

## Resume

- Name:** Samir Bajpai  
**Designation:** Professor  
**Department:** Department of Civil Engineering  
**Institution:** National Institute of Technology Raipur  
**Address:** National Institute of Technology Raipur, Great Eastern Rd,  
Amanaka, Raipur, Chhattisgarh 492010  
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### 2. Research Statement:

My academic, professional, and research interests span across the Civil Engineering discipline with an emphasis on the application of engineering concepts to solve environmental problems. My teaching pedagogy involves providing a nurturing academic environment for students that is conducive to applying concepts of environmental engineering to solve real-life problems. My research interests closely align with the National Institute of Technology, Raipur and the Government of India's priority research areas in environmental management, including -

- Application of Environmental Engineering
- Pollution Monitoring
- Air Quality Monitoring
- Solid Waste Management
- Water and Wastewater Treatment
- Anaerobic Treatment Systems
- Microplastics Pollution
- Constructed Wetlands
- Environmental Effects Monitoring (EEM)
- Environmental Impact Assessment (EIA)
- Life Cycle Assessment (LCA)
- Management Of Local Natural Resources

### 3. Educational Qualification:

S. No.	Degree	Year	Subject/Discipline	University/Institution
1	B.E.	1987	Civil Engineering	Pt. Ravishankar Shukla University Raipur
2	M.Tech.	1997	Civil Engineering / Environmental Engineering	IIT Kanpur
3	Ph.D.	2009	Civil Engineering / Environmental Engineering	Pt. Ravishankar Shukla University, Raipur

### Academic Research Topic

S. No.	Degree	Subject
1	M.Tech.	Treatment of Copper-Plating and Zinc-Plating Wastewaters from an Automobile Industry by Iron-Oxide-Coated Sand
2	Ph.D.	Study of Adsorption Characteristics of Some Heavy Metals on Some Soils from Chhattisgarh.

### 5. Professional Experience:

S.No.	Position	Name of the Institute	From	To
1	Design Engineer	Chandak, Sarda & Associates, Durg	October 1987	September 1990
2	Lecturer	Government Engineering College Bilaspur	October 1990	April 1993
3	Reader	Government Engineering College Bilaspur	April 1993	December 2005
4	Associate Professor	National Institute of Technology Raipur	January 2006	April 2013
5	Professor	National Institute of Technology, Raipur	April 2013	Till date

### 6. Research Guidance & Mentorship:

<b>S. No.</b>	<b>Degree</b>	<b>Completed</b>	<b>Ongoing</b>
<b>1</b>	M.Tech.	6	1
<b>2</b>	Ph.D.	4	5

**7. Professional Responsibilities:**

- a) Director, NIT Raipur Foundation for Innovation and Entrepreneurship, Section- 8 Company of NIT Raipur.
- b) Head, Career Development Cell, NIT Raipur 2018 - Present.
- c) Nodal officer for C-GANGA, IIT Kanpur.
- d) Nodal officer for preparation of State Specific Action Plan for Climate Change & Water Sector in Chhattisgarh State.
- e) Expert Member, Technical group for implementation of NAFCC funded project entitled 'Climate adaption in wetlands along Mahanadi River catchment area in Chhattisgarh State.
- f) Member, State level expert advisory committee on municipal solid waste management for Chhattisgarh State.
- g) Member, State level expert advisory committee on management of plastic waste for Chhattisgarh State.
- h) Member of State Technical Agency for Pradhan Mantri Gram Sadak Yojana by National Rural Roads Development Agency, Ministry of Surface Transport, GOI.
- i) Member of State Technical Agency for National Rural Water Supply Scheme, Ministry of Rural Development, GOI.
- j) Member of Expert Advisory Committee for Qualitative Improvement in Urban Water Supply Scheme Implemented by PHE Dept. of Govt. of Chhattisgarh.
- k) Member, Chhattisgarh State Committee, Chhattisgarh State Centre of Institution of Engineers (I)
- l) Expert Member for Evaluation of Research Project Proposals, Chhattisgarh Council of Science & Technology, Raipur.
- m) Expert Member for Evaluation of Research Project Proposals, Ministry of Environment & Forest, Govt. of India.

