mediated Biosynthesis of Nanoparticles and Their Potential Therapeutic Applications." In *Bioprospecting Algae for Nanosized Materials*, pp. 171-210. Cham: Springer International Publishing, 2022. (https://link.springer.com/chapter/10.1007/978-3-030-81557-8_8)
8. Khan, Amna Komal, Iram Anjum, Christophe Hano, Bilal Haider Abbasi, and **Sumaira Anjum***. "An overview on feasible production of bioplastic polyhydroxyalkanoate (PHA) in transgenic plants." *Bioplastics for Sustainable Development* (2021): 555-579. (https://link.springer.com/chapter/10.1007/978-981-16-1823-9_20)
9. **Sumaira Anjum***, Amna Komal Khan, Bilal Haider Abbasi (2021). "Nanoparticles as Elicitors of Biologically Active Ingredients in Plants". *Plant Nanobiotechnology*; Springer,

- Nature. (<https://doi.org/10.1002/9781119745884.ch9>)
10. Markulin, Lucija, Yuliia Makhno, Samantha Drouet, Sara Zare, **Sumaira Anjum**, Duangjai Tungmunthum, Mohammad R. Sabzalian et al. "On "the most useful" oleaginous seeds: *Linum usitatissimum* L., a genomic view with emphasis on important flax seed storage compounds." *Oil Crop Genomics* (2021): 135-157. (https://link.springer.com/chapter/10.1007/978-3-030-70420-9_8)
 11. Abbasi, Bilal Haider, Muhammad Younas, **Sumaira Anjum**, Nisar Ahmad, Mohammad Ali, Hina Fazal, and Christophe Hano. "Serotonin in plant signalling and communication." *Neurotransmitters in plant signaling and communication* (2020): 75-92. (https://link.springer.com/chapter/10.1007/978-3-030-54478-2_4)

Research Supervision

- I have Supervised 42 undergraduate students and 25 post graduate students. Currently supervising 9 postgraduates and 8 undergraduate students.

➤ Postgraduate Students Supervised:

1. Amna Komal Khan (Co-Supervised), "Effect of UV (A, B and C) light on plant mediated synthesis and anticancerous activity of Zinc oxide nanoparticles" 2020.
2. Khadija Nawaz, "Plant-Mediated Synthesis of Bimetallic Nanoparticles (Ag-Au, Au-ZnO and Ag-ZnO) and Evaluation of Their Biological Activities" 2020.
3. Rimsha Chaudhary, "Effect of Light-Emitting Diodes on Plant-Mediated Biosynthesis, Morphology, Anticancerous and Antimicrobial Activities of Silver Nanoparticles" 2020.
4. Muqaddas Rana, "Synergetic Effect of *Azadirachta Indica* and *Syzygium Cumini* Extracts On Green Synthesis and Biological Activities of Biocompatible Zinc Oxide Nanoparticles" 2021.
5. Maha Khan, "Citrus Limon- Mediated Biosynthesis of Zinc Oxide Nanoparticles and Evaluation of Their Antioxidant and Biological Activities" 2021.
6. Mariam Waseem, "Plant-mediated Biosynthesis of Silver Nanoparticles and Evaluation of their Anticancerous Drug Loading Capacity" 2021.
7. Maha Shaid (Co-Supervised), "Psidium Guajava Mediated Green Synthesis of Biocompatible Zinc Oxide Nanoparticles and Evaluation of Their Antioxidant and Anti-Cancer Activities" 2021.
8. Mariam Hahim, "Organoprotective Role of Thymoquinone-Loaded Zinc Oxide Nanoparticles Against Hepatotoxicity and Nephrotoxicity in Albino Rats" 2022.
9. Momina Riaz Dar, "Role of *Ficus Religiosa*, Conventional Drug and Encapsulated chitosan nanoparticles in Treatment of Indomethacin-induced Peptic Ulcer in Albino Rats: A Comparative Study" 2023.
10. Sara Chaudhary, "Evaluation of Antidiabetic Activity of *Plantago Lanceolata*-Mediated Monometallic (ZnO and Ag) And Bimetallic (Ag-ZnO) Nanoparticles" 2023.
11. Hijab Fatima, "Synthesis of Epirubicin coated Super Paramagnetic Iron Oxide Nanoparticles (SPIONs) using co-precipitation method and evaluation of their anti-

