

# 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: 3.934**  
**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 (4<sup>th</sup> out of 24)  
**Thesis title:** Particulate matters (PM<sub>10</sub>, PM<sub>2.5</sub> and PM<sub>1.0</sub>) and gaseous pollutants (NO<sub>2</sub> 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 (5<sup>th</sup> 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**, Rappenglück B., S. Osibanjo O., Retama A., Rivera-Hernández O. (2022) Ozone precursors And Boundary Layer Meteorology Before and During a Severe Ozone Episode in Mexico City. *Chemosphere*, under review.
- 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<sub>1.0</sub>) 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 (GCGC-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, PM<sub>10</sub>, PM<sub>2.5</sub>), STS 25 sequential tube sampler.

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## Volunteering Activities

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- Hosted oral session of 35<sup>th</sup> 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.

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## Membership

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- 2021, American Geophysical Union (AGU)
- 2021, American Meteorological Society (AMS)

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## Key Workshops, Conferences & Training

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- *35<sup>th</sup> Annual Student Research Conference, 29 April, 2022, University of Houston* (virtual oral presentation)
- *27<sup>th</sup> 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*
- *35<sup>th</sup> Bangladesh Chemical Congress, 7-9 December, University of Dhaka* (**poster presentation**)
- *14<sup>th</sup> iCACGP Quadrennial Symposium/15<sup>th</sup> IGAC Science Conference and Early Carrier 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**)