

Amna Ijaz, PhD

PERSONAL INFORMATION

Date of Birth 30/08/1989; Lahore, Pakistan
Nationality Pakistani
E-mail aijaz@mtu.edu
Telephone +92 311 415 0027
ORCID ID [0000-0001-8727-7739](https://orcid.org/0000-0001-8727-7739)

EDUCATION

- 08/2016-08/2021 **PhD in Chemistry** from Department of Chemistry, Michigan Technological University, Houghton, MI, USA
- 09/2012-09/2014 **MPhil in Biotechnology and Genetic Engineering** from National Institute for Biotechnology and Genetic Engineering, Pakistan Institute of Engineering and Applied Sciences, Faisalabad, Pakistan
⇒ Thesis: *Remediation and detoxification of sewage effluent by microbiologically enhanced floating treatment wetlands*
- 08/2007-08/2011 **BSc (Hons) in Biotechnology** from Government College University, Lahore, Pakistan
⇒ Thesis: *Predicting SUMOylation and Ubiquitination of lysine residues*

ACADEMIC EDITING EXPERIENCE

- 11/2021-Present **Freelance (remote) Academic Editor** at Charlesworth Author Services, Huddersfield, England
⇒ Edited or proofread >170 manuscripts in various stages of preparation for submission to peer-reviewed journals
⇒ Subjects covered: Physical sciences, particularly chemistry and environmental sciences; all fields of biology
- 01/2021-09/2021 **Freelance (remote) Academic Editor** at AsiaEdit, Wan Chai, Hong Kong
⇒ Edited ~35 manuscripts in various stages of preparation for submission to peer-reviewed journals
⇒ Subjects covered: All fields of life sciences
- 06/2017-12/2019 **Freelance (remote) Academic Editor** at Editage, Cactus Communications, Mumbai, India
⇒ Edited ~90 manuscripts in various stages of preparation for submission to peer-reviewed journals
⇒ Subjects covered: Life sciences, particularly molecular biology

RESEARCH EXPERIENCE

- 10/2022-11/2023 **Postdoctoral Researcher** with Dr Barbara D'Anna and Dr Brice Temime-Roussel at Laboratoire de Chimie de l'Environnement, Aix-Marseille Université, Marseille, France
- 02/2021-08/2021 **PhD Intern** with Dr Swarup China at the Environmental Molecular Sciences Laboratory, Pacific Northwest National Laboratory, Richland, WA, USA
- 08/2018-08/2021 **PhD Fulbright Scholar** with Dr Lynn Mazzoleni at Department of Chemistry, Michigan Technological University, Houghton, MI, USA
- 09/2012-09/2014 **MPhil Student** with Dr Muhammad Afzal at National Institute for Biotechnology and Genetic Engineering, Pakistan Institute of Engineering and Applied Sciences, Faisalabad, Pakistan

DOCTORAL DISSERTATION

- Title *High-resolution molecular characterisation of complex environmental mixtures: Aquatic dissolved organic matter and wildfire-influenced aerosol*
- Open-access <https://doi.org/10.37099/mtu.dc.etr/1235>
- Supervisor Dr Lynn Mazzoleni
- Defended 28/07/2021
- Content covered ⇒ Investigated molecular composition of wildfire smoke using ultrahigh-resolution

mass spectrometers: 21-T/15-T FT-ICRs and FT-Orbitrap Elite
⇒ Tested complementary ionisation techniques (ESI and LDI) for characterisation of complex mixtures
⇒ Developed automated and semi-automated data processing routines with R/RStudio and Python

PUBLICATIONS IN PEER-REVIEWED JOURNALS

- I **Ijaz, A.**, Kew, W., Cheng, Z., Mathai, S., Lata, N.N., Kovarik, L., Schum, S., China, S., Mazzoleni, L.R. (2023). Molecular and physical composition of tar balls in wildfire smoke: An Investigation with complementary ionisation methods and 15-Tesla FT-ICR mass spectrometry. *RSC Environmental Science: Atmospheres*.
<https://doi.org/10.1039/D3EA00085K>
- II Vandergrift, G. W., Lata, N. N., Mathai, S., **Ijaz, A.**, Cheng, Z., Shrivastava, M., ... & China, S. (2023). Case study evaluation of size-resolved molecular composition and phase state of carbonaceous particles in wildfire-influenced smoke from the Pacific Northwest. *RSC Environmental Science: Atmospheres*.
<https://doi.org/10.1039/D3EA00058C>
- III **Ijaz, A.**, Kew, W., China, S., Schum, S. K., & Mazzoleni, L. (2022). Molecular characterization of organophosphorus compounds in wildfire smoke using 21-T Fourier Transform-Ion Cyclotron Resonance mass spectrometry. *Analytical chemistry*.
<https://doi.org/10.1021/acs.analchem.2c00916>
- IV Hawkes, J., D'Andrilli, J., Agar, J., Barrow, M., Berg, S., Catalan, N., Chen, H., Chu, R., Cole, R., Dittmar, T., Gavard, R., Gleixner, G., Hatcher, P., He, Chen., Hutchins, R., **Ijaz, A.**, Jones, H., Kew, W., et al. (2020). An international laboratory comparison of dissolved organic matter composition by high-resolution mass spectrometry: Are we getting the same answer? *Limnology and Oceanography, Methods*.
<http://doi.org/10.1002/lom3.10364>
- V Afzal, M., Rehman, K., Shabir, G., Tahseen, R., **Ijaz, A.**, Hashmat, A. J., & Brix, H. (2019). Large-scale remediation of oil-contaminated water using floating treatment wetlands. *NPJ Clean Water*. <https://doi.org/10.1038/s41545-018-0025-7>
- VI Rehman, K., **Ijaz, A.**, Arslan, M., & Afzal, M. (2019). Floating treatment wetlands as biological buoyant filters for wastewater reclamation. *International Journal of Phytoremediation*. <https://doi.org/10.1080/15226514.2019.1633253>
- VII **Ijaz, A.**, Iqbal, Z., & Afzal, M. (2016). Remediation of sewage and industrial effluent using bacterially assisted floating treatment wetlands vegetated with *Typha domingensis*. *Water Science and Technology*. <https://doi.org/10.2166/wst.2016.405>
- VIII **Ijaz, A.**, Imran, A., Haq, M. A., Khan, Q. M., & Afzal, M. (2016). Phytoremediation: Recent advances in plant endophytic synergistic interactions. *Plant and Soil*.
<https://doi.org/10.1007/s11104-015-2606-2>
- IX **Ijaz, A.**, Shabir, G., Khan, Q. M., & Afzal, M. (2015). Enhanced remediation of sewage effluent by endophyte-assisted floating treatment wetlands. *Ecological Engineering*.
<https://doi.org/10.1016/j.ecoleng.2015.07.025>