- tumor activities” 2023.
12. Sara Ishaque, “Synthesis of Tamoxifen Coated Super Paramagnetic Iron Oxide Nanoparticles (SPIONS) and Evaluation of its Anti-Cancer Activity against Breast Cancer Cell Lines” 2023.
 13. Sara Zahid, “Effect of biosynthesized silver-zinc oxide (Ag-ZnO) bimetallic nanoparticles on biomass and production of anticancerous secondary metabolites in in-vitro cultures of *Linum usitatissimum*” 2025.
 14. Hafsa Imtiaz,” Cyclodextrin Coated Biosynthesis of Silver-Zinc Oxide (Ag-ZnO) Bimetallic Nanoparticles and Evaluation of Their Anti-Diabetic Activity in Albino Rats”, 2025.
 15. Seerat Fatima, “Effect of Biosynthesized Silver-Zinc Oxide (Ag-Zno) Bimetallic Nanoparticles on the Production of Antioxidant Secondary Metabolites in Callus Culture of *Nicotiana Tabacum*”, 2025.
 16. Sundus Babar, “Fabricating Silver-Doped ZnO/Graphene Oxide Nanocomposite with Levonorgestrel drug for Evaluating Anticancer Potential”, 2025.
 17. Momna Amjad, Synthesis of Nanoemulsions and Nanoencapsulations of Zingiber officinale & Trachyspermum ammi ethanolic extracts and Evaluation of their Synergistic Anticancerous Activity”, 2025.
 18. Mahnoor Tabsuam Irfan, “Development Of Berberine Encapsulated Chitosan Lipid Nanoparticles For The Evaluation Of Anti-Diabetic Activity: An In Vivo Study”, 2025.
 19. Khansa Ali, “synthesis of nanoemulsions and nanoencapsulations of ethanolic extracts of urtica dioica and murraya koenigii and evaluation of their anti-diabetic activity in albino rats”, 2025.
 20. Muneeba, “Evaluation of Antimicrobial Activity Of Silver-Zinc Oxide Nanoparticles (Ag-Zno Nps) Conjugated With Ceftazidime And Moxifloxacin Against Multi-Drug Resistant Bacteria” 2025.
 21. Shahzadi Mahjbeen, “Cardio Protective Role of Resveratrol loaded Chitosan Nanoparticles against Angiotensin II-Induced Vasoconstriction and Hypertension in Albino Rats”. 2025.
 22. Javeria Shafique, “Evaluation of hepatorenal protective Effects of berberine-Loaded silver-Zinc Oxide nanoparticles in albino rats”, 2026.
 23. Manal Nazim, Synthesis of Cerium Oxide Nanoparticles Based Nano-Biosensor for Heparin Detection”, 2026.
 24. Ghulam Fatima, “Fabrication of Silver Zinc Doped Graphene Oxide Nanocomposites and Evaluation of its Antibacterial Activity against Multidrug-Resistant *Escherichia coli*” 2026.
 25. Noor-ul-saba, “formulation of nanoemulsion and nanoencapsulation of essential oil of nigella sativa and evaluation of their antibacterial activity against multidrug resistant *klebsiella pneumoniae*” 2026.

➤ **Undergraduate Students Supervised:**

1. Momina Riaz Dar, “Effect of different salt precursors on plant-mediated biosynthesis of zinc oxide nanoparticles” 2020.
2. Anza Qamar, “Effect of UV-C light on plant-mediated biosynthesis of monometallic and bimetallic nanoparticles” 2020.

