




**PERSONAL INFORMATION     Dr. SADIA QAYYUM**

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 sadiahu83@gmail.com;drsadia@hu.edu.pk  
Sex Female | Date of birth 06/02/1983 | Nationality Pakistani

**RESEARCH INTEREST**

The research activities within the Environmental Microbiology Lab include investigation of microbial degradation of organic compounds, microbial chemotaxis, microbial diversities in natural and polluted environments, and culturomics and micro biomes of different hosts and environments. Nanoparticles and their fate in soil. Ground water and soil remediation techniques.

**WORK EXPERIENCE****12/01/2012–Present     LECTURER**

Hazara University Mansehra, (Pakistan)

**Job Responsibilities**

- Serving as supervisor of BS, MS and PhD students in the field of Environmental Microbiology, Environmental Science & Engineering and Molecular biology.
- Teaching following modules: Water and wastewater technique, Advances in Medical Microbiology, Advances in Microbiology, Molecular mechanism of antimicrobes, Food & dairy microbiology, Biogeochemistry, General microbiology, Environmental Pollution and Public Health, Soil Microbiology, Cell & Tissue Culture Techniques, Mycology, Molecular Biology, Biochemistry, Microbiology, Cell Biology, Practical Techniques, Environmental Microbiology, Immunology, Clinical and Public Health Microbiology, Infectious Diseases and their Control.
- Demonstration of practical techniques to students during laboratory sessions.
- To further help the understanding of principles being taught in lectures.
- To increase the skills of students, through the demonstration of practical equipment, experiments and processes within a laboratory/workshop.
- Dealing with students academic issues.

**06/06/2008–28/12/2011     TEACHING & TRAINING COORDINATOR**

Excel Labs (PVT) Ltd Islamabad, (Pakistan)

**Job Responsibilities**

- Planned and coordinated general and specialized training and education programs.
- Organized training manuals, procedure manuals, multi media visual aids and other educational materials.
- Prepared and presented new employee orientation.
- Evaluated effectiveness of training programs.
- Provided assistance in quality control procedure manuals.
- Follow up on training for Lab staff.
- Was responsible to write up minutes of teaching and training meetings.
- Was responsible to write a complete report from analysis of post test evaluation.
- Assisted in the documentation for Lab QC and software development.

**08/06/2007–28/06/2008     SCIENTIFIC OFFICER (INTERN)**

Ministry of Health Islamabad (Pakistan)

**Job Responsibilities**

- Was responsible for writing Projects in health programs under Ministry of Health, Pakistan

## EDUCATION AND TRAINING

### 18/08/2013–23/06/2016 **PhD in Environmental Sciences and Engineering**

Ocean University of China, Qingdao (China)

Courses Covered;

- Marina Bio geochemistry
- Wastewater Treatment
- Environmental Biotechnology
- Ecological Engineering and Marine Environmental Protection
- Introduction to Chinese Culture

### 07/06/2006–25/06/2008 **M.Phil in Microbiology**

Quaid-i-Azam University, Islamabad (Pakistan)

Courses Covered;

- Advances in Microbiology
- Advances in Molecular Genetics
- Medical Microbiology
- Plant Tissue Culture

### 14/02/2004–01/03/2006 **MSc in Molecular Biology/Biochemistry**

Quaid-i-Azam University Islamabad, Islamabad (Pakistan)

Courses Covered;

- Biochemistry 1
- Cell Biology
- General Genetics
- Molecular Biology
- Protein Chemistry
- Principle of Gene Manipulation
- Research Techniques & Methods of Inst. Analysis
- Immunology
- Microbial Anatomy & Physiology
- Cell Organelles

## ADDITIONAL INFORMATION

### Honours and awards

- Awarded “**Best student of the year**” award and certificate for producing five international publications in one year (2016) in Peer reviewed journals during PhD research work.
- Awarded with “**Gold medal and Distinction Certificate**” for achieving first position in M.Phil Microbiology at Quaid-i-Azam University Islamabad, Pakistan.
- Recipient of the highly competitive fully funded “**Chinese Government Scholarship**” for PhD Environmental Sciences and Engineering at Ocean University Of China.
- Awarded with the “**Silver medal**” for third position in BSC at Army Burn Hall College Abbottabad, Pakistan.

