Dr Abhishek Saxena

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WORK EXPERIENCE

⊞ SANGAM UNIVERSITY, BHILWARA RAJASTHAN INDIA – BHILWARA, INDIA
ASSOCIATE PROFESSOR – 23/11/2021 – CURRENT

⊞ PACIFIC UNIVERSITY UDAIPUR RAJASTHAN INDIA – UDAIPUR, INDIA
ASSISTANT PROFESSOR – 10/04/2017 – 18/11/2021

⊞ M.L. SUKHADIA UNIVERSITY, UDAIPUR – UDAIPUR, INDIA
JUNIOR RESEARCH FELLOW & PROJECT FELLOW – 10/02/2009 – 09/2017

- **Data Acquisition & Management**
- **Data Cleaning & Preprocessing**
- **Exploratory & Statistical Analysis**
- **Data Visualization & Mapping**
- **Machine Learning & Modeling**
- **Research & Communication**

EDUCATION AND TRAINING

PH.D. IN PHYSICS Mohanlal Sukhadia University Udaipur Rajasthan India-2017
M. SC APPLIED PHYSICS Barkatullah University Bhopal, India-2007
BACHELOR OF SCIENCE (B.SC.) Barkatullah University Bhopal, India-2005

LANGUAGE SKILLS

Mother tongue(s): Other language(s):	HINDI				
	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	C2	C2	C2	C2	
GERMAN	A1	A2	A2	A2	A1

Levels: A1 and A2: Basic user - B1 and B2: Independent user - C1 and C2: Proficient user

PUBLICATIONS

1. Saxena, A., & Raj, S. (2021). Impact of lockdown during COVID-19 pandemic on the air quality of North Indian cities. *Urban Climate*, *35*, 100754.
2. Vyas, B. M., Saxena, A., & Panwar, C. (2012). Study of atmospheric air pollutants during the partial solar eclipse on 15 January 2010 over Udaipur: A semi-arid location in Western India. *Advances in space research*, *50*(11), 1553-1563.
3. Saxena, A., & Vyas, B. M. (2016). Total ozone content trend during the last decade over western Indian tropical station ie Udaipur. *American Journal of Climate Change*, *5*(02), 193.
4. Vyas, B. M., Saxenna, A., & Panwar, C. (2016, May). Study of atmospheric scattering and absorbing aerosols at 550nm over nearby western Indian tropical sites of Thar Desert effected region. In *AIP Conference Proceedings* (Vol. 1728, No. 1). AIP Publishing.
5. Vyas, B. M., Saxenna, A., & Panwar, C. (2016, May). Atmospheric aerosols parameters behavior and its association with meteorological activities variables over western Indian tropical semi-urban site ie, Udaipur. In *AIP Conference Proceedings* (Vol. 1728, No. 1). AIP Publishing.
6. Vyas, B. M., Saxena, A., & Shekhawat, M. S. (2018, May). Behavior of total tropospheric ozone, nitrogen oxide and carbon monoxide column over western Indian region by exploring space based satellite observations. In *AIP Conference Proceedings* (Vol. 1953, No. 1). AIP Publishing.
7. Bhati, V. S., Saxena, A., & Khatwal, R. (2024, August). Emphatic Repercussions of IoT based Air Pollution and Ground-Based Concentration Monitoring Over Western Part of India ie, Udaipur. In *2024 Second International Conference on*

Networks, Multimedia and Information Technology (NMITCON) (pp. 1-9). IEEE.

8. Bhati, V. S., Saxena, A., & Khatwal, R. (2024). Exploring Air Quality Dynamics and Predictive Modeling by Using Artificial Intelligence During COVID-19 Lock Down Over the Western Part of India. *Current World Environment*, *19*(2), 978.

9. Suthar, B. K., Bhati, V. S., & Saxena, A. (2022). Study of air pollutant in Jodhpur during lockdown. *Journal of Science and Technological Researches*, 4(4), 22–29.

10. Bhati, V. S., & Saxena, A. (2022**).** Comparative study of the $PM_{2.5}$ during 2017–2021 over Jaipur, Rajasthan. *Journal of Science and Technological Researches*, 4(4)

11. Williams, B. S., Bhati, V. S., & Saxena, A. (2022). Analysis and comparison of AQI and pollutants – PM_{10}, $PM_{2.5}$, CO and O_3 for the years 2020 and 2021 during Diwali season for Jaipur, Rajasthan. *Journal of Science and Technological Researches*, 4(4).

