

Tanzina Akther

Department of Earth and Atmospheric Sciences

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Education Background

- Aug 2020-
Till date** **PhD candidate**, Department of Earth and Atmospheric Sciences
Research advisor: Dr. Bernhard Rappenglück
CGPA: 3.945
Dissertation: Reactive Organic Carbon (ROC) Emissions from Unconventional Sources and Their Impact on Air Quality
- Nov 2016-
Feb 2018** M.S. Inorganic and Analytical Chemistry, University of Dhaka
CGPA: 3.93/4.00 (4th out of 24)
Thesis title: Particulate matters (PM₁₀, PM_{2.5} and PM_{1.0}) and gaseous pollutants (NO₂ and TVOC) exposure to indoor environment and the association of fine PM with lung function in Dhaka city, Bangladesh.
- Jan 2012-
May 2016** B.S. Chemistry, University of Dhaka
CGPA: 3.62/4.00 (5th out of 90)

Research Interests

- Meteorological impact of air pollutants
- Atmospheric measurements and chemical analysis
- Atmospheric chemical compositions and their effects on human health and climate change

Research Experiences & Internship

Jun- Aug 2022 & 2021, R&D Intern, Viswa Lab

- Calibration & Determination of Naphthenic Acid Number (NAN) from fuel oil using FTIR, setting up new instruments and conducting some tests and
- Prepared the SOP for each test so that the lab staff can easily handle the instrument and run the test. The list of recent instruments I used is as follows: “NOACK Volatility Tester”, “Water Separability Tester” & “Air Release Value Tester”
- Studied the stability of base marine fuel oil and 10% coal infused fuel oil by S-Value by ROFA France. A report on the stability test and its results were submitted.

Apr – Jun 2019 Guest Researcher, Leibniz Institute for Tropospheric Research (TROPOS)

- Completed the data analysis for two years of continuous measurement of indoor and outdoor particle number size distribution (PNSD) of fine and ultrafine particles (0.01 to 0.8 µm).
- Examined particles emissions of different indoor sources and estimated their size-resolved contribution to the indoor concentrations using MATLAB.

Honors & Awards

2022 Travel grant for the 15th iCACGP Quadrennial Symposium/17th IGAC Science Conference and iCACGP/IGAC Early Career Short Course, 8-15 September 2022, Manchester, UK

- 2022** University of Houston, Alumni Association Scholarship, Natural Science & Mathematics, University of Houston
- 2021** Outstanding Academic Achievement Award in Atmospheric Science, University of Houston
- 2020** Graduate tuition fellowship (GTF) for Fall 2020 and Spring 2021, Department of Earth and Atmospheric Sciences, University of Houston
- 2019** Travel grant for training on Aerosol Physics, Measurement and Sampling, 7-24 May 2019, Hytiaala, Finland
- 2018** Outstanding Graduate Scholarship for having excellent result in undergraduate level from Department of Chemistry, University of Dhaka
- 2018** Travel grant for the 14th iCACGP Quadrennial Symposium/15th IGAC Science Conference and iCACGP/IGAC Early Career Short Course, 21-30 September 2018, Japan
- 2018** Best oral presentation award from the conference on Weather Forecasting and Advances in Physics (CWFAP), 11-12 May, 2018, KUET, Bangladesh
- 2018** National Science and Technology Fellowship 2017-18 for outstanding thesis work

Publications

- Akther, T.**, Rappenglueck, B., Osibanjo, O., Retama, A., & Rivera-Hernández, O. (2023). Ozone precursors and boundary layer meteorology before and during a severe ozone episode in Mexico City. *Chemosphere*, 318, 137978.
- Mohammadi, A., Soleimani, A., Abdolahnejad, A., Ahmed, M., **Akther, T.**, Nemati-Mansour, S., Raeghi, S., Rashedi, G.H. and Miri, M. (2022). SARS-CoV-2 detection in hospital indoor environments, NW Iran. *Atmospheric pollution research*, 13(8), p.101511.
- Soleimani, A., Toolabi, A., Mansour, S. N., Abdolahnejad, A., **Akther, T.**, Fouladi-Fard, R., Miri, M; and Mohammadi, A. (2022). Health risk assessment and spatial trend of metals in settled dust of surrounding areas of Lake Urmia, NW Iran. *International Journal of Environmental Analytical Chemistry*, 1-14.
- Akther T**, Ahmed M, Shohel M, Ferdousi F K, Salam A. (2018) Particulate Matters and Gaseous Pollutants in Indoor Environment and Association of Ultra-fine Particulate Matters (PM_{1.0}) with Lung Function, *Environmental Science and Pollution Research*, 26(6):5475-5484, doi: 10.1007/s11356-018-4043-2.
- Ahmed M, Hossain A, **Akther T**, Shohel M, Salam A. (2018) Chemical Composition and Source Identification of Fog Water at an Indo-Gangetic Plain (IGP) Outflow Location (Coastal Bhola Island), Bangladesh. *Journal of Environmental Pollution and Management* 1: 104.
- Ahmed M, Das M, Afser T, Rokonujjaman M, **Akther T**, Salam A. (2018) Emission of Carbonaceous Species from Biomass Burning at the Traditional rural Cooking Stove in Bangladesh. *Open Journal of Air Pollution*, 07(04):287-297, doi: 10.4236/ojap.2018.74014.
- Mou S A, **Akther T**, Shoeb M, Sultan A, Nahar N. (2017) Studies of Preservatives and Coloring Agent in Jam and Jelly. *Dhaka University Journal of Science*, 65(1) 83-84.

Instrumental Skill

Gas Chromatography-Mass Spectrometry (GC/MS), NOACK Volatility Tester, Water Separability Tester, Air Release Value Tester, S-Value by ROFA France, Cauty, Fourier Transform Infrared Spectroscopy (FTIR), Viscosity meter, Density meter, Inductively Coupled Plasma-Optical Emission Spectrometry (ICP-OES), Atomic Absorption Spectrophotometer (AAS), UV-Visible Spectrophotometer, CO monitor, PM Samplers (TSP, PM₁₀, PM_{2.5}), STS 25 sequential tube sampler.

Volunteering Activities

- Hosted oral session of 35th Annual Student Research Conference (SRC), 29 April, 2022, Earth and Atmospheric Sciences, University of Houston, USA.
- IGAC Early career networking workshop, 7-10 sept, 2021- worked as digital production crew.

Membership

- 2023, iCACGP-IGAC Early Career scientific steering committee (EC-SSC)
- 2021, American Geophysical Union (AGU)
- 2021, American Meteorological Society (AMS)

Key Workshops, Conferences & Training

- *35th Annual Student Research Conference*, 29 April, 2022, University of Houston (virtual oral presentation)
- *27th Annual Milton B. Dobrin Lecture*, spanning hydrocarbons to humanitarianism: Where is geophysics going? 8 March 2021, University of Houston (virtual poster presentation)
- *Aerosol Physics, Measurement and Sampling*, 17-24 May, 2019 Hytiaala, Finland
- *35th Bangladesh Chemical Congress*, 7-9 December, University of Dhaka (**poster presentation**)
- *14th iCACGP Quadrennial Symposium/15th IGAC Science Conference and Early Career Short Course*, 25-30 September, 2018, Takamatsu, Kagawa, Japan (**poster presentation**)
- *Fundamental of Air Pollution and Source Apportionment of Air Pollutants*, 6-7 July, 2018, Department of Chemistry, University of Dhaka, Bangladesh
- *Conference on Weather Forecasting & Advances in Physics*, 11-12 May, 2018, Department of Physics, KUET, Bangladesh (**oral presentation**)