

PROFORMA FOR BIO-DATA (Up dated on 04.07.2024)

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3. Institution: Indian Institute of Technology (ISM) Dhanbad
4. Date of Birth: 04-06-1981
5. Sex: MALE
6. Academic Qualification:

Sl. No.	Degree	Year	Subjects	University	Percentage	Distinction
1	SSLC	1996	Maths, science	TN state board	83.8%	Secured School 3 rd rank
2	HSC	1998	Physics, Chemistry, Maths and Biology	TN state board	83.5%	Secured School 1 st rank
3	B.Tech	2002	Chemical Engineering	University of Madras	77.57%	Secured college 2 nd rank
4	M.Tech.	2005	Environmental Engineering	Pondicherry University	CGPA = 8.47	
5	Ph.D.	2011	Environmental Engineering	IIT, Guwahati	Not applicable	

7. Ph.D thesis title, Guide's Name, Institute/Organization/University, Year of Award:

Title of PhD thesis: Traffic Characteristics and Its Impact on Air Quality at Urban Roundabout
Guides Name: Prof Sharad B Gokhale (Guide) and Prof Alope Kumar Ghoshal (Co-Guide)
Institute: Indian Institute of Technology Guwahati
Year of award: 2011

8. Work experience (in chronological order):

S. No.	Positions held	Name of the Institution	From	To	Pay Scale
1.	Assistant Professor	IIT (ISM),	23.06.2011	18.08.2014	PB 3 with 7000 AGP

		Dhanbad			
2.	Assistant Professor	IIT (ISM), Dhanbad	19.08.2014	18.08.2017	PB 3 with 8000 AGP
3.	Assistant Professor	IIT (ISM), Dhanbad	19.08.2017	11.04.2021	Rs. 131400/- (Level of Pay is 13 A1) Equivalent to PB 4 with 9000 AGP
4.	Associate Professor	IIT (ISM), Dhanbad	12.04.2021	Till date	Rs. 157100/- (Level of Pay is 13 A2) Equivalent to PB 4 with 9500 AGP

9. Professional Recognition/ Award/ Prize/ Certificate, Fellowship received by the applicant.

S. No	Name of award	Awarding agency	Year
1.	Summer Research Fellowship	Indian Academy of Sciences, Bangalore	2014
2.	Shastri Mobility Programme (SMP)	Ministry of Education (MoE)	2021

10. Publications (List of papers published in SCI Journals, in year wise descending order).

S. N.	Name of authors	Title of paper	Name of International Journal	Volume/Issue	Page Nos	Year	IF	'Q' ranking
1.	Malik, N., Singh, V., Kumar, K., & Elumalai, S. P.	VOC source apportionment, reactivity, secondary transformations, and their prioritization using fuzzy-AHP method in a coal-mining city in India.	Environmental Science and Pollution Research	31(17)	25406-25423	2024		Q2
2.	Kumari, S., Elumalai, S. P., & Jain, M. K.	(2024). A comparison of soot emitted from school buses and shared auto-rickshaws in Indian tier-II city.	Environmental Forensics,	25(1-2)	13-20.	2024		Q4
3.	Chaudhry, S. K., & Elumalai, S. P.	Assessment of sustainable school transport policies on vehicular emissions using the IVE model.	Journal of Cleaner Production	434		2024		Q1
4.	Kumar, A., Elumalai, S.P.	Application of artificial neural network to screen out the dominant meteorological parameters for prediction of air temperature. https://doi.org/10.1007/s12145-023-01107-3	Earth Science Informatics	16	3697 – 3716	2023		Q2
5.	Malik, N., Elumalai, S. P., & Kumar, K.	Health risk assessment from exposure to ambient VOCs and particulate matter in different functional zones in Dhanbad, India.	Science of The Total Environment	891		2023		Q1
6.	Srivastava, A., Elumalai, S. P.,	Spatial distribution for assessing exposure of particulate matter (PM 10) in a densely populated coalfield using land use regression model						

