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Professional Summary

Environmental Professional with 5+ years of experience having a strong focus on grass root level, multi-disciplinary rural studies. Major emphasis on indoor air pollution and its overarching impact on environment & the populace.

Education

PhD in Environmental Engineering, Civil Engineering Department, Indian Institute of Technology Madras (IITM), Chennai, India *[July 2014-Jan 2019]*

PhD dissertation title: Human exposure to Indoor Air Pollution in rural areas of south India and evaluation of control options.

- Characterization of air pollution exposure inequalities among women belonging to various settings in rural southern India and estimation of the respiratory dosages.
- Assessment of their personal exposure to PM2.5-bound polyaromatic hydrocarbon (PAH) compounds, carbonaceous particles, and heavy metals.
- Design and evaluation of control options towards improving indoor air quality using a combination of various affordable fuels and development of alternatives to the existing cooking technologies.

***M. Tech from Centre for Technology Alternatives for Rural Areas (CTARA),* Indian Institute of Technology Bombay (IITB), Mumbai, India** *[July 2010-July 2012]*

***Thesis title:* Comparison and assessment of household level technologies for treating drinking water**

- Assessed household drinking water treatment technologies using Analytical Hierarchy Process (AHP) and laboratory-based evaluation methods.
- Contributed to research proposal development for sustainable rural development interventions using System Dynamics and Participatory Appraisal approaches.

***B. Tech in Chemical Engineering* from University College of Technology, Osmania University, Hyderabad, India** *[August 2006-July 2010]*

Thesis title*:* Solid stage reaction between Barium Sulphate and Carbon

- Investigated the solid stage reaction mechanism between Barium Sulphate and Carbon in powdered form by varying reaction variables like temperature, time and reaction environment.

Work Experience

- *Post Doctoral Researcher at Energy, Environment, and Climate Change (EEC), National Institute of Advanced Studies (NIAS), IISc, Bengaluru* ***[Nov 2025-present]***

  Project: Quantification of State Level HFCs Emissions in India and Future Projections towards Net-Zero Mitigation Pathways

  Developing a state-level bottom-up inventory framework to estimate HFC emissions from domestic refrigeration, mobile air conditioning, and commercial cooling sectors using sector-specific activity data and emission factors.

  Developing future emission projections under different socioeconomic and Kigali Amendment policy scenarios to assess net-zero mitigation pathways and sectoral emission trends.

  Project: Air Quality Impacts of Electric Vehicle Adoption in Delhi

  Conducting analysis and interpretation of air quality related health impacts, including mortality, morbidity, and DALYs, associated with EV penetration scenarios in Delhi.

Contributing to research article writing on EV adoption, emissions reduction, and air quality benefits.

- *Research Scientist at Center for Sustainable Environment and Education* ***[Feb 2025-Nov 2025]***
  Lead and facilitate sessions on air pollution and health, integrating scientific insights with practical solutions for diverse stakeholder groups. Spearhead the development of research and outreach project proposals, with a strong focus on public health and environmental sustainability. Actively engage in stakeholder networking and collaboration to strengthen partnerships.
- *Senior Associate in Atmospheric Composition Observations Group, Air Quality Sector at The Center for Study of Science, Technology and Policy (CSTEP), Bengaluru* ***[March 2023-Nov 2024]***
  Project: State level strategies for reducing air pollution in Punjab
  Developed a methodological framework using the USEPA method, IER model, and GEMM to assess air pollution related health risks across five cities in Punjab.
  Developed environmental governance and crop residue management action plans to curb stubble burning, and conducted collocation-based sensor performance and degradation assessment studies.
  Project: Google 2 AQ Monitoring Project for Air View (MPLCS Network for Bengaluru)
  Performed precision and accuracy analysis of low-cost sensors against AQMS data for multiple pollutants using statistical indicators such as SD, CV, R^2, and RMSE.
  Developed calibration models using MLR and Random Forest techniques and analyzed long-term CAAQMS data in Bengaluru to assess data quality, reliability, and spatial-temporal pollution patterns.
- *EIA Coordinator at Environment Protection Training & Research Institute (EPTRI), an Autonomous Organization under Government of Telangana, Hyderabad* ***[June 2022-Feb 2023]***
  Projects: Environmental Clearance & Consent For Establishment (CfE) to Industrial Park at Chandanvelly, Ranga Reddy, Telangana & Environmental Clearance for Indiramma Flood Canal project, Siddipeta District, Telangana
  Involved in the preparation of Form-I, PFR and TOR presentation, identification of sampling site, preparation of baseline data related to Air and impact and mitigation measures for Air.
  Team member in establishing EPTRI Innovation and Incubation Hub and working on Climate Change related projects like Net zero emissions, Carbon Foot Print, Carbon credits etc.
  Organizing training programs and workshops which include one day training on "World Ozone Day" on 16th September, 2022 in collaboration with TSPCB.
- *Post-Doctoral Fellow at IITM, Chennai* ***[July 2019-Sep 2019]***
  Project: Air Quality monitoring and carrying capacity assessment of stone quarrying mines at Perecherla, Guntur
  Lead air pollution monitoring, speciation analysis, and AERMOD (US EPA regulatory model) modelling to estimate assimilative capacity.
- *Institute Pre-Doctoral Fellow at IITM, Chennai* ***[Jan 2019-June 2019]***
  Mentored a graduate and an undergraduate student in the areas of indoor air pollution and design of air pollution control technologies at IIT Madras
- *Project Officer at IITM, Chennai* ***[Jan 2014-July 2014]***
  Project: Ambient and Indoor Air Quality Monitoring for Hyundai Motors India Limited, Sriperumbudur, Tamil Nadu
  Involved in Air Pollution monitoring and analysis of daily traffic flow patterns.
- *Junior Manager-Execution, CSR wing, Ramky Foundation, Hyderabad* ***[July 2013-Dec 2013]***
  Handled execution of CSR activities in plant locations and pioneered various long term developmental projects in these areas
- *Senior Researcher, Eco-Sanitation Lab, IIT Delhi, New Delhi* ***[Jan 2013-June 2013]***
  A detailed literature study was conducted on Phosphorus and its impacts in Indian context and Ecological Sanitation: Waterless urinals and nutrient recovery from Human urine.