- n) Member, Interview Panels of several Engineering Colleges for selection of faculty.
- o) Member, Expert Panel for Interviews, Staff Selection Commission Raipur.
- p) Head, Training & Placement, NIT Raipur 1997-2018.

**8. Research Projects (Completed):**

<b>S. No.</b>	<b>Title</b>	<b>End Date</b>	<b>Agency</b>
1	Air Pollution Monitoring in Chhattisgarh region	2003	AICTE -TAPTEC
2	Lake Restoration in Budha Talab Raipur & Tarbahar Talab at Bilaspur, Chhattisgarh	2018	State Urban Development Agency, Chhattisgarh, Raipur
3	Preparation of Drainage pattern of industries linked to Ganga River Basin	2017	CG-CECB (Environmental Conservation Board, Raipur)
4	Study of pollutants released during open -burning of Municipal Solid Waste.	2019	CG-CECB (Environmental Conservation Board, Raipur)

**9. Research Projects (Ongoing):**

<b>S. No.</b>	<b>Title of Project</b>	<b>Sponsored by</b>	<b>Amount</b>
1.	To prepare the state specific action plan for water sector with respect to the climate change for the Chhattisgarh state	NERIWALM, National Water Mission, Govt of India	Rs. 30.00 Lakh
2	Evaluation of pollution potential (microplastics and some heavy metals) of municipal solid waste dumping sites, contaminant transport mechanisms, and effects on aquatic (surface water and groundwater) sources of Raipur city	Chhattisgarh Council of Science & Technology	Rs. 5.00 Lakh

## 10. Recent Research Contributions (Journals and Conferences):

### Research Publication in 2022-23

1. Soni S, Bajpai S, Verma M. Impact of Climate Variability on Streamflow Using Swat Model on Kharun River Basin. In *Recent Advances in Sustainable Environment: Select Proceedings of RAiSE 2022* 2022 Oct 26 (pp. 197-211). Singapore: Springer Nature Singapore.

### Research Publication in 2021-22

1. Kesharwani N, Bajpai S. Pilot scale anaerobic co-digestion at tropical ambient temperature of India: Digester performance and techno-economic assessment. *Bioresource Technology Reports*. 2021 Sep 1;15:100715.
2. Upadhyay K, Bajpai S. Microplastics in Landfills: A Comprehensive Review on Occurrence, Characteristics and Pathways to the Aquatic Environment. *Nature Environment & Pollution Technology*. 2021 Dec 2;20.
3. Tamrakar A, Upadhyay K, Bajpai S. Spatial variation of Physico-chemical parameters and water quality assessment of urban ponds at Raipur, Chhattisgarh, India. In *IOP Conference Series: Earth and Environmental Science 2022 Jun 1* (Vol. 1032, No. 1, p. 012034). IOP Publishing.
4. Upadhyay K, Bajpai S. Challenges and solutions in COVID-19 related pandemic solid waste management (PSWM)-A detailed analysis with special focus on plastic waste. In *IOP Conference Series: Earth and Environmental Science 2022 Jun 1* (Vol. 1032, No. 1, p. 012029). IOP Publishing.
5. Swarnakar AK, Bajpai S, Ahmad I. Various Types of Constructed Wetland for Wastewater Treatment-A Review. In *IOP Conference Series: Earth and Environmental Science 2022 Jun 1* (Vol. 1032, No. 1, p. 012026). IOP Publishing.

### Research Publication in 2020-21

1. Jethwa K, Bajpai S, Chaudhari PK. Application of a Low-Cost Technology to Treat Domestic Sewage and to Improve. *Environmental Processes and Management: Tools and Practices*. 2020 Feb 17;91:201.
2. Kesharwani N, Bajpai S. Batch anaerobic co-digestion of food waste and sludge: a multi criteria decision modelling (MCDM) approach. *SN Applied Sciences*. 2020 Aug;2(8):1-1.
3. Upadhyay K, Bajpai S. Microplastics: Pollutant Of Emerging Concern- What Do We Know So Far? - A Review. *Pollution Research*. 2020 Nov. 16: 40(2): 598 -602.
4. Swarnakar AK, Bajpai S, Ahmad I. Geo Physicochemical Properties for Soil Base Subsurface Constructed Wetland System. *AIJR Proceedings*. 2021 Apr 11:228-33.
5. Upadhyay K, Bajpai S. Transport of Microplastics from Municipal Solid Waste Landfills to Aquatic system: An Overview. *AIJR Proceedings*. 2021 Apr 11:222-7.

