


<b>Dr. Suresh Pandian Elumalai</b>					
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<b>ACADEMIC BACKGROUND</b>					
<b>Name of Degree</b>	<b>Branch / Specialization</b>	<b>College/Institute/University</b>	<b>Year</b>	<b>CGPA/ %</b>	<b>Class</b>
Ph.D.	Environmental Engineering	IIT GUWAHATI, Assam, India.	2006 – 2011	Awarded	N/A
M. Tech	Environmental Engineering	Pondicherry Engg College/ Pondicherry Univ, Pondicherry, India.	2003 – 2005	8.47	I <sup>st</sup>
B. Tech	Chemical Engineering	Arunai Engg College/ Univ of Madras, Tiruvannamalai, 606603, India.	1998 – 2002	77.57	I <sup>st</sup>
HSC	Science (PCMB)	Tamil Nadu State Board	1998	83.5	First
SSLC	Science	Tamil Nadu State Board	1996	83.8	First

### **RESEARCH INTERESTS**

1. Air Pollution
2. Vehicular Emission inventory and dispersion modeling

### **PROFESSIONAL APPOINTMENTS**

1. **23.06.2011 to Till Now:** Assistant Professor of Env. Sci. & Engg., IIT (ISM), Dhanbad

### **LIST OF PUBLICATION**

1. International Journal (SCI/SCIE Index): **23** (Average Impact factor: **2.80**)
2. Book Chapter: **03**
3. International & National Conference: **08**

### **RESEARCH GUIDANCE**

1. Ph. D Guidance (**Awarded**): **04** (Guide) + **01** (Co-guide)
2. Ph. D Guidance (**Ongoing**): **05** (Guide) + **01** (Co-guide)
3. M. Tech Guidance (**Awarded**): **19** (Guide) + **01** (Co-guide)
4. M. Tech Guidance (**Ongoing**): **02** (Guide)

### **RESEARCH PROJECTS**

1. Research Projects: **04** (Completed) + **02** (On-going)
2. Major consultancy Projects: **08** (Completed)

## **DETAILS OF COURSES TAUGHT**

1. Atmospheric Science and Climate Change (ESO paper)
2. Applied Thermodynamics (ESC13103): (B. Tech, Env Engg)
3. Chemical Engineering Thermodynamics - I: (B. Tech, Chemical Engg)
4. Air Pollution Control: (B. Tech, Env Engg)
5. Air Pollution Modeling: (B. Tech, Env Engg)
6. Air Pollution: (B. Tech, Env Engg)
7. Air and Noise Pollution (DC) (ESC 503): (M. Tech, Env Sci Engg)
8. Earth System Sciences: (B. Tech, Common)
9. Energy & Environment: (B. Tech, Env Engg)
10. Environmental Chemistry (ESC51103): (M. Tech, Env Sci Engg)
11. Fluid Mechanics & Hydraulics: (B. Tech, Env Engg)
12. Process Calculations: (B. Tech, Chemical Engg)
13. Industrial Pollution Control and its Management (ESE18101): (B. Tech, Env Engg)
14. Climate Change and its Mitigation (ESE17102): (B. Tech, Env Engg)
15. Environmental Aspects of Industries
16. Noise Pollution Control
17. Research Methodology for Environmental Engineers

## **DETAILS OF ADMINISTRATIVE EXPERIENCE**

1. Nodal Officer at National Clean Air Programme (NCAP) for Jharkhand state
2. Executive Member of IIT (ISM) Sports Committee
3. Departmental Time-table in-charge
4. Departmental MIS coordinator
5. Departmental TEQIP Coordinator
6. Member, Anti-ragging scouts
7. Departmental coordinator of JRF
8. JRF admission committee member (institute level)
9. Faculty In charge, Air Pollution Lab
10. Member, Tabulation Committee

## MEMBER OF PROFESSIONAL BODIES

S.N	Professional Body (Name & Address)	Membership		Valid Till
		Grade	No.	
1.	The Mining, Geological and Metallurgical Institute of India, GN-38/4, Sector – V, Salt Lake, Kolkata - 700091	Life	10159	Life Member
2.	Indian Water Works Association (IWWA) Mumbai	Life	7064	Life time
3.	Indian Institute of Chemical Engineers (IChE) Kolkata	Life	56565	Life time
4.	American Chemical Society (ACS), Columbus, OH, USA	Annual	31015732	June, 2017