Publications

List of Journal Publications

1. **Deepthi, Y.,** Passi, A., S, C.V. *et al.* Evaluation of policy interventions to mitigate the prevalence of household air pollution due to biomass fuel and its associated health risks in rural India. *Air Qual Atmos Health* 18, 2749–2763 (2025). https://doi.org/10.1007/s11869-025-01795-4
2. Vellaturi, S., Rao, S. S., Aakala, N., Niranjan, K., Samatha, K., **Deepthi, Y.,** & Sreekanth, V. (2026). A Comprehensive Characterization of Particulate Matter Pollution Over South India. *CLEAN–Soil, Air, Water*, *54*(4), e70176.
3. **Deepthi, Y.,** Passi, A., Chithra, V. S., Schlink, U., & Nagendra, S. S. (2025). Personal exposure of women to PM2. 5-bound PAH derivatives from cooking emissions in varied rural kitchen setups. *Building and Environment*, *267*, 112189.
4. **Deepthi, Y.,** Nagendra, S. S., & Gummadi, S. N. (2019). Characteristics of indoor air pollution and estimation of respiratory dosage under varied fuel-type and kitchen-type in the rural areas of Telangana state in India. *Science of the Total Environment*, *650*, 616-625.
5. **Yaparla, D.,** Nagendra, S. S., & Gummadi, S. N. (2019). Characterization and health risk assessment of indoor dust in biomass and LPG-based households of rural Telangana, India. *Journal of the Air & Waste Management Association*, *69*(12), 1438-1451.
6. Agarwal, N., Nagendra, S.S., Peter, A.E. and **Deepthi, Y.** (2019). Microanalysis of the floor dust particles in the classrooms of tropical urban environment. Journal of The Institution of Engineers (India): Series A, 100(3), 447-458. https://doi.org/10.1007/s40030-019-00362-2
7. Nagendra, S. S., Maiya, M.P., Jyotirmay, M., Uma, K., Yogesh, A., Mamatha, M., **Deepthi, Y.,** Mohan, L., & Kumar, Shailendra. (2018). Methodology for IEQ Standard Implementation in Different Types of Buildings. Air Conditioning and Refrigeration Journal, ISHREA, Volume 21 Number 5, 38-60.

List of Book Chapters

1. Passi, A., **Deepthi, Y.,** VS, C., V, L.M., SM, S.N. and MP, M. (2026). Commuters' Exposure to Air Pollutants in a Subway Metro System. In Engineering Air Quality Solutions (eds S. Gautam and A. Taneja). https://doi.org/10.1002/9781394373550.ch06
2. **Deepthi, Y.,** Passi, A., Chithra, V. S., Panda, S., & Nagendra, S. S. Exposure to Fine Particulate Matter among Women in Rural Households using Biomass Fuels: Analysis of Elemental Composition, Morphological Characteristics, and Health Risks. In *Blue Sky, Blue Water* (pp. 60-76). CRC Press.
3. ***Deepthi, Y.,*** Nagendra, S.M.S. (2024). Evaluation of Health Risks Associated with Household Air Pollution in Rural Areas of Telangana State in India. In: Kulshreshtha, P., Chinthala, S., Kumar, P., Aggarwal, B. (eds) *Indoor Environmental Quality*. ACIEQ 2022 2023. Lecture Notes in Civil Engineering, vol 380, 15-25. Springer, Singapore. https://doi.org/10.1007/978-981-99-4681-5_2
4. ***Deepthi, Y***., Nagendra, S. S., & Gummadi, S. N. (2020). Characteristics of PM from Different South Indian Cooking Methods and Implications in Health Effects. In *Indoor Environmental Quality, 60*, 35-44. Springer, Singapore. https://doi.org/10.1007/978-981-15-1334-3_5.