7.	S Kumari, SP Elumalai, MK Jain	Study on effect of tire burning on particulate matter concentration and respiratory deposition doses to the workers and inhabitants during road pavement activity	Air Quality, Atmosphere & Health	15 (8)	1413 - 1426	2022	5.80	Q2
8.	A Srivastava, A Kumar, K Vaibhav, SP Elumalai	Inhalable particulate (PM10) emission externalities from overburden dumps and associated health risk assessment in densely populated coalfield	Stochastic Environmental Research and Risk Assessment		1-19	2022	3.82	Q1
9.	SK Chaudhry, SP Elumalai	Exploring the influence of ventilation settings and fan strength on passenger car in-cabin particle number concentration	Air Quality, Atmosphere & Health	15 (4)	679-690	2022	5.80	Q2
10.	S Kumari, SP Elumalai, MK Jain	A comparison of soot emitted from school buses and shared auto-rickshaws in Indian tier-II city	Environmental Forensics		1-8	2022	1.76	Q4
11.	M Hariram, R Sahu, A Kumar, SP Elumalai	Impact of emissions from coal-based thermal power plants on surrounding vegetation and air quality over Bokaro Thermal Power Plant	Asian Atmospheric Pollution (eBook ISBN: 9780128166949)		255-274	2022		
12.	Srivastava, A., Elumalai, S. P.,	Assessment of emission-source contribution to spatial dispersion for coal crusher agglomeration using prognostic model	Cleaner Engineering and Technology	3	100-113	2021		
13.	Kumari, S., Jain, M.K., Elumalai, S.P.,	Assessment of pollution and health risks of heavy metals in particulate matter and road dust along the road network of Dhanbad, India	Journal of Health and Pollution	11 (29)				
14.	Adak, P., Elumalai, S.P.,	Estimation of Onsite Factors on Polycyclic Aromatic Hydrocarbon Particulate Buildup in Urban Road Networks	Frontiers in Environmental Science	9	489	2021	5.41	Q1
15.	Kumar, A., Elumalai, S.P.,	Study on respiratory deposition doses of typical Indian opencast coal mineworkers using occupational particulate matter levels	Air Quality, Atmosphere & Health	14	1247 - 1265	2021	5.80	Q2
16.	Srivastava, A., Kumar, A., Elumalai, S.P.,	Evaluating Dispersion Modeling of Inhalable Particulates (PM10) Emissions in Complex Terrain of Coal Mines	Environmental Modeling and Assessment	26	385-403	2021	2.21	Q3
17.	Chaudhry, S.K., Elumalai, S.P.,	Students exposure assessment towards PM number concentration while commuting from different transport modes during school timings	Stochastic Environmental Research and Risk Assessment	35 (2)	371-388	2021	3.82	Q1
18.	Chaudhry, S.K., Elumalai, S.P.,	The influence of school bus ventilation scenarios over in-cabin PM number concentration and air exchange rates	Atmospheric Pollution Research	11(8)	1396 - 1407	2020	2.92	Q2
19.	HH Yang, SK Gupta, NB Dhital, LC Wang, SP Elumalai	Comparative investigation of coal-and oil-fired boilers based on emission factors, ozone and secondary organic aerosol formation potentials of VOCs	Journal of Environmental Sciences	92	245-255	2020	6.79	Q1
20.	A Kumar, SP Elumalai, HH Yang	On-site and off-site material preparation pavement approaches on particle emission and associated health impacts on workers	Stochastic Environmental Research and	34 (1)	183-199	2020	3.82	Q1

