

Dr. Muhammad Tariq Rafiq

Assistant Professor of Environmental Sciences

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International Islamic University, Islamabad.

Specialization: Environmental Remediation and Resource Renewal

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Education:

MS in Environmental Sciences, University of Paris 1, Patheon – Sorbonne, France (2003)

PhD in Environmental Sciences, Zhejiang University, Hangzhou, China (2015)

Background or Introduction:

Dr. Muhammad Tariq Rafiq joined department of Environmental Science, International Islamic University, and Islamabad as lecturer in August, 2008. He did his MS from University of Paris-Sorbonne, Paris, France and worked as Research fellow with Man and Biosphere (MAB) program of UNESCO at Fontainebleau, France. He also worked as Commercial Attaché at Embassy of France in Pakistan. Dr. Rafiq completed his PhD in Environmental Science from Zhejiang University, China in 2015 and worked as Assistant Professor of Environmental Sciences at IIUI since August, 2015. He joined Sulaiman Bin Abdullah Aba Al-Khail-Centre for Interdisciplinary Research in Basic Sciences (SA-CIRBS), International Islamic University Islamabad in September, 2018.

Dr. Rafiq was awarded highly competitive and prestigious scholarships by French Government and Higher Education Commission Pakistan to peruse his MS studies in France and PhD studies in China respectively. His research articles have been published in highly reputed and scientifically recognized international journals in the field of Environmental Sciences like, Science of the Total Environment, Journal of Environmental Quality, Ecotoxicology and Environmental safety and Chemosphere. Dr. Rafiq has authored 23 research articles with a cumulative impact factor of more than 70. He is serving as referee of prestigious journals like Environmental Pollution, Science of the Total Environment and Archives of Environmental Contamination and Toxicology. Dr. Rafiq teaches courses in Environmental Sciences at PhD, MS and BS levels. He has supervised and successfully produced 12 MS students in Environmental Sciences. Three PhD students are also working under his research supervision.

Research Interests and Focus:

My research focuses on establishment of Environmental Quality Standards of heavy metals for different textured soils based on potential dietary toxicity. I also studied the impact of bioavailability of heavy metals on Plants and Human health.

Research Grants/Awards/Honors:

- SRGP research grant (Rs. 0.5 million) from Higher Education Commission, *Phytoavailability and bioaccessibility of Lead (Pb) in different spinach cultivars grown on Lead contaminated soils. A model for assessment of soil and food safety.* (Co-PI: Dr. Muhammad Tariq Rafiq)

Current Research Students:

MS Research Student

| Student name | Status |
|-----------------|----------|
| Nosheen Khan | Research |
| Komal Hameed | Research |
| Saher Chaudhary | Research |

Research Publications (2018-2020):

- Biochar amendment improves alpine meadows growth and soil health in Tibetan plateau over a three-year period. *Science of the Total Environment* (2020) 717:135296
- Effect of poultry litter biochar on chromium (Cr) bioavailability and accumulation in spinach (*Spinacia oleracea*) grown in Cr-polluted soil. *Arabian Journal of Geosciences* (2019) 12:57.
- Biochar alleviates Cd phytotoxicity by minimizing bioavailability and oxidative stress in pakchoi (*Brassica chinensis* L.) cultivated in Cd-polluted soil. *Journal of Environmental Management* 250 (2019) 109500.
- Climate Change Perceptions and Adaptive Actions by Pastoral Community on the Tibetan Plateau, China. *Applied Ecology and Environmental Research* (2019) 17(4):7987-8009.
- Effects of elevated CO₂ and endophytic bacterium on photosynthetic characteristics and cadmium accumulation in *Sedum alfredii*. *Science of the Total Environment* (2018) 643: 357–366.
- Synthesis of biochar from sugarcane filter-cake and its impact on physiological performance of lettuce (*Lettuce sativa*) grown on cadmium-contaminated soil. *Arabian Journal of Geosciences* (2018) 11:634.

Conferences and Workshops:

- Environmentally Sustainable Development (ESDev-VIII), Department of Environmental Sciences, COMSATS University Islamabad, Abbottabad Campus. 22nd August, 2019.
- Applied Biotechnology and Biocomputing (AB2), Department of Biological Sciences, IIUI. 8th February, 2019.
- 1st Annual Conference on "The Current Usage of Nanotherapeutics and Biodrugs. Quaid-e-Azam Auditorium Old Campus, IIU. 13th December, 2018.
- Environmentally Sustainable Development (ESDev-VII), Department of Environmental Sciences, COMSATS University Islamabad, Abbottabad Campus. 28th August, 2017.
- International Conference on Water Processing for Sustainable Development. UNESCONUST, Islamabad. 8th Feb, 2017.
- International Conference on "Training and Capacity Building in Sustainable Agricultural Water Management to Address Food Security and Social Instability in Pakistan, PMAS Arid Agriculture University, Rawalpindi. June 27-29, 2018.
- International Workshop on "Phytotechnologies for Environmental Cleanup, Institute of Environmental Science and Engineering, NUST, Islamabad. 5th to 7th August, 2018.
- Strategic Approach to International Chemicals Management (SAICM), 30th to 31st March 2010. Ministry of Environment, Islamabad, Pakistan.