

## CURRICULUM VITAE

### **Dr. Madhuri Verma**

M.Sc., Ph.D. (Chemistry)

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Dr. Madhuri Verma currently working as Assistant Professor (Adhoc) at Pt. Ravishankar Shukla University, Raipur, Chhattisgarh. She has eight years of academic and research experience in the fields of analytical instrumentation with specialized master trainer on chromatography instruments including gas chromatography attached with thermal desorption units and different detectors viz. mass spectrometer, electron capture devices (ECD) and flame ionization detector (FID); ion chromatography attached with conductivity detector (CD), electrochemical detector (ECD and variable wavelength detector (VWD); CHSN, O analyzer and atomic absorption spectrophotometer. Dr. Verma has also gone through the analytical demonstrations of LC-MS and HPLC instruments.

As the main laboratory incharge of analytical instrumentation, Dr. Verma involved in more than 10 research studies to: 1) chemical analysis of solid and liquid environmental samples using TD-GC-MS/MS, CHSNO analyzer, AAS etc., 2) characterize suspended atmospheric particles for source attribution and their effects on health; 3) evaluate the optical, molecular and thermal properties of atmospheric black and brown carbon; and 4) measure emissions from mineral based coal-fired industries to evaluate contaminated air, water streams, and soils. Dr. Madhuri Verma is also leading in the training programs on sophisticated analytical instrumentation. Dr. Madhuri Verma has, also, served the state planning commission task force on environmental management as member of working group on air quality improvement program in the state of Chhattisgarh. Dr. Verma was the principal author or coauthor of ~11 peer-reviewed journal articles which have >100 citations; and delivered over 07 presentations at technical conferences and training sessions.

### EDUCATIONAL DETAILS

#### **Ph.D., Chemistry**

(Thesis Title: “Emission Characterization and Impact Studies of Indian Household Solid Fuel Burning Practices” School of Studies in Chemistry, Pt. Ravishankar Shukla University Raipur, Chhattisgarh, India, 2019)

#### **M.Sc., Chemistry (69.4%)**

(School of Studies in Chemistry, Pt. Ravishankar Shukla University Raipur, Chhattisgarh, India, 2014)

#### **B.Sc., Microbiology, Chemistry, Botany (63%)**

(Government Nagarjuna P.G. Science College of Raipur, Pt. Ravishankar Shukla University Raipur, Chhattisgarh, India, 2012)