			Risk Assessment					
21.	Gupta, S. K., Elumalai, S.P.,	Exposure to traffic-related particulate matter and deposition dose to auto rickshaw driver in Dhanbad, India	Atmospheric pollution research	10 (4)	1128 - 1139	2019	4.83	Q2
22.	Gupta, S. K., Elumalai, S.P.,	Dependence of urban air pollutants on morning/evening peak hours and seasons	Archives of environmental contamination and toxicology	76 (4)	572-590	2019	3.69	Q3
23.	Kumar, A., Elumalai, S.P.,	Influence of Road Paving on Particulate Matter Emission and Fingerprinting of Elements of Road Dust.	Archives of environmental contamination and toxicology	75 (3)	424-435	2018	3.69	Q3
24.	Srivastava, A., Elumalai, S. P., Raju, E. V. R.,	Relationship in metastasis of coal fire and land use/cover using thermal imagery and support vector machine classifier	Arabian Journal of Geosciences	11 (6)	120	2018	1.98	Q4
25.	Gupta, S. K., Elumalai, S.P.,	Adverse impacts of fog events during winter on fine particulate matter, CO and VOCs: a case study of a highway near Dhanbad, India	Weather	73 (12)	396-402	2018	2.23	Q4
26.	Sahu, V., Elumalai, S.P., Gautam, S., Singh, N.K., Singh, P.,	Characterization of indoor settled dust and investigation of indoor air quality in different micro-environments	International journal of environmental health research	28 (4)	419-431	2018	1.91	Q3
27.	Manisha, Sahu, R., Elumalai, S.P.,	Impact Assessment of Atmospheric Dust on Foliage Pigments and Pollution Resistances of Plants Grown Nearby Coal Based Thermal Power Plants	Archives of Environmental Contamination and Toxicology	74 (1)	56-70	2018	3.69	Q3
28.	Sahu, R., Elumalai, S.P.,	Identifying speed hump, a traffic calming device, as a hotspot for environmental contamination in traffic-affected urban roads	ACS omega	2 (9)	5434 - 5444	2017	4.13	Q2
29.	Gupta, S. K., Elumalai, S.P.,	Size-segregated particulate matter and its association with respiratory deposition doses among outdoor exercisers in Dhanbad city, India	Journal of the Air & Waste Management Association	67 (10)	1137 - 1145	2017	3.36	Q2
30.	Manisha, Elumalai, S.P., Pal., A.K.,	Determining the Contribution of Nearby Power Plants to Deposited Foliar Dust: A Case Study of BTPS, Bokaro	Archives of Environmental Contamination and Toxicology	71 (4)	485-499	2016	3.69	Q2
31.	Sahu, R., Adak, P., and Elumalai, S.P.,	Characterization of hazardous solid waste (soot) accumulated in tailpipe of typical Indian share autos	Current Science	111 (3)	560-564	2016	1.16	Q3

32.	Kumar, A., Samadder, S.R., and Elumalai, S.P.,	Recovery of Trace and Heavy Metals from Coal Combustion Residues for Reuse and Safe Disposal: A Review	JOM (The Journal of The Minerals, Metals & Materials Society)	68 (9)	2413 - 2417	2016	2.97	Q2
33.	Singh, S., Elumalai, S.P., Pal., A.K.,	Rain pH estimation based on the particulate matter pollutants and wet deposition study	Science of the Total Environment	563-564	293-301	2016	10.75	Q1
34.	Adak, P., Sahu, R. and Elumalai, S.P.,	Development of emission factor for motorcycles and shared auto rickshaws using real world driving cycle for a typical Indian City	Science of the Total Environment	544	299-308	2016	10.75	Q1
35.	Pandian, S., Gokhale, S., Ghoshal, A.K.,	An open-terrain line source model coupled with street-canyon effects to forecast carbon monoxide at traffic roundabout	Science of the Total Environment	409 (6)	1145 - 1153	2011	10.75	Q1
36.	Pandian, S., Gokhale, S., Ghoshal, A.K.,	Evaluating effects of traffic and vehicle characteristics on vehicular emissions near traffic intersections	Transportation Research Part D: Transport and Environment	14 (3)	180-196	2009	7.04	Q1
37.	Gokhale, S., Pandian, S.,	A semi-empirical box model approach for predicting the carbon monoxide concentrations at an urban traffic intersection	Atmospheric Environment	41 (36)	7940 - 7950	2007	5.75	Q1

11. Detail of patents. NIL

12. Books/Reports/Chapters/General articles etc.

1. Hariram M., Elumalai S. P. & Sahu R. "Impacts Assessment of Atmospheric Pollutants from Anthropogenic Sources on Plant Physiology and Soil" **Submitted book:** "Asian atmospheric pollution" by Singh (Elsevier).
2. Singh, S., Elumalai S. P., Pal A. K. Hung, Y. T., 2020. "RAIN pH ESTIMATION BASED ON THE PARTICULATE MATTER POLLUTANTS AND WET DEPOSITION STUDY". Handbook of Environment and Waste Management - Volume 3: Acid Rain And Greenhouse Gas Pollution Control by World Scientific Publishing Co Pte Ltd. ISBN13 9789811207129.
3. Kumar A., & Elumalai S. P. (2015). "Impacts of Urbanization on Urban Heat Island", July 28-29, 2015. Climate Change Combating Through Science and Technology. Indian Institute of Forest Management, Bhopal, India. ISBN: 978-81-211-0949-9, pp. 301-310.