List of Conferences

1. ***Deepthi, Y*** (2023). Investigation of Health Risks Associated with PM2.5 Exposure in Bengaluru City, India. Indian Aerosol Science and Technology Association (IASTA 2023), Navi Mumbai, 12-14 December 2023
2. ***Deepthi, Y****.* & Nagendra, S. S. (2022). Evaluation of Fuel and Stove Alternatives to Control Biomass Emissions in Rural Settings. 7th Indian International Conference on Air Quality Management (IICAQM): Measurement, Modelling, Health Risk and Public Policy, Chennai, 29th November-1st December 2022

3. ***Deepthi, Y.,*** Nagendra, S. S., & Gummadi, S. N. (2019). Characteristics of PM from different south Indian cooking methods and implications in health effects. Asian Conference on Indoor Environmental Quality (ACIEQ), New Delhi, 1-2 February 2019
4. ***Deepthi, Y.***, Nagendra, S. S., & Gummadi, S. N. (2017). Indoor exposures to particulate matter emissions in various types of households using different cooking fuels in rural areas of south India. American Geophysical Union (AGU), Fall Meeting, New Orleans, 11-15 December 2017
5. ***Deepthi, Y.,*** Nagendra, S. S., & Gummadi, S. N. (2017). Indoor Exposures to $PM_{2.5}$ in A Sub Tropical Rural Site. Indian International Conference on Air Quality Management Health and Exposure (IICAQM), New Delhi, 1-2 June 2017
6. ***Deepthi, Y.***, Rao, Bakul., & Rao, Anand. B. (2014). Comparison of Household Level Drinking Water Treatment Technologies Using Analytic Hierarchy Process. International Symposium of the Analytic Hierarchy Process (ISAHP), American Geophysical Union (AGU), Washington D.C., 29 June - 2 July, 2014
7. ***Deepthi, Y.,*** Rao, Bakul., & Rao, Anand. B. (2012). A Comparative Study on Household Level Drinking Water Treatment Technologies. National conference on Water Purification Technologies and Management (InDACON 2012) , Navi Mumbai, 8-9 February 2012

Key Symposiums and Seminars

1. Handled sessions on "Fundamentals of Air Pollution: Pollutants, Sources, and Atmospheric Transport" & "Air Pollution Monitoring and Data Analysis: Instruments, Data Collection, and Quality Control" for One-Month Online Certificate Course on Air Pollution and Health Impacts: Training on Modelling Techniques Organized by Center for Sustainable Environment and Education, Hyderabad between 17th May-8th June 2025.
2. Handled sessions on "Driving a Sustainable Future with Clean Water & Renewable Energy" for Online Five Days Faculty Development Program on Future-Ready Engineering for Sustainable Development Goals (SDGs) Organized by Center for Sustainable Environment and Education, Hyderabad between 10th-14th March 2025.
3. Handled sessions on "Air Pollution Fundamentals: Ground-Based Measurement Techniques and Open Source Data and Analysis" in One Day Online Certificate Course on Air Quality Monitoring: From Basics to Advanced Techniques Organized by Center for sustainable Environment and Education, Hyderabad on 23rd February 2025.
4. "Environment and Pollution specific to Air Pollution" to Higher Secondary School Children, Degree College students, etc., as a part of educational tours organized by EIACP, EPTRI during November and December, 2022.
5. "Health risk assessment of PM using Multiple-Path Particle Dosimetry Model" in QIP- short term training Programme on Human Comfort and Indoor Air Quality jointly organized by the Departments of Civil Engineering and Mechanical Engineering, Indian Institute of Technology Madras held during 20th - 25th November, 2018.
6. "*Indoor air quality in rural households"* in Air-O-Thon, Bangalore edition, organized by Indian Pollution Control Association held at The Capitol Hotel, Bangalore on 31st August, 2018.
7. "*Characteristics of Indoor Air Quality in Rural Households"* in Air-O-Thon, Chennai edition, jointly organized by Indian Pollution Control Association and Indian Institute of Technology Madras held at ICSR, Chennai on 16th February, 2018.
8. Conducted one day training on "*National Urban School Sanitation program"* for Government school Teachers jointly organized by GIZ and Ecosan Services Foundation in Tirupati, Andhra Pradesh on 28th January, 2013.