## DETAILS OF ONGOING/COMPLETED RESEARCH & DEVELOPMENT PROJECTS

S. No	Title of the Project	Funding Agency	Role	Months/year	Amount (Lakhs)	Status of the Project
1.	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
2.	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
3.	Characterization of diesel particulate matter from traffic sources	TEQIP-II	PI	09 (Dec 15- Aug 16)	1.5	Completed
4.	Monitoring of air, water & noise at different location of coal washery of SAIL at Chasnalla	SAIL	Co-PI	2019-2021	16.99	Completed
5.	Monitoring of air quality and analysis of water samples at different point of Jitpur colliery, SAIL	SAIL	PI	2019-2020	4.956	Completed
6.	Development of catalyst-reductant system to control NOx emissions from Lean burn engines	INSTITUTE PDF	PI	18.12.19 – 17.12.21	5.0	On-going
7.	Developing emission inventory for Dhanbad, India	CSTEP, Bangalore	PI	24.03.21 – 10.06.21	2.225	On-going

## MAJOR ONGOING/COMPLETED CONSULTANCY PROJECTS

S.N.	Project title	Funding Agency	Role	Amount (Lacs)	Details of work done
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

### **AWARDS/ FELLOWSHIP/ DISTINCTION SECURED**

S.N.	Details
1.	A SICI (SMP) [Shastri Indo-Canadian Institute (Shastri Mobility Programme)] short term project entitled " <b>Development of altered exhaust pipe design in school bus for reducing nano particle exposure to school going children</b> " has been sanctioned vide Email dated 12.11.2020 for Rs. 57,000.00 (Rupees Fifty Seven Thousand only).
2.	The Paper titled " <b>Importance of measuring ground surface temperature of paved surfaces to study changes in microclimate of an urban area</b> " was awarded <b>best research paper</b> at the conference "Young scientists conference" held at India International Science Festival, Indira Gandhi Pratisthan, Lucknow, October 5-8 <sup>th</sup> , 2018.
3.	Presented research paper titled " <b>Impacts of urbanization on urban heat island</b> " at <b>Youth Ready for Climate Change and Transformation</b> dated 28-29 July 2015 in IIFM, Bhopal conference. The organizing committee awarded the <b>best 2<sup>nd</sup> research paper award</b> at the end of the conference.
4.	Awarded Summer Research Fellowship by Indian Academy of Sciences, Bangalore in 2014.
5.	Secured <b>best research paper award</b> for presenting "Impact of Traffic Type and Non-vehicular Sources on SPM and RPM in Indian Urban City Dhanbad Using M-GFLSM Model" in 2 <sup>nd</sup> Annual international conference proceedings in "Sustainable Energy and Environmental Sciences (SEES)", Singapore, during 25-26 February, 2013.

### **DETAILS OF PH. D GUIDANCE**

S. N.	Title of thesis	Student name	Role	Status
1	Assessment of the impacts of air pollutants from anthropogenic sources on plant physiology and soil	Ms. Manisha	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	Mr. Prasenjit Adak	Guide	PhD awarded on 11.10.2017
3	Assessment of coal mine derived particulate matter deposition on nearby areas of opencast coal mines	Ms. Shweta Singh	Guide	PhD awarded on 20.03.2018
4	Traffic and meteorological impacts on urban air quality and associated health risk	Mr. Sunil Kumar Gupta	Guide	PhD awarded on 04.04.2018

5	Study on traffic generated pollutants at traffic calming devices and its management	Mr. Ravi Sahu	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	Thesis submitted on 20.01.2021
1	Design of retrofit to capture vehicular particulate matter and its performance evaluation in real world condition	Ms. Shweta Kumari	Co-Guide	On-going
2	The impact of urbanization on micro-climate	Mr. Ankit Kumar	Guide	On-going
3	Evaluation of interdependency between urbanization, vehicular emission and transport policy	Mr. Sandeep Kumar Chaudhry	Guide	On-going
4	Study on environmental impacts of HEMMs used in opencast mines	Mr. Ambasht Kumar	Guide	On-going
5	Study on effects of atmospheric acid deposition on ecosystem	Ms. Nidhi	Guide	On-going

