PROFILE

Name	Asha Pradeep Lalwani
Designation	Principal Scientist
Qualification	1. B.Sc. in Mathematics, Physics and Statistics -1993-95, Nagpur University, Nagpur 2. M.Sc. in Statistics - 1995-97, Nagpur University, Nagpur 3. Advance Diploma in Computer Software System Analysis and Applications - 1996-97, Maharashtra Technical Board, Nagpur 4. B.Ed (Bachelor in Education) - 1997-98, Nagpur University, Nagpur 5. Ph.D. in Statistics – Awarded on 30th November 2005, RTM Nagpur University, Nagpur Title: Some contributions to Secretary problem and its generalization.
Experience (in years)	• July 1998 - Oct 2000 Junior Project Fellow, CSIR-NEERI, Nagpur • Nov 2000 – Nov 2006 Tech. Gr. III(1), CSIR-NEERI, Nagpur • Nov 2006 –Nov 2009 Scientist Gr. IV(1), CSIR-NEERI, Nagpur • Nov 2009 –Nov 2013 Scientist Gr. IV(2), CSIR-NEERI, Nagpur • Nov 2013 –Nov 2018 Scientist Gr. IV(3), CSIR-NEERI, Nagpur • Nov 2018 – till date Scientist Gr. IV(4), CSIR-NEERI, Nagpur
Expertise (for e.g.: Water, Waste, Energy, Business Development etc.)	Involved in more than 50 projects of national and international repute on source apportionment, data analysis, air quality modelling, environmental damage cost assessment, machine learning based tools and application of statistical methods to solve environmental problems.
Publications (in Nos.)	1. A.B. Chelani, D.G. Gajghate and M.Z. Hasan, Airborne toxic metals in air of Mumbai city, India, Bulletin of Environmental Contamination and Toxicology 2000, 66, 2, 196-205. 2. A.B. Chelani and M.Z. Hasan, Forecasting nitrogen dioxide concentration using artificial neural networks, International J. of Environmental Studies A 2001, 58, 487-499. 3. A.B. Chelani, D.G Gajghate, S.M. Tamhane, M. Z. Hasan, Statistical modeling of air pollutants in ambient air of Delhi, Water, Air & Soil Pollution 2001, 132, 315-331. 4. A.B. Chelani, C.V. ChalapatiRao, K.M. Phadke and M.Z. Hasan, Formation of air quality index in India, International J. of Environmental Studies A 2002, 59(3), 331-342. 5. A.B. Chelani, C.V. ChalapatiRao, K.M. Phadke, M.Z. Hasan, Prediction of sulphur dioxide concentration using

artificial neural-networks, Environmental Modeling & Software 2002, 17,161-168.

6. A.B. Chelani, D. G. Gajghate and M.Z. Hasan, Prediction of ambient PM10 and toxic metals using artificial neural networks, J. of Air & Waste Management Association 2002, 52, 805-813.

7. P. Nema, **A.B. Chelani**, C.S.P. Ojha, A. Kumar, P. Khanna, Utility of column lysimeter for design of SAT system for wastewater renovation using artificial neural networks, J. of Environmental Engineering (ASCE) 2004, 130(12), 1534-1542.

8. A.B. Chelani, D.G. Gajghate, K.M. Phadke, A.G. Gavane, M.Z. Hasan, P. Nema, Air quality status and sources of PM10 in Kanpur city, Bulletin of Environmental Contamination & Toxicology 2005, 74(2), 421-428.

9. A.B. Chelani, Predicting chaotic time series of PM10 concentration using artificial neural networks, International Journal of Environmental Studies A 2005, 62(2), 181-191.

10. A.B. Chelani and S. Devotta, Impact of change in fuel quality on PM10 in Delhi, Bulletin of Environmental Contamination & Toxicology 2005, 75(3), 600-607.

11. A.B. Chelani, R.N. Singh and S. Devotta, Nonlinear dynamical characterization and prediction of ambient nitrogen dioxide concentration, Water, Air & Soil Pollution 2005,166(1), 121-135.

12. A.B. Chelani and S. Devotta, Nonlinear analysis and prediction of PM10 concentration in ambient air, J. of Air & Waste Management Association 2006, 56(1), 78-84.

13. A.B. Chelani and S. Devotta, Air quality forecasting using a hybrid autoregressive and nonlinear model, Atmospheric Environment 2006, 40, 1774-1780 _March [3.13]

14. A.B. Chelani and S. Devotta, Air quality assessment in Delhi: Before and after CNG as fuel, Environmental Monitoring & Assessment 2007, 125,257-263.