### **Research Publication in 2019-20**

1. Sakhlecha, Manish, Samir Bajpai and Rajesh Kumar Singh. "Evaluating the Environmental Impact Score of a Residential Building Using Life Cycle Assessment." IJSESD 10.4 (2019): 1-16. Web. 19 Aug. 2019. doi:10.4018/IJSESD.2019100101
2. Manoj Kumar Tiwari, Samir Bajpai, Umesh Kumar Dewangan, Raunak Kumar Tamrakar. "Seasonal assessment of surface water for selected traces in the vicinity of a thermal power plant". Environmental Nanotechnology, Monitoring & Management. Vol 11. May 2019. Pp 100200
3. Tiwari, M.K., Bajpai, S. and Dewangan, U.K., 2019. Environmental issues in thermal power plants—review in Chhattisgarh context. J. Mater. Environ. Sci, 10(11), pp.1123-1134.

### **Research Publication in 2018-19**

1. Tiwari MK, Bajpai S, Dewangan UK. Mobility Assessment of Heavy Metals with Seasonal Variation in an Industrial Region of Chhattisgarh. Nature Environment and Pollution Technology. 2018 Mar 1;17(1):189-94.
2. Kruti B Jethwa, P .K. Chaudhari, and Samir Bajpai, Phosphorus Retention in Lateritic Soil Constructed Wetland Treatment of Domestic Sewage. Urbanization Challenges In Emerging Economies: Energy And Water Infrastructure; Transportation Infrastructure; And Planning And Financing 2018, 0, 238-246.
3. Kruti B Jethwa, Parmesh Chaudhary, and Samir Bajpai; A review on design basis for constructed wetlands for wastewater treatment and K-C model; Pollution Research, 37 (4): 155-160 (2018). ISSN: 0257–8050
4. Nupur Kesharwani and Samir Bajpai; A Comprehensive Overview On Anaerobic Digestion Of Solid Waste Comprising Of Food Waste: A Review. International Journal of Advances in Engineering & Technology, Apr., 2018. Vol 11 Issue 2 pp 67-77.

### **Research Publication in 2017-18**

1. Ahirwar AV, Bajpai S. Seasonal Variability of TSPM, Pm10 and Pm2. 5 In Ambient Air at an Urban Industrial Area In Eastern Central Part of India. International Journal of Civil Engineering and Technology (IJCIET). 2017;25.
2. Ahirwar AV, Bajpai S. Monitoring of Ambient Air Particulate Matter during Diwali Festival at an Urban Industrial Area in Eastern Central part of India. International Journal of Control Theory and Applications. 2016;10-7.
3. Ahirwar AV, Bajpai S Wintertime Variation of Black Carbon in PM2.5 Aerosols Over an Urban Industrial City in East-Central India. Polish Journal of Environmental Studies. 2017;26-4.

### **Research Publication in 2016-17**

1. Tiwari MK, Bajpai S, Dewangan UK. Steel slag utilization—overview in Indian perspective. Int J Adv Res. 2016;4(8):2232-46.
2. Jethwa K, Bajpai S. Role of plants in constructed wetlands (CWS): A review. J. Chem. Pharm. Sci. 2016 Aug;2:4-10.
3. Tiwari MK, Bajpai S, Dewangan UK. Air and Leaching Pollution Scenario by Iron and

Steel Plants, in central India. Elixir Pollution. 2016 Oct 26(101):43495.

4. Tiwari MK, Bajpai S, Dewangan UK. Fly ash utilization: A brief review in Indian context. International Research Journal of Engineering and Technology (IRJET). 2016;3(4):2395-0056.

**11. Invited guest lectures and talks:** Several

**12. Professional Contribution:**

- a) Research and consultancy on environmental engineering related problems
- b) Design of pavements
- c) Design of concrete mixes

**13. Membership of Professional Societies:**

- a) Fellow member of The Institution of Engineers
- b) Life member of ISTE
- c) Member of Air & Waste Management Association
- d) Life Member of Indian Association for Environmental Management

**14. Professional Strengths:**

- a) Teaching, research, and consultancy experience of 26 years.
- b) Ability to handle projects independently