## **RESEARCH PAPER PUBLISHED**

1. **Madhuri Verma**, Shamsh Pervez, Judith C. Chow Dipanjali Majumdar, John G. Watson, Yasmeen Fatima Pervez, Manas Kanti Deb, Kamlesh Shrivasa, Vikas Kumar Jain, Noor A. Khan, Papiya Mandal, Rajan K.Chakrabarty (2021). Assessing the magnitude of PM<sub>2.5</sub> polycyclic aromatic hydrocarbon emissions from residential solid fuel combustion and associated health hazards in South Asia. Atmospheric Pollution Research. Vol 12 (8), <https://doi.org/10.1016/j.apr.2021.101142> (impact factor - 4.831)
2. Shamsh Pervez, **Madhuri Verma**, Suresh Tiwari, Rajan Chakrabarty, John G. Watson, Judith C. Chow, Abhilas S. Panicker, Manas Kanti Deb, Mohammad Nahid Siddiqui, Yasmeen Fatima Pervez, (2018). Household solid fuel burning emission characterization and activity levels in India. Science of the Total Environment. Vol (654), Pages 493-504. (impact factor- 10.753).
3. **Madhuri Verma**, Dipanjali Majumdar, Rajan Chakrabarty, Shamsh Pervez, (2018). Emission estimation of Aromatic- and Halogenated-VOCs from Household solid fuel burning. International Journal of Environmental Science and Technology. <https://doi.org/10.1007/s13762-018-1920-7>. (impact factor -3.591)
4. **Madhuri Verma**, Shamsh Pervez, Manas Kanti Deb, Dipanjali Majumdar (2018). Domestic use of cooking fuel in India: A review on Emission characteristics and associated health concerns. Asian Journal of Chemistry. Vol 30(2); 235-245. (impact factor – 0.16).
5. Princy Dugga, Shamsh Pervez, Rakesh Sahu, **Madhuri Verma**, Shahina Bano, Manas Kanti Deb (2017). Spatiotemporal variation in groundwater quality of India during last 15 year: a review. Journal of Ravishankar Shukla University-B, 30 (1&2), 41-52. A. S.
6. Archi Mishra, Shamsh Pervez, Carla Candeias, **Madhuri Verma**, Shahina Bano, Princy Dugga, Sushant Ranjan Verma, Aishwaryashri Tamrakar, Sheeba Shafi, Yasmeen Fatima Pervez, Vineeta Gupta, 2021, Bioaccessibility features of particulate bound toxic elements: Review of extraction approaches, concentrations and health risks, Journal of Indian Chemical Society, 98 (11), November 2021, 100212.
7. Shamsh Pervez, Princy Dugga, Mohammad Nahid Siddiqui, Shahina Bano, **Madhuri Verma**, Carla Candeias, Archi Mishra, Sushant Ranjan Verma, Aishwaryashri Tamrakar, Indrapal Karbhal, Manas Kanti Deb, Kamlesh Shrivasa, Yasmeen Pervez, Rakesh Kumar Jha, 2021, Sources and health risk assessment of potentially toxic elements in groundwater in the mineral-rich tribal belt of Bastar, Central India, Groundwater for Sustainable Development, 14, 2021/6/19: 100628.
8. Aishwaryashri Tamrakar, Shamsh Pervez, **Madhuri Verma**, Dipanjali Majumdar, Yasmeen Fatima Pervez, Carla Candeias, Princy Dugga, Archi Mishra, Sushant Ranjan Verma, Manas Kanti Deb, Kamlesh Shrivasa, Manmohan L. Satnami, Indrapal Karbhal, 2022 BTEX in Ambient Air of India: a Scoping Review of their Concentrations, Sources, and impact, Water Air Soil Pollution, 233:411.
9. Archi Mishra, Shamsh Pervez, **Madhuri Verma**, Carla Candeias, Yasmeen Fatima Pervez, Princy Dugga, Sushant Ranjan Verma, Indrapal Karbhal, Kallol K. Ghosh, Manas Kanti Deb, Manmohan L. Satnami, Kamlesh Shrivasa, Aishwaryashri Tamrakar, 2022. Chemical fractionation of particulate-bound metal(loid)s to evaluate their bioavailability, sources and associated cancer risk in India. Science of The Total Environment, Volume 857, Part 2, 159516.

10. Sushant Ranjan Verma, Shamsh Pervez, Papiya Mandal, Judith C. Chow, John G. Watson, Syed Muzaffarali Andrabi, **Madhuri Verma**, Princy Dugga, Noor Afshan Khan, Yasmeen Fatima Pervez, Archi Mishra, Manas Kanti Deb, Indrapal Karbhal, Suresh Tiwari, Kallol K. Ghosh, Kamlesh Shrivastava, Manmohan Lal Sharma. Atmospheric abundance of PM<sub>2.5</sub> Carbonaceous Matter and their potential sources at three high altitude glacier sites over the Indian Himalayan Range, ACS Earth Space Chem. 2022, 6, 12, 2919–2928