3. Noor Fatima, "Effect of UV-C light on plant-mediated biosynthesis of monometallic and bimetallic nanoparticles" 2020.
4. Wajeeha Farooq, "*Toona ciliata*-mediated Biosynthesis of Silver and Zinc Oxide NPs and Evaluation of their Biological and Clinical Activities" 2021.
5. Hijab Fatima, "*Toona ciliata*-mediated Biosynthesis of Silver and Zinc Oxide NPs and Evaluation of their Biological and Clinical Activities" 2021.
6. Wajeeha Farooq, "*Toona ciliata*-mediated Biosynthesis of Silver and Zinc Oxide NPs and Evaluation of their Biological and Clinical Activities" 2021.
7. Sundus Babar, "Effects of Light-Emitting Diodes on *Coriandrum sativum*-mediated Biosynthesis, Morphology, Anti-cancerous and Antimicrobial Activities of Zinc Oxide Nanoparticles" 2022.
8. Maham Imran, "Effects of Light-Emitting Diodes on *Coriandrum sativum*-mediated Biosynthesis, Morphology, Anti-cancerous and Antimicrobial Activities of Zinc Oxide Nanoparticles" 2022.
9. Tehreem Fatima, "Solvent Based Extraction of Phytochemicals from Selected Seeds of Medicinal Plants and Evaluation of their Antidiabetic Activities" 2022.
10. Mubashra Inam, "Evaluation of Anti-Diabetic and Anti-Inflammatory Potential of Chemically Synthesized and Green Synthesized Zinc Oxide Nanoparticles" 2023.
11. Zahra Haider, "Evaluation of Anti-Diabetic and Anti-Inflammatory Potential of Chemically Synthesized and Green Synthesized Zinc Oxide Nanoparticles" 2023.
12. Iqra Attique, "*Mentha asiatica*-mediated Biosynthesis of Silver-Zinc oxide (Ag-ZnO) Bimetallic Nanoparticles and Evaluation of their Antidiabetic and Antioxidant Activities" 2023.
13. Maryam Zahra, "*Mentha asiatica*-mediated Biosynthesis of Silver-Zinc oxide (Ag-ZnO) Bimetallic Nanoparticles and Evaluation of their Antidiabetic and Antioxidant Activities" 2023.
14. Seerat Fatima, "*Ocimum Tenuiflorum*-mediated Biosynthesis of Silver Iron (Ag/Fe) Bimetallic Nanoparticles and Evaluation of their Antiglycation and Biocompatibility Activities" 2023.
15. Nimra Arshad, "*Ocimum Tenuiflorum*-mediated Biosynthesis of Silver Iron (Ag/Fe) Bimetallic Nanoparticles and Evaluation of their Antiglycation and Biocompatibility Activities" 2023.
16. Abeer Fatima, "Remediation of Lead-Contaminated Water Using Iron-Zinc Bimetallic Nanoparticles Synthesized by *Azadirachta Indica* Leaf Extract" 2023.
17. Safana Khurram, "Remediation of Lead-Contaminated Water Using Iron-Zinc Bimetallic Nanoparticles Synthesized by *Azadirachta Indica* Leaf Extract" 2023.
18. Warda Fatima, "Evaluation of the anticancer and antifungal activity of Aloe barbadensis mediated iron-silver bimetallic nanoparticles" 2023.
19. Javeria Shafiq, "Synergistic effect of zinc oxide nano-fertilizer and banana peel waste bio-fertilizer on production of bioactive phenolic compounds in *Linum usitatissimum*" 2023.
20. Aleena Ali, "Synergistic effect of zinc oxide nano-fertilizer and banana peel waste bio-fertilizer on production of bioactive phenolic compounds in *Linum usitatissimum*" 2023.
21. Narmeen Waheed, "Synergistic effect of zinc oxide nano-fertilizer and banana peel waste bio-fertilizer on production of bioactive phenolic compounds in *Linum usitatissimum*" 2024.
22. Lala Rukh Khan, "Evaluation of the anticancer and antifungal activity of Aloe barbadensis

mediated iron-silver bimetallic nanoparticles” 2024.