12. Mund, H. S., Prajapat, P., Dhaka, S., Kumar, S., Saxena, A., & Meena, S. S. (2021). Impact of annealing temperature on structural, optical, and Mössbauer properties of nanocrystalline $NiFe_2O_4$. *Journal of Materials Science: Materials in Electronics*, **32**, 27563–27573.

13. Sutar, D. L., Sharma, S., Saxena, A., Pathan, T. A., & Pensia, R. K. (2022)**.** A study of neutral collisions and viscous force on the formation of astronomical objects including with QMHD fluid model. *Radiation Effects and Defects in Solids, 177*(7–8), 727–742.

14. Singh, K. P., & Saxena, A. (2025). Seasonal variations and correlation analysis of water quality parameters in the Chambal River, Rajasthan, India. *Water Environment Research, 97*(2), e70035

15. Sen, P., Saxena, A., Mehta, P., & Mehta, R. (2024). Analysis of groundwater quality in the semi-arid region of Eastern-South Rajasthan on the basis of water quality index (WQI). *Journal of Geomatics, 18*(2), 15–23.

16. Kumar, P., Sangwan, V., Saxena, A., & Chauhan, S. (2025). Electric field driven strain and multiferroic properties of $Er^{3+}/BiFeO_3$ nano-catalyst. *Nano Trends, 9*, 100068.

Technical & Research Skills

- **Atmospheric & Environmental Data Analysis**
- **Research Writing & Publication**
- **Scientific Instrumentation**
- **Technical Skills**:Python, OriginPro, MS Office, Excel
- **Teaching & Academic Supervision**
- **Conference & Workshop Organization**

Academic Expertise

With a Ph.D. in Physics and over 8 years of experience, I specialize in atmospheric physics, air quality monitoring, and environmental science. My expertise includes surface ozone studies, pollutant analysis, and the use of advanced instruments like Black Carbon Aethalometer and $PM_{2.5}$ analyzers. I also develop predictive models for air quality and have extensive teaching and Ph.D. supervision experience.

Technical Skills

I specialize in Python programming for data analysis and air pollution modeling, utilizing libraries like Pandas, NumPy, Matplotlib, and Scikit-learn for processing, visualization, and statistical analysis. Experienced in Linux environments, I manage large datasets efficiently. My work focuses on analyzing pollutant trends, developing predictive models, and assessing air quality impacts using ground-based and satellite data.

Patents

1. **Smart E Token System for Customer in Post Office for Speed & Registered Post.**
2. **IoT-Based Device for Assessing Magnetic Field of Bar Magnet and Method of Assessment Thereof.**
3. **Hussimeter Equipment for Rapid Phytochemical Analysis Experiments in Plants and Chemical Industries**

Conferences & Seminars

- Long-Term Variability of Air Pollutants in the Indo-Gangetic Plain: Drivers, Trends, and Hotspots," at the European Geosciences Union (EGU) General Assembly in 2025
- Completed the **DST-SERC Training Programme on Electro Dynamical Coupling of Atmospheric Regions** at the Indian Institute of Geomagnetism, Navi Mumbai (January 6–19, 2010).
- Participated in the **COSPAR Workshop on Remote Sensing of Aerosols and their Impacts** at Sharda University, Greater Noida (January 2–16, 2011).
- Presented papers at the **17th National Space Science Symposium** at Sri Venkateswara University, Tirupati (February 14–17, 2012) and **Indian Aerosol Science and Technology Association (IASTA-2012)** at BARC, Mumbai.
- Attended the **Aethalometer Inter-Comparison Experiment Workshop** at the Indian Institute of Science, Bangalore (April 3–4, 2017).
- Participated in the **Workshop for Undergraduate Teachers in Mathematics and Physics** at IISER Pune (January 19–23, 2018).

- Attended the **Workshop on Earth Observation Techniques: Applications to Land and Atmosphere** organized by IIT Kanpur and University of Leicester (March 26–29, 2018).
- Participated in the **Development of Skilled Manpower in Earth System Science Program** at the Indian Institute of Tropical Meteorology, Pune (March 12–15, 2019).

Supervision and Mentorship

- Successfully supervised **6 Ph.D. scholars** to completion, with **7 current Ph.D. scholars** under active supervision.
- Mentoring several **M.Sc. students** on their research projects, guiding them through theoretical and experimental work.
- Serving as the **Program Coordinator** for the **M.Sc. Physics** program at **Sangam University**, Bhilwara, Rajasthan, India.