15. A.B. Chelani and S. Devotta, Prediction of ambient carbon monoxide concentration using nonlinear time series analysis technique, Transportation Research D 2007, 12 (8), 596- 600.

16. A.Gautam, A.B. Chelani, V.K. Jain, S. Devotta, A new scheme to predict chaotic time series of air pollutant concentrations using artificial neural network and nearest neighbor searching, Atmospheric Environment 2008, 42(18), 4409-4417.

17. A.B. Chelani, D.G. Gajghate, S. Devotta, Source apportionment of PM10 in Mumbai, India using CMB model, Bull Environ Contam Toxicol 2008, 81,190–195.

18. A.B. Chelani, Statistical persistence analysis of hourly ground level ozone concentrations in Delhi, Atmospheric Research 2009, 92, 244–250.

19. D.V. Ramana, **A.B. Chelani**, R.K. Chadha, R.N. Singh, Deep bore well water level fluctuations in the Koyna region, India: the presence of a low order dynamical system in a seismically active environment, Nonlinear Processes in Geophysics 2009, 16, 393-397.

20. A.B. Chelani, Prediction of daily maximum ground ozone concentration using support vector machine, Environmental Monitoring & Assessment 2010, 162 (1-4), 169-176.

21. A.B. Chelani, D.G. Gajghate, C.V. ChalapatiRao, S. Devotta, Particle size distribution in ambient air of Delhi and its statistical analysis, Bulletin of Environmental Contamination and Toxicology 2010, 85(1), 22-27.

22. A.B. Chelani, Nonlinear dynamical analysis of ground level ozone concentrations at different temporal scales, Atmospheric Environment 2010, 44(34), 4318-4324.

23. A.B. Chelani, Complexity analysis of CO concentration time series at traffic site in Delhi, Transportation Research D 2011, 16(1), 57-60.

24. G.R. Pophali, A.B. Chelani, R.S. Dhodapkar, Using integrated AHP and GRA approach for optimal selection of full scale tannery effluent treatment alternative, Expert Systems with Applications 2011, 38(9), 10889-10895.

25. A.B. Chelani, C. Moghe, S. Nimsadkar, N. Thacker, S. Dhopte, G. Bodhe, Kavita Gandhi, Evaluation of bias, precision and systematic errors in proficiency testing of Cl^- and Cu concentration in water 2011, Journal of Accreditation and Quality Assurance 16, 379-382.

26. A.B. Chelani, Change detection using CUSUM and modified CUSUM method in air pollutant concentrations at traffic site in Delhi, Stochastic Environmental Research & Risk Assessment 2011, 25(6), 827-834.

27. A.B. Chelani, Persistence analysis of extreme CO, NO_2 and O_3 concentrations in ambient air of Delhi, Atmospheric Research 2012, 108, 128-134.

28. A.B. Chelani, Study of extreme CO, NO_2 and O_3 concentrations at a traffic site in Delhi: Statistical persistence analysis and source identification, Aerosol & Air Quality Research 2013, 13, 377–384.

29. A.B. Chelani, P.S. Rao, Temporal variations in surface air temperature anomaly in urban cities of India, Meteorology and Atmospheric Physics 2013, 121(3), 215-221.

30. A.B. Chelani, Statistical characteristics of ambient PM2.5 concentration at traffic site in Delhi: Source identification using persistence analysis and nonparametric wind regression, Aerosol & Air Quality Research 2013, 13(6), 1768-1778.

31. A.B. Chelani, Irregularity analysis of CO, NO_2 and O_3 concentrations at traffic, commercial and low activity sites

in Delhi, Stochastic Environmental Research and Risk Assessment 2014, 28:921–925.

32. D.V. Ramana, J. Pavan Kumar, Asha Chelani, R.K. Chadha, M. Shekar, R.N. Singh, Complexity in hydro-seismicity of the Koyna–Warna region, India, Natural Hazards, 2015, 77:S109–S1.

33. A.B. Chelani, Nearest neighbour based forecast model for PM10 forecasting: Individual and combination forecasting, Aerosol & Air Quality Research 2015, 15(3): 1130-1136.

34. A.B. Chelani, Exceedance analysis of PM10 concentration in central Indian city: predicting time between two exceedances, Aerosol & Air Quality Research 2015, 15(5): 2158-2167.

35. A.B. Chelani, Long memory in air pollutant concentrations, Atmospheric Research 2016, 171: 1-4.

36. A.B. Chelani, Long-range correlations in air quality time series: effect of differencing and shuffling, Aerosol and Air Quality Research 2016, 16(9): 2302-2313.