23. Tehreem Athar, “Remediation of Lead-Contaminated Water Using Iron-Zinc Bimetallic Nanoparticles Synthesized by *Azadirachta Indica* Leaf Extract” 2024.
24. Mahnoor Amjad, “Effect of Copper Oxide (CuO) nanoparticles on biomass and production of bioactive phenolic compounds in *Linum usitatissimum*” 2024.
25. Maham Batool, “Effect of Copper Oxide (CuO) nanoparticles on biomass and production of bioactive phenolic compounds in *Linum usitatissimum*” 2024.
26. Iqra Azam Awan, “Evaluation of silver-zinc oxide (Ag-ZnO) nanoparticles efficiency in removal of fluoride content from drinking water” 2024.
27. Sara Maham, “Evaluation of silver-zinc oxide (Ag-ZnO) nanoparticles efficiency in removal of fluoride content from drinking water” 2024.
28. Irha Mujeeb, “*Moringa oleifera*-Coated Biosynthesis of Silver-Zinc Oxide (Ag-ZnO) Bimetallic Nanoparticles and Evaluation of their Antidiabetic Activity in Albino Rats” 2024.
29. Areej Imran, “*Moringa oleifera*-Coated Biosynthesis of Silver-Zinc Oxide (Ag-ZnO) Bimetallic Nanoparticles and Evaluation of their Antidiabetic Activity in Albino Rats” 2024.
30. Syeda Mahnoor Ahmad, “Investigation of the Dye Adsorption Potential of Biogenic ZnO Nanoparticles synthesized from Neem Leaves and Lemon Peels for Textile Wastewater Treatment” 2025.
31. Eisha-tir-Razia, “Investigation of the Dye Adsorption Potential of Biogenic ZnO Nanoparticles synthesized from Neem Leaves and Lemon Peels for Textile Wastewater Treatment”, 2025.
32. Selia Ashraf, “Synthesis of Silver Doped Zinc Oxide/ Graphene Oxide Nanocomposites and Evaluation of Their Antioxidant Activity”, 2025.
33. Syeda Jaleesha Raza, “Synthesis of Silver Doped Zinc Oxide/ Graphene Oxide Nanocomposites and Evaluation of Their Antioxidant Activity”, 2025.
34. Areeba Noor, “Nanoencapsulation of Ethanolic Extracts of *Urtica Dioica* and *Murraya Koenigii* and Evaluation of Their Anti-Oxidant Activities”, 2025.
35. Hamna Tanveer, “Nanoencapsulation of Ethanolic Extracts of *Urtica Dioica* and *Murraya Koenigii* and Evaluation of Their Anti-Oxidant Activities”, 2025.
36. Mahin Zubair, “Synthesis of Berberine loaded Silver-Zinc Oxide Nanoparticles (Ag-ZnONPs) and Evaluation of their Anti-cancerous Effects on the Cell survival and Gene Expression of Caspase-3 in Human Hepatocellular Carcinoma Cell Lines (HepG2)” 2026.
37. Aima Ateeq, “Evaluation of Antidiabetic Activity Of *Moringa Oleifera*-Coated Silver-Zinc Oxide Nanoparticles In Albino Rats” 2026.
38. Raveen Dar, “Evaluation of Antidiabetic Activity Of *Moringa Oleifera*-Coated Silver-Zinc Oxide Nanoparticles In Albino Rats” 2026.
39. Zaina Khan, “Evaluation of antidiabetic activity of *plantago lanceolata* coated silver- zinc oxide nanoparticles in albino rats” 2026.
40. Areeba Shahzad, “Evaluation of antidiabetic activity of *plantago lanceolata* coated silver-zinc oxide nanoparticles in albino rats” 2026.
41. Maha Waseem, “Fabrication of silver zinc oxide nanoparticles and its evaluation against multidrug-resistant *klebsiella pneumoniae*” 2026.
42. Asma Noor, “Evaluation of Shape-Dependent Toxicity of Cerium Oxide Nanoparticles against Brine Shrimp Larvae” 2026.