13. International/National Conferences

1. Kumar A., Elumalai S. P., (2019). Importance of measuring ground surface temperature of paved surfaces to study changes in microclimate of an urban area" was awarded best research paper at the conference "Young scientists conference" held at India International Science Festival, Indira Gandhi Prasthithan, Lucknow, October 5-8th, 2018.
2. Kumar A., Elumalai S. P., (2019). GHG Inventory for Mining and Quarrying in India based on Stoichiometric Combustion of Diesel and Simulation of Ethanol-Diesel Blend for Emission Reduction. 9th International Conference on Chemistry and Chemical Process (ICCCP) 2019, Singapore, February 25-28th, 2019.

14. Awards/ Distinction Secured

1. Secured **best research paper award** for presenting “Impact of Traffic Type and Non-vehicular Sources on SPM and RPM in Indian Urban City Dhanbad Using M-GFLSM Model” in 2nd Annual international conference proceedings in “Sustainable Energy and Environmental Sciences (SEES)”, Singapore, during 25-26 February, 2013.
2. Presented research paper titled “**Impacts of urbanization on urban heat island**” at **Youth Ready for Climate Change and Transformation** dated 28-29 July 2015 in **IIFM, Bhopal** conference. The organizing committee awarded the **best 2nd research paper award** at the end of the conference.
3. The Paper titled “**Importance of measuring ground surface temperature of paved surfaces to study changes in microclimate of an urban area**” was awarded **best research paper** at the conference “Young scientists conference” held at India International Science Festival, Indira Gandhi Pratisthan, Lucknow , October 5-8th, 2018.

15. Any other information:

Details of PhD guidance (Awarded): 12 Nos

S. N.	Title of thesis	Student name	Role	Status
1	Development of an air quality model for the assessment of pollutants from a coal-based thermal power plant	Manisha (2012DR0100)	Co-Guide	PhD awarded on 31.03.2017
2	Study on effects of private and public transport on vehicular exhaust emission (VEE) and strategies to improve ambient air quality of Dhanbad road networks	Prasenjit Adak (2012DR0154)	Guide	PhD awarded on 11.10.2017
3	Assessment of coal mine derived particulate matter deposition on nearby areas of opencast coal mines	Shweta Singh (2013DR0231)	Guide	PhD awarded on 20.03.2018
4	Traffic and meteorological impacts on urban air quality and associated health risk	Sunil Kumar Gupta (2013DR0045)	Guide	PhD awarded on 04.04.2018
5	Study on traffic generated pollutants at traffic calming devices and its management	Ravi Sahu (2013DR0273)	Guide	PhD awarded on 04.04.2018
6	Evaluating the effects of Non-exhaust associated emission from road transport on air quality of road microenvironments in Tier II type city	Mr. Anil Kumar	Guide	PhD awarded on 20.10.2021
7	STUDY ON DISPERSION MODELLING FOR PARTICULATE MATTER DISTRIBUTION IN COAL MINE ENVIRONMENTS	Mr. Amartanshu Srivastava	Guide	PhD awarded on May 2022
8	Evaluation of interdependency between urbanization, vehicular emission and transport policy	Mr. Sandeep Kumar Chaudhry	Guide	PhD awarded on 25.07.2022
9	Design of retrofit to capture vehicular particulate matter and its performance evaluation in real world condition	Ms. Shweta Kumari	Co-Guide	PhD awarded on February 2023
10	Study on environmental impacts of HEMMs used in opencast mines	Mr. Ambasht Kumar	Guide	PhD awarded on 06.10.2023
11	Source Apportionment and Associated Health Risks of Ambient VOCs and PM in a Coal- mining City of India	Ms. Nidhi	Guide	PhD awarded on 23.02.2024

12	A study of Urban Heat Island intensity using Local Climate Zone classification method and Urban Canopy Modeling in Dhanbad city, India	Mr. Ankit Kumar	Guide	PhD awarded on 24.04.2024
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Details of PhD guidance (On-going): 01 No

In total 01 PhD student is carrying out his thesis work in topics including traffic emissions at intersection areas and assessment of resuspended particulate matter pollution in urban areas.