#### **RESEARCH PAPER PRESENTED AT NATIONAL/INTERNATIONAL CONFERENCES**

- I. Madhuri Verma and Shamsh Pervez, Emission characteristics and associated health hazards of household solid fuel burning in India. AICON'2016 (All India Conference), Clean & Green Technology. Held on 22nd- 23rd April, 2016 in the department of Applied Chemistry CSIT, Durg, Chhattisgarh.
- II. Madhuri Verma and Shamsh Pervez, Low emission of VOCs from wood burning in Indian houses, real-world situation. National Conference on Soil Quality & Public Health (SQPH) held on 17th – 18th January 2017, at Govt. Digvijay Autonomous P.G. College Rajnandgaon (C.G.).
- III. **Madhuri Verma** and Shamsh Pervez. UGC-SAP (DRS-II) 2nd National Conference on Advances in Environmental & Chemical Sciences held on March 17-18, 2017 in the SoS in Chemistry, Pt. Ravishankar Shukla University, Raipur 492010 (C.G.) India.
- IV. Madhuri Verma and Shamsh Pervez. Domestic use of cooking fuel in India: A review on Emission characteristics and associated health concerns. AICON'2016 (All India Conference), Transformation in Chemical Science: Application of Computational Tool & Digitization to Resolve Challenges. Held on 22nd- 23rd April, 2016 in the department of Applied Chemistry CSIT, Durg, C.G. India.
- V. Madhuri Verma and Shamsh Pervez. Emission estimation of aromatic- and halogenated-vocs from household solid fuel burning practices International Conference of the Public Health Foundation of India and the Pacific Basin Consortium “Environmental Health and Sustainable Development” Held on 14-16 November 2017, New Delhi, India.
- VI. Madhuri Verma and Shamsh Pervez. Household solid fuel burning emission characterization and activity levels in India 22nd CRSI National Symposium in chemistry, 2-4th February, 2018. Pt. Ravishankar Shukla University, Raipur, (C.G.).
- VII. Shahina Bano, Madhuri Verma and Shamsh Pervez. Source Apportionment Results of Indoor PM<sub>10</sub> at Residential Urban Environment Using PMF<sub>5.0</sub> Receptor Model. UGC-SAP (DRS-II), 2nd National Conference on Advances in Environmental & Chemical Sciences, 22-23 March, 2018. Pt. Ravishankar Shukla University, Raipur (C.G.).

## WORK EXPERIENCE

1. Dr. Verma has 2-year Post Doc. research experience (Duration- March, 2019- March, 2022)
2. Teaching Experience:
  - a) Six month in School of Studies in Chemistry, Pt. Ravishankar Shukla University (Duration- April, 2022- August, 2022)
  - b) Two year in SoS Environmental Science, Pt. Ravishankar Shukla University (Duration- August, 2023-May, 2025)
3. Dr. Madhuri Verma has, also, served the state planning commission task force on environmental management as member of working group (CECB, 2022)

## TECHNICAL SKILLS

### A. Instrumentation

1. Thermal desorption Gas chromatography- Mass spectrometry (TD-GC-MS/MS)
2. Ion Chromatograph
3. Atomic Absorption Spectroscopy (AAS) equipped with hydride generator and graphite furnace
4. CHNS/O analyzer
5. Solid phase UV-Visible spectrophotometer with integrated sphere
6. Flame Photometer

### B. Data Analysis and Software Skills

1. Xcauliber software for TD-GC-MS/MS spectral analysis,
2. Partial least square and classical least square calibration (PLS and CLS) or multivariate analysis
3. Test of analytical quality assurance (AQA) and statistical and varimax principal component analysis (PCA)
4. Positive matrix factorization (PMF),
5. Statistical, SigmaPlot10, Origin 6.1, 8.5 and 9.1
6. 3D Chemdraw, Excel, PowerPoint, Paint etc.

### C. Field Station, Standard Operating Procedures and Lab Experiments

1. Air and water quality monitoring station, Raipur, CG.
2. Filter preparation and sampling for solid and liquid samples
3. Potential site selection for air and water analysis and it's chemical analysis
4. Gravimetric analysis

## PERSONAL DETAILS

Name	Dr. Madhuri Verma
Father's Name	Lt. Mr. Lekh Ram Verma
Mother's Name	Mrs. Mani Verma
Date of Birth	14 November 1990
Category	Open
Religions	Hindu

Permanent Address	Naya Ganj Ward, Kalyan Sagar Road, Bhatapara (Chhattisgarh), Tahsil- Bhatapara, District- Balodabazar, (Chhattisgarh), Pin Code- 493118, India
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### DECLARATION

My all the details in, which I also give up like educational details, personal details are obviously confidentially truthful.



Date: 22-05-2024

(DR. MADHURI VERMA)

Place: Raipur

### **REFERENCE**

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