Conferences / Workshops/Seminar/Symposium participated

• Oral Presentations/Invited Speaker

1. Poster Presentation in, “Synergistic Photothermal–Hormonal Therapy Using Dual Drug-Loaded SPIONs: Enhanced Breast Cancer Cytotoxicity via NIR-Triggered Nanoplatfrom” on 2026 International Conference on New Models for Cancer Prevention and Treatment (NMCPT 2026) held in Shanghai, China on April 18, 2026.
2. I was invited as Oral Speaker in “International Conference on Nanoscience and Nanotechnology (ICONN 2025)”, scheduled for April 14–15, 2025, at the School of Chemical and Materials Engineering (SCME), National University of Sciences and Technology (NUST).
3. **Sumaira Anjum**, Mubashara Inam, Zahra Haider, Bushra Ahmad, Mohammad Soliman, Iftikhar Hussain, Christophe Hano, Differential impact of biogenic and chemically synthesized zinc oxide nanoparticles on anti-aging, anti-oxidant and anti-cancerous activities: a mechanismbased study. “4th International Conference on Antimicrobial Resistance and Alternatives to Antibiotics” organized by Abbottabad University of Science and Technology (AUST), 29-30 November 2024. AUST Abbotabad-Pakistan.
4. **Sumaira Anjum**, Rimsha Chaudhary, Amna Komal Khan, Mariam Hashim, Iram Anjum, Christophe Hano, Bilal Haider Abbasi. Light-emitting diode (LED)-directed green synthesis of silver nanoparticles and evaluation of their multifaceted clinical and biological activities. 6th International conference on Applied Zoology, organized by AZSP, 18-19 December 2023, GCU Faisalabad, Pakistan.
5. Amna Komal Khan, Sullivan Renouard, Samantha Drouet, Jean-Philippe Blondeau, Iram Anjum, Christophe Hano, Bilal Haider Abbasi, **Sumaira Anjum**, Effect of UV Irradiation (A and C) on *Casuarina equisetifolia*-Mediated Biosynthesis and Characterization of Antimicrobial and Anticancer Activity of Biocompatible Zinc Oxide Nanoparticles; International Conference on NanoBiomaterials. “NanoBioMat2023”, organized by Department of Science and Engineering of Oxide Materials and Nanomaterials, 1-7 Gh. Polizu st. Bucharest, 24th November 2023, Romania (Virtual).
6. **Sumaira Anjum**, Abbasi BH, Hano C, Trends in accumulation of pharmacologically important antioxidant-secondary metabolites in callus cultures of *Linum usitatissimum*. International Conference on Food and Applied Sciences organized by Shaheed Benazir Bhutto University Sheringal, 3-5th August 2023, Pakistan.
7. Syeda Itrat Zahra Naqvi, Humera Kausar, Arooj Afzal, Mariam Hashim, Huma Mujahid, Maryam Javed, Christophe Hano, **Sumaira Anjum**, Antifungal Activity of Juglans-regia-Mediated Silver Nanoparticles (AgNPs) against *Aspergillus-ochraceus*-Induced Toxicity in In Vitro and In Vivo Settings 2nd International Conference on Science, Innovation and Technology organized by Kinnaird College for Women University Lahore, 8-10th March 2023, Pakistan.
8. **Sumaira Anjum**, Light-Emitting Diodes: As External Stimulus for Plant-Mediated Biosynthesis and Biological Activities of Silver Nanoparticles Research Symposium on Science and Technology organized by University of West Alabama, 20th August, 2022

- (Virtual).
9. **Sumaira Anjum**, Light Tailoring: Impact of UV-C Irradiation on Biosynthesis, Physiognomies, Anticancerous and other Biological Activities of *Morus Macroura*-Mediated Monometallic (Ag and ZnO) and Bimetallic (Ag-ZnO) Nanoparticles, Scholars International Webinar on Cancer Research and Therapeutics organized by The London Bioscience Innovation Centre, 16-18 May, 2022, United Kingdom (Virtual).
 10. **Sumaira Anjum**, Light-emitting diodes: As external stimulus for plant-mediated biosynthesis and biological activities of silver nanoparticle Webinar on, "Annual Congress on Nanomaterials and Nanotechnology organized by Ulm University, Germany and The University of New Mexico, USA in collaboration with PULSUS and the Editors of Journal of Nanoscience and Nanomedicines, 13th May 2022, United Kingdom (Virtual).
 11. **Sumaira Anjum**, Amna Komal Khan, Anza Qamar, Noor Fatima, Samantha Drouet, Sullivan Renouard, Jean Philippe Blondeau, Bilal Haider Abbasi, Christophe Hano. Light Tailoring: Impact of UV-C Irradiation on Biosynthesis, Physiognomies, and Clinical Activities of *Morus macroura*-Mediated Monometallic (Ag and ZnO) and Bimetallic (Ag–ZnO) Nanoparticles Workshop on Undergraduate Faculty Training STEM Education in Pakistan organized by Virtual University in collaboration with British Council, 14.18 March 2022, Pakistan.
 12. **Sumaira Anjum**, Effect of UV-C on *Morus Macroura*-Mediated Biosynthesis and Clinical Activities of Metallic (Ag and ZnO) and Bimetallic (Ag-ZnO) Nanoparticles. International Conference and Expo on Nanotechnology and Nanomaterials organized by University of Missouri-St. Louis, USA and University of Almeria, Spain in collaboration with Pangea Global Events and Organizing Committee, 16-17th September, Belgium (Virtual).
 13. **Sumaira Anjum**, Effect of UV-C on *morus macroura*-mediated biosynthesis and clinical activities of metallic (Ag and ZnO) and bimetallic (Ag-ZnO) nanoparticles. 3rd webinar on Nanotechnology and Nanomedicines organized by Longdom group SA, 8th October 2020, London UK (Virtual).