18. Details of Obtained Research & Development Projects

S. No	Title of the Project	Funding Agency	Role	Months/ year	Amount (Lakhs)	Status of the Project
1.	Carrying capacity study of Dhanbad city under National Clean Air Program (NCAP) (JSPCB/2022-2023/987/ESE)	JSPCB	PI	14.02.2023 – 15.08.2024	9.44	Ongoing
2.	Monitoring of air quality in non-monsoon period at identified locations of Kenda Area (ECL), both ambient and process area to arrive at the impact of proposed changes in cluster 11 (ECL/2022-2023/968/ESE)	ECL Kenda	PI	01.01.2023 – 30.06.2023	20.39	Ongoing
3.	Developing emission inventory for Dhanbad, India (CSTEP/2022-2023/906/ESE)	CSTEP, Bangalore	PI	01.09.22 – 31.12.22	3.0975	Completed
4.	Development of altered exhaust pipe design in school bus for reducing nano particle exposure to school going children SICI(SMP)/2020-2021/776/ESE	DST	PI	01.02.2021 – 22.02.2021	0.57	Completed
5.	Development of catalyst-reductant system to control NOx emissions from Lean burn engines IIT(ISM)/P/2019-2020/685/INSTITUTE	INSTITUTE PDF	PI	18.12.19 – 17.12.21	4.5	Completed
6.	Monitoring of air quality and analysis of water samples at different point of Jitpur colliery, SAIL	SAIL	PI	2019-2020	4.956	Completed
7.	Monitoring of air, water & noise at different location of coal washery of SAIL at Chasnalla	SAIL	Co-PI	2019-2021	16.99	Completed
8.	Characterization of diesel particulate matter from traffic sources	TEQIP-II	PI	09 (Dec 15-Aug 16)	1.5	Completed
9.	Physical and chemical characterization of PM for Dhanbad city to identify the contribution from traffic sources	IIT (ISM), Dhanbad	PI	36 (Mar 13 – Mar 16)	9.4	Completed
10.	Qualitative assessment of air quality status for Dhanbad city by means of particulate matter pollution	IIT (ISM), Dhanbad	PI	24 (Sep 12-Aug 14)	0.96	Completed

19. Details of Obtained Consultancy Projects

S. No.	Project title	Name of the client	Role of Assessee	Amount (Lacs)	Details of work done
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1.	Stack monitoring at MPL, Dhanbad	MPL	CI	0.845	Completed
2.	Air and mine water analysis for our two (02) collieries, namely Bararee Colliery and Lodna Colliery (M/s BCCL)	BCCL	Co-CI	1.145	Completed
3.	Monitoring of Air Quality analysis and water samples at different point of washery, Chasnalla	SAIL	CI	1.725	Completed
4.	Monitoring of ambient air quality of Katras area BCCL as per NAAQS 2009	BCCL	Co-CI	2.300	Completed
5.	Study on the impact of the traffic density on ecology and human community	Fee grade Co Ltd, Barbil	Co-CI	5.810	Completed
6.	Development of Framework for environmental monitoring (AAQM) implementation and control in line with CPCB guidelines for Iron ore mines for Formento Resource Goa	FRPL	Co-CI	28.980	Completed
7	Monitoring of Air Quality analysis and water samples at different point of washery, Chasnalla	SAIL	CI	5.700	Completed
8	Conducting "Random verification of Air sample" for cluster VII group of mines, BCCL	BCCL	CI	0.708	Completed

Suresh Pandian

(Suresh Pandian Elumalai)