### Projects

- **Principal Investigator (PI)** ;Bio detoxification of industrial dye effluents: Green and Sustainable technology using indigenous resistant fungal isolates’ NRPUR Project # 9047

KPK by Higher Education Commission Pakistan for the year March 2019- March 2021. (3.08954 million PKR)

- Treatment of iron mine tailing with iron oxidizing bacteria and *Sesbania sesban* plant in lab and field scale', NRPU Project no. 5731 KPK by Higher Education Commission Pakistan for the year Feb 2017- Feb 2019. (2.926 million PKR)

## Publications

- **Sadia Q.**, Meng K., Sidra P., Faiza N., Peng C (2019). Optimization of pH, temperature and carbon source for bioleaching of heavy metals by *Aspergillus flavus* isolated from contaminated soil. Main Group Metal Chemistry (MGMC) 42;1-7 (SCI).
- Wajid Hussain, Tariq Mahmood, Jawad Hussain, Niyaz Ali, Tariq Shah, **Sadia Qayyum**. (2019) CRISPR/Cas system: A game changing genome editing technology, to treat human genetic diseases, **GENE**, 685; 70-75. (SCI)
- Z. A. Bhatti, A. Waheed, F. Maqbool, Y.G. Zhao, **S. Qayyum**, Q. Mehmood, F. Faridullah (2019). Microbial fuel cell using UASB as anode and effects of hydrogen peroxide on treatment efficiency. Journal of Water Chemistry and Technology 41 (1); 13-20.
- Ibrar Khan, Maryam Aftab, Sajid Ullah Shakir, Madiha Ali, **Sadia Qayyum**, Mujaddad ur Rehman, Kashif Syed Haleem, Isfahan Touseef. (2019) Mycoremediation of heavy metal (Cd and Cr)–polluted soil through indigenous metallotolerant fungal isolates. Environmental Monitoring Assessment 191:585.
- Ibrar Khan, Maryam Aftab, Sajid Ullah Shakir, Madiha Ali, **Sadia Qayyum**, Mujaddad ur Rehman, Kashif Syed Haleem, Isfahan Touseef. (2019) Mycoremediation: a treatment for heavy metal-polluted soil using indigenous metallotolerant fungi. Environmental Monitoring Assessment. 191:622.
- Sidra P, Asif M, Afsheen A, **Sadia Q**, Faiza N, Shah A (2018). Agarose Hydrogel Beads: An Effective Approach to Improve the Catalytic Activity, Stability and Reusability of Fungal Amyloglucosidase of GH15 Family. Catalysis Letters, (SCI)
- Faiza N, Hakim K, Naushad A, Inamullah, Sidra P, **Sadia Q**, Farrah A, Saira G, Farhana M, Ayesha B (2018). Biochemical and stability analysis of variations of indigenous *Brassica juncea* genotypes in different agro-climatic environmental conditions of Pakistan. International Journal of Biosciences | IJB; Vol. 12, No. 6, p. 139-151.
- Pir Tariq Shah, **Sadia Q.**, Khan I (2018) **Scorpion Venom: A poison or a medicine-Mini review**, Indian journal of Geo-Marine Sciences, Vol 47 (4) 773-778. (SCI).
- **Sadia Q.**, Ibrar K., Zulfiqar B, Changsheng P (2017). Cloning and characterization of F3PYC gene encoding [Pyruvate carboxylase in Aspergillus flavus \(F3\)](#) strain. 3Biotech 7(4):245 (SCI).
- Khan I., **Sadia Q.**, Chi ZM (2017). Microbial Organic acids production, Bio-synthetic mechanism and Applications-Mini Review. Indian Journal of Geo-Marine Sciences. 46 (11): 2165-2174 (SCI).
- Khan I., **Sadia Q**, Ahmed S., Maqbool F., Tauseef I., Haleem K, Chi ZM (2017). Cloning and characterization of pyruvate carboxylase gene responsible for calcium malate overproduction in *Penicillium viticola*. **GENE**, 605: 81–91. (SCI)
- Farhana M., Bhatti Z.A., Nazir H., **Sadia Q.**, Zhao Y., Khan I., Kamal R., Pervez A (2017). Confectionary waste water treatment through upflow microbial fuel cell, Desalination and water treatment 99; 248-254 doi: 10.5004/dwt/2017.21695. (SCI)
- **Sadia Q.**, Ibrar K., Ke M., Xiaolong Z., Yangguo Z., Changsheng P. (2016). Bioaccumulation of heavy metals from aqueous solution using indigenous fungal isolates. Indian Journal of Geo- Marine Science. Vol 45 (8/9) (SCI).
- **Sadia Q.**, Ibrar K., Yangguo Z., Farhana M., Changsheng P. (2016). Sequential extraction procedure for partitioning of Pb and Cr in artificial and contaminated soil. Main Group metal chemistry. 39(1-2): 49–58. (SCI)
- **Sadia Q.**, Ibrar K., Farhana M., Fenglin T., Qingbao G., Bhatti Z., Changsheng P. (2016). Fungal strain *Aspergillus flavus* F3 as a potential 1 candidate for the removal of Lead (II) and Chromium (VI) from the contaminated soil. Main