Trainings/Seminar/Workshops/Symposium Attended

1. Attended a five-days training course on "Emerging Trends in Agriculture," organized by NCRD (National Centre for Rural Development) September 29th -October 3rd , 2025 in Islamabad.
2. Attend a 2-week training program on "International training program on biosafety and pathogen technologies" organized by Shanghai Medical college of Fudan University, China (27th June-13th July 2025)
3. Organized a Seminar as focal person on, "Fighting Future Pandemics: Innovations in Rapid Vaccine Development" at Department of Biotechnology, Kinnaird College for Women University, Lahore, 2nd October 2024, Pakistan.
4. Attended a Worskop on "2-days Hands on Training on Nanotech Essentials" organized by Agriculture department of Punjab University, 21-22 Oct 2024. Pakistan.
5. Organized a Seminar as focal person on "Nature vs Nurture: Exploring the Interplay of Environment, Genetics and Psychology" at Department of Biotechnology, Kinnaird College for Women University Lahore, 30th April 2024, Pakistan.
6. Capacity Building Training on "The role of the arts and sciences in preparing women for entrepreneurship and financial security" organized by ORIC in Collaboration with

Fulbright Specialist Project by USEFP at Kinnaird College for Women University Lahore, 6th June 2024, Pakistan.

7. Attended a Workshop on “3-hours Workshop on mastering Regression Analysis: Step by Step using SPSS” organized by Dr. Tracy Tina Angelina, CEO, QUVAE Research and Publication, 25th May 2024, Spain (Virtual).
8. Participated in an online open house Poster Competition organized by Royal Society of Chemistry (RSC) at LinkedIn, 3rd March, 2024.
9. COMSTECH Webinar series; Shocks, Stresses and Resilience of Food System in the Arab Region organized by OIC Ministerial Standing Committee on Scientific and Technological Cooperation (COMSTECH), 26th July 2023, Islamabad, Pakistan.
10. 3-days workshop on, “Kazakhstan-Pakistan-Turkey Youth Forum on Biotechnology” organized by COMSTECH, Islamabad, 13-15 September 2022, Pakistan.
11. Symposium on, “IPVS Satellite Symposium on “Human Papillomavirus and Cervical Cancer”, organized by The International Papillomavirus Society & COMSTECH Alliance of Virology Laboratories (CAVL). Islamabad, 22-24th September 2022, Pakistan.
12. 4-days Faculty training workshop on, “BC-HEC Researchers Capacity Building Program” organized by Higher Education Commission and British Council, Training from Coventry University, UK and HEC, 25-28th July, 2022, Pakistan.
13. 5-days workshop on, “National Summer School on Bioinformatics, Theme 2022: Advances in Bioinformatics” organized by Department of Microbiology, The University of Haripur in collaboration with Department of Forestry and Wildlife Management at Forest Academy Murree, 18-22 July 2022, Pakistan.
14. Attended a Seminar on “Application and Optimization of reaction parameters for the synthesis of Nanomaterials” organized by the Department of Chemistry, Kinnaird College for Women University Lahore, 20th May 2022, Pakistan.
15. Webinar on Self-Assessment Report (SAR) writing organized by Quality Enhancement Cell at Kinnaird College for Women Lahore, 29th January 2022, Pakistan.
16. Workshop on In-Silico Epitope Prediction for Covid-19 Vaccine Development, organized by ORIC at Kinnaird College for Women Lahore, 4th November 2021, Pakistan.
17. Symposium on Fisheries and Aquaculture, organized by the Department of Zoology at Kinnaird College for Women Lahore, 30th November 2021, Pakistan.
18. Workshop on “Faculty development and training” organized by Punjab Higher Education Commission (PHEC), 21-25th June 2021, Pakistan.
19. Workshop on “From Lecturing to Eclectic Teaching” organized by Quality Enhancement Cell at Kinnaird College for Women Lahore, 22th May 2021, Pakistan.
20. Seminar on “Innovative Techniques in Livestock and Aquaculture” organized Department of Zoology and the Department of Food and Nutrition at Kinnaird College for Women University, 28th January 2020.