37. A.B. Chelani, Study of Local and Regional Influence on PM2.5 Concentration during Odd-Even Rule in Delhi Using Causal Analysis, Aerosol and Air Quality Research 2017, 17: 1190–1203.

38. A.B. Chelani, Estimating PM2.5 Concentration from Satellite derived Aerosol Optical Depth and Meteorological Variables using a Combination Model, Atmospheric Pollution Research, 2019, 10(3), 847-857.

39. A.D. Shende, A.B. Chelani, N.N. Rao, G.R. Pophali, Optimal selection of "zero liquid discharge"(ZLD) system using "analytical hierarchy process"(AHP) and "grey relational analysis"(GRA). Environment, Development and Sustainability 2021, 23 (6), 8506-8523.

40. S. Devotta, A. Chelani, A. Vonsild, Prediction of flammability classifications of refrigerants by artificial neural network and random forest model. International Journal of Refrigeration 2021, 131, 947-955.

41. S. Devotta, A. Chelani, A Vonsild, Prediction of global warming potentials of refrigerants and related compounds from their molecular structure–An artificial neural network with group contribution method. International Journal of Refrigeration 2021, 131, 756-765.

42. A. Chelani, S. Gautam, Lockdown during COVID-19 pandemic: A case study from Indian cities shows insignificant effects on persistent property of urban air quality. Geoscience Frontiers 2022, 13 (6), 101284.

43. A.B. Chelani, Estimating background particulate matter concentration in Indian cities through statistical methods. International Journal of Environmental Science and

	Technology 2022, 19 (10), 9967-9978.
	44. S. Devotta, A. Chelani, Unified Artificial Neural Network-Group Contribution Method for Predictions of Normal Boiling Point and Critical Temperature of Refrigerants and Related Compounds. International Journal of Refrigeration 2022, 140 (11), 112-124.
	45. A.B. Chelani, S. Gautam, The influence of meteorological variables and lockdowns on COVID-19 cases in urban agglomerations of Indian cities. Stochastic environmental research and risk assessment 2022, 36 (9), 2949-2960.
	46. A.B. Chelani, Fractal behaviour of benzene concentration near refinery, traffic junctions and residential locations in India. Atmospheric Pollution Research 2023, 14 (7), 101798.
	47. A.B. Chelani, S. Gautam, Study of ground ozone and precursors along with particulate matter at residential sites in the vicinity of a power plant. Waste Disposal and Sustainable Energy 2023, 5 (4), 535-549.
	48. A.B. Chelani, S. Gautam, Fractality in $PM_{2.5}$ concentrations during the dry and wet season over Indo-Gangetic Plain, India. Water Air and Soil Pollution 2023, 234 (8), 502.
	49. Pooja Kamdi, Sakshi Patil, Amit Bafana, Asha Lalwani, Anirban Middey, Krishnamurthi Kannan, Saravanadevi Sivanesan. Health risk assessment and characterization of PM2.5 bound bioaerosols at the municipal solid waste landfill site of Nagpur, India. Journal of Aerosol Science 2024, 178, 106359.
	50. Madhuri Gulhane, Bhagyashri J. Poddar, Asha Chelani, Hemant J.Purohit, Anshuman A.Khardenavis, Assessment of biomethanation potential and batch kinetics of the anaerobic digestion of vegetable market waste in serum bottles. Biomass Conversion and Biorefinery. https://doi.org/10.1007/s13399-023-05235-0.
	51. Suraj P. Nakhate, Asha Chelani, Hemant J. Purohit, Anshuman A. Khardenavis. Kinetics and metagenomic analysis for assessment of biomethanation of gram crop waste in an anaerobic baffled reactor. Biomass Conversion and Biorefinery. https://doi.org/10.1007/s13399-023-04963-7.
	52. Radhika Sharma, Sushma Pardeshi, Jowin Joseph, Debishree Khan, Asha Chelani, Rita Dhodapkar. Integrated analytical hierarchy process-grey relational analysis approach for mechanical recycling scenarios of plastics waste in India. Environmental Science and Pollution Research, https://doi.org/10.1007/s11356-024-32632-3.
Patents	Nil

Honors & Awards (If any)	Recipient of the 61st Nagpur Session of Indian Science Congress Commemoration Prize. Recipient of the Balwantrao Mahajan Prize Recipient of 2 gold medals for obtaining the highest percentage in M.Sc. (Statistics) Examination in university.
Research Scholars (in Nos.)	Ongoing - 1