- Group Metal Chemistry (MGMCM). 39 (3). (SCI).
- Khan I., **Sadia Q.**, Ahmed S., Chi ZM. (2016). Molecular cloning and sequence analysis of a PVGOX gene encoding glucose oxidase in *P. viticola* F1 strain and its Expression Quantitation. *Gene*, 5,592 (2): 291-302.(SCI).
  - Khan I., **Sadia Q.**, Ahmed S., Liu GL., Haleem K, Rehman M, Liu G, Chi ZM. (2016). Isolation and Characterization of Medicinally Important Marine *Penicillium* Isolates. *Pakistan journal of Zoology*, 49(2): 435-441 (SCI).
  - **Sadia Q.**, Ibrar K., Farhana M., Yangguo Z., Qingbao G., Changsheng P. (2015). Isolation and characterization of heavy metal resistant fungal isolates from industrial soil, China. *Pakistan journal of Zoology*, QPJZ-0240-2015, 48 (5). (SCI)
  - Khan I., **Sadia Q.**, Chi ZM. (2016). "High level production of Sodium gluconate by using *Penicillium viticola* F1 strain". *Pakistan journal of Botany*. Accepted (In Press). (SCI).
  - **Sadia Q.**, Ibrar K., Ke M., Yangguo Z., Changsheng P. (2015). Remediation technologies for heavy metals contaminated soil. *Journal of International academic research for Multidisciplinary*, ISSN: 2320-5083. Vol 3 (11).
  - Ahmad T., Bhatti Z.A., Maqbool F., Mahmood Q., Faridullah., **Sadia Q.**, Mushtaq N. (2015). A comparative study of synthetic and natural coagulants for silver nanoparticles removal from wastewater. *Desalination and Water Treatment*. 1-6 Taylor & Francis (SCI).
  - Bhatti Z.A., Farhana M., **Sadia Q.**, Javeria, F., Romana, M., Yang-Guo, Z. (2015). Characterization of toxic metals adsorption isotherms on activated carbon using locally design jar test apparatus. *Science, Technology and Development*. 34 (2): 109-113 (SCI).
  - Bhatti Z.A., Farhana M., Javeria F., **Sadia Q.**, Amir H.M. (2015). Survey of waste collection and its energy generation potential in Nawanshehr, Pakistan, *Science, Technology and Development*, 34 (3): 130-134 (SCI).
  - Nida Kanwal, Aamir Ali Shah, **Sadia Qayyum**, Fariha Hasan. Optimization of pH and temperature for degradation of tyre rubber by *Bacillus* sp. S10 isolated from sewage sludge. *International Biodeterioration and Biodegradation*. 2015, 123;154-160. (SCI)
  - Farhana Maqbool, Umer Farooq, **Sadia Qayyum**, Zulfiqar Ahmed Bhatti, Saira Gul, Ibrar Khan, Muhammad Akhlaq. Antibacterial transdermal gel containing garlic extract with olive oil as natural permeation enhancer. *Bangladesh Journal of Pharmacology*.
  - Farhana Maqbool, Hameeda Nasir, Zulfiqar A. Bhatti, **Sadia Qayyum**, Muhammad Azeem, Mudassar Shah. Antimicrobial effects of *Cinnamomum cassia* and *Cinnamomum tamala* extracts in different solvents on human skin microflora. *Journal of Asian Natural products research*.

## PhD under Supervisor

### 1. Sabeena Irfan

Biodetoxification of dye industrial effluent by indigenous resistant Microbial strain

## M.Phil produced as Supervisor

### 1. Muhammad Umer

Research Title; Antimicrobial activity of silver nanoparticles synthesized from leaves of *catharanthus roseus*

### 2. Mustafa Asghar

Research Title; Characterization of Aflatoxins Degrading Bacteria Isolated from Soil

### 3. Saffa Aftab

Research Title; Simultaneous removal of iron and hexavalent chromium via slow sand filter inoculated with *thiobacillus ferrooxidans*

## 4. Samra Basharat

Research Title; Isolation, identification and characterization of different pigment producing bacteria from soil

## 5. Maryam Ali

Research Title; Isolation and identification of oligeneous fungi from soil rich in cellulosic waste

## 6. Jan Muhammad Khan

Research Title; Isolation, identification and antibiogram of *salmonella* for early chick mortality in broilers

## 7. Safi Ullah Jan

Research Title; Seroprevalence and clinical findings of Dengue fever in Khyber teaching hospital Peshawar

## 8. Atta Ur Rehman

Research Title; Antibacterial, antifungal and Phytochemical activity of *Cissampleos pareira* Plant