WORKS UNDER REVIEW OR IN PREPARATION

- I Simpson, W.R., Mao, J., Fochesatto, G. J.,... Holen, A.L., Huff, D., **Ijaz, A.**, Johnson, S. et al., Overview of the Alaskan Layered Pollution and Chemical Analysis (ALPACA) Field Experiment. **Under review** at *ES&T Letters* since November 2023
- II **Ijaz, A.**, Temime-Roussel. B., Cesler-Maloney, M., Chazeau, B., Brett, N., Law. K.S., Bekki, S., Mao, J., Fochesatto, J., Simpson, W., D'Anna, B. Characterisation and source apportionment of wintertime organic aerosol with a CHARON PTR-ToF-MS in Fairbanks, Alaska. **In preparation** for *Atmospheric Chemistry and Physics*, 2024
- III **Ijaz, A.**, Mathai, S., Zezhen, C., China, S. Molecular characterisation of primary organic aerosol from burning of mixed solid trash under hazy conditions. **In preparation** for *Environmental Science and Technology Letters*, 2024

CONTRIBUTIONS TO CONFERENCES

- 11/2023 iCACGP-IGAC ECR Virtual Conference, GatherTown (**presenter**)
⇒ Poster: *Quantifying the contributions of local sources of organic aerosol during wintertime in Fairbanks, Alaska, with high-resolution online CHARON PTR-ToF MS analysis*
- 10/2023 European Aerosol Conference, Malaga, Spain (**presenter**)
⇒ Platform talk: *Characterisation and source apportionment of wintertime organic aerosol with a CHARON PTR-ToF MS in Fairbanks, Alaska*
- 12/2021 AGU Fall Meeting, New Orleans, LA, USA (**contributor**)
⇒ Poster: *Vertical profile of phase state and chemical composition of atmospheric aerosol collected at the Southern Great Plains site*
- 11/2021 Conference of the Parties 26, Glasgow, Scotland (**moderator/presenter**)
⇒ Press conference: *The Youth Environmental Alliance in Higher Education: Voice of optimism at UN Climate Change Conference UK 2021*
- 02/2021 Ocean Sciences Meeting, San Diego, CA, USA (**presenter**)
⇒ Poster: *Detailed molecular formula compositions of complex dissolved organic matter mixtures from diverse environments obtained by Fourier transform-orbitrap elite mass spectrometry*

TEACHING EXPERIENCE

- 10/2021-07/2022 **Afiniti Fellow, Women at the Frontiers of Science, Technology, and Innovation** at Lahore University of Management Sciences, Lahore, Pakistan
⇒ As Adjunct Faculty, introduced and taught a course titled "*Climate Change: Science, Impacts, and Policy*" to senior undergraduates (35 students)
- 08/2020-12/2021 **Teaching Fellow** at Youth Environmental Alliance in Higher Education (YEAH) and Michigan Technological University, Houghton, MI, USA (Supervisor: Dr Sarah Green)
⇒ Led a team of 8 students from 5 institutes in the US, Peru, and England to develop a mini-research project pertaining to United Nations SDGs for the 2nd International Conference (virtual) of the YEAH Network (December 09, 2020)
- 08/2019-01/2020 **Teaching Assistant** at Department of Chemistry, Michigan Technological University, Houghton, MI, USA (Supervisor: Dr Lynn Mazzoleni)
⇒ Supervised experiments for a course titled "*Instrumental Analysis*"

HONOURS AND AWARDS

- 08/2016-08/2021 **Fulbright Foreign Student Program Grant** (5 years) by United States Department of State, Washington DC, USA
- 03/2011 **Roll of Honour** by Government College University Lahore, Pakistan for services as Editor of fortnightly university newsletter: *The Gazette*
- 08/2010-08/2010 **Exchange Visit to Bangladesh** granted by The Ministry of Foreign Affairs, Pakistan, and Bangladesh High Commission, Bangladesh
- 08/2010 **Certificate of Distinction** by Government College University Lahore, Pakistan for services as Co-Editor of fortnightly university newsletter: *The Gazette*
- 08/2009 **Certificate of Merit** by Government College University Lahore, Pakistan for services as Associate Editor of annual literary university magazine: *The Ravi*