## 9. Tauseef Ullah

Research Title; Synthesis, characterization and antimicrobial activity of schiff base metal complexes

## 10. Shakir Ubaid

Research Title; Isolation and screening of extracellular amylase from halophilic bacteria

## 11. Sana Farheen

Research Title; Isolation and identification of biosurfactant producing bacteria from different environmental samples

## 12. Abdul Nasir

Research Title; Extraction of peroxidase enzyme from different vegetables for biodegradation of vat dyes

## 13. Mir Alam Khan

Research Title; Screening of red meat samples of islamabad for the presence of pathogenic *e.coli* serotype O157: H7

## 14. Abrar Hussain

Research Title; Comparative studies on dye degrading fungal isolates

## 15. Afrazum Khan

Research Title; Prevalence of H9 avian influenza viruses in both commercial and (back yard) rural poultry at District Mansehra

## 16. Mehreen Jahan

Research Article; The synthesis and characterization of stabilized starch or carboxymethyle coated magnetite nanoparticles and their effects on antimicrobial activity\_

## Conferences

- Organized and participated workshop on “**Biosafety training in KPK with a skill based approach**” in Hazara University Mansehra on Nov 16-18, 2016.
- Organized & facilitated “**Two Days Workshop on personal hygiene & its importance in food handling**” in “**Canadian high commission**” on 22<sup>nd</sup> & 23<sup>rd</sup> Dec, 2009.
- Participated in National Seminar on “**Effect of Pollution on Water Quality and Aquatic Life**”
- held at **national Agricultural Research Center (NARC) Islamabad**, on June 26- 27, 2007.
- Participated in National Seminar on “**Biosafety and Biosecurity Initiatives**” on June 18- 19 under the auspices of US Department of State; Biosecurity Engagement Programme Pakistan Agricultural Research Council (PARC) Planning Commission of Pakistan.

- Participated in **6<sup>th</sup> International Biennial Conference of Microbiology**, held at Department of Microbiology, **Quaid-i-Azam University, Islamabad** from March 18-21, 2007.
- Organized & participated in workshop “**Strengthening Management groups**” held in **Excel lab Islamabad** on 21 Oct 2008.
- Organized & participated in workshop on “**Communication skills & Group dynamics**” held in Excel Lab in March, 2009.
- Organized & participated in two days Workshop on “**Communication skills**” held in **Excel Labs Islamabad** on Sep 4<sup>th</sup> & 5<sup>th</sup> 2009.

## PERSONAL SKILLS

Mother tongue(s) Urdu

Foreign language(s)	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
Chinese	A1		A1		
English	C2		C2		C2

Levels: A1 and A2: Basic user - B1 and B2: Independent user - C1 and C2: Proficient user

Common European Framework of Reference for Languages

- Communication skills
- Good communications skills, verbal and written.
  - Ability to network and liaise with external collaborators.
  - Ability to work in a team and independently.
  - Attention to details, Problem-solving and Decision-making.

Organisational / managerial skills good organizational skills

Digital skills SELF-ASSESSMENT

Information processing	Communication	Content creation	Safety	Problem solving
Proficient user	Independent user	Independent user	Proficient user	Independent user

Digital skills - Self-assessment grid

Windows, LINUX/UNIX,

- Excellent proficiency in Ms Office (Word, Excel, PowerPoint).
- Learning to program in Perl and Python.

Other skills **LABORATORY SKILLS**

### Microbiology

Aseptic and sterile techniques, cultivation of hazard class 1 and 2 organisms, Gram staining, optical microscopy, plating methods (streak, spread, pour, replica), liquid and solid culture of bacteria and fungi, isolation and transformation, use of biological safety cabinets, enumeration and identification of bacteria and fungi, diagnostic biochemical tests for enteric bacteria, use of selective media, agglutination test, antibiotic resistance assay (MIC and disc diffusion), phenotypic and genotypic assays of bacteria and fungi, preparation and purification of bacterial outer membrane proteins, Gas Chromatography (GC-FID), Atomic absorption spectrometer (AAS), Fourier Transform infrared spectroscopy (FTIR), Scanning electron microscopy (SEM) and so on.

### Molecular Biology/Cell Biology/Biochemistry

DNA extraction and purification, restriction enzyme digests, Pulsed Field Gel Electrophoresis (PFGE), primer designing, PCR, vector cloning, digestions, ligations, transformation, plasmid profiling, Cell and tissue culture, Southern blotting and Hybridisation, ELISA.

- **Environmental Engineering**

Atomic absorption Spectrophotometer (AAS), Scanning electron Microscopy (SEM), Gas Chromatography (GC-MS, GC-FID), Fourier transform infrared spectroscopy (FTIR).

## References

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