### **MAJOR CONFERENCE/ REFRESHER/SHORT TERM COURSES ATTENDED**

S. N.	Details
1.	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.
2.	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 Praatisthan, Lucknow, October 5-8 <sup>th</sup> , 2018.
3.	Three days training on “Current Requirements in Environmental Impact Assessment (EIA) – Process & Procedures (as per MOEF Guidelines)” organized by ESCI, Hyderabad during January 23-25, 2012.
4.	Adak, P., Elumalai, S. P., & Sahu, R. (2015, December). Study on impacts of autorickshaws on fuel consumption and delay of personal vehicles, December 14-16, 2015. World Congress on Sustainable Technologies (WCST), London, UK.
5.	Sahu, R., Pandian, S., Adak, P., Physical and Chemical Characterization of Hazardous Waste Emitted by Typical Indian Share Autos and Buses, January 28-31, 2015, 2nd International Conference on Bioenergy, Environment and Sustainable Technologies (BEST2015), Arunai Engineering College, Tiruvannamalai, Tamilnadu, India.
6.	Adak, P., Pandian, S., Sahu, R., Comparison of air-borne Particle size distribution between freeways and intersections: A case study of NH-32, Dhanbad, India, June 21- 22, 2014. International Conference of Krishi Sanskriti on Energy Technology, Power engineering & Environmental Sustainability, Jawaharlal Nehru University, New Delhi, India.
7.	Manisha, Pandian, S., Pal, A.K. (2014). Dust arresting capacity and its impact on physiological parameter of plants. International conference on energy technology, power engineering & environmental sustainability 2014. 21-22 June, Krishi Sanskriti, Delhi.
8.	Manisha and Pandian, S. (2014). Review on Biological Methods to Control Wind Derived Soil Dust. National conference on recent trends in chemical and environmental sciences. (Best oral presentation), 27-28 FEB 2014, ARNI university Kangra, HP.

## PUBLICATION DETAILS

### A) List of Publication (SCI/SCIE)

Publication Index					
Q1	Q2	Q3	Q4	Total Publication (SCI/SCIE) only	Average Impact factor
08	05	08	02	20 No. (18 As corresponding Author + 05 As Co-author)	2.80

S. N.	Name of authors	Title of paper	Name of International Journal	Volume/Issue	Page Nos	Year	IF	'Q' ranking
1.	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	<b>Accepted</b>		2021	2.87	Q2
2.	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	<b>Accepted</b>		2021	1.63	Q3
3.	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	2.72	Q1
4.	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
5.	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	3.96	Q1
6.	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 Risk Assessment	34 (1)	183-199	2020	2.72	Q1
7.	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	2.92	Q3
8.	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	2.4	Q3
9.	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	2.4	Q3
10.	Srivastava, A., Elumalai, S. P., Raju, E. V.	Relationship in metastasis of coal fire and land use/cover using thermal imagery and	Arabian Journal	11 (6)	120	2018	1.53	Q4

	R.,	support vector machine classifier	of Geosciences					
11.	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	0.94	Q4
12.	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
13.	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	2.4	Q3
14.	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	2.58	Q3
15.	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	2.24	Q2
16.	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	2.4	Q2
17.	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	0.72	Q3
18.	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	2.6	Q2
19.	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	6.5	Q1
20.	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	6.5	Q1
21.	Pandian, S.,	An open-terrain line source model coupled	Science of the	409	1145	2011	6.5	Q1



	Gokhale, S., Ghoshal, A.K.,	with street-canyon effects to forecast carbon monoxide at traffic roundabout	Total Environment	(6)	- 1153			
22.	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	4.57	Q1
23.	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	4.03	Q1

### **B) List of Publication (Book Chapter)**

S. No	Publication Details
1.	Hariram M., Elumalai S. P. & Sahu R. "Impacts Assessment of Atmospheric Pollutants from Anthropogenic Sources on Plant Physiology and Soil" <b>Submitted book:</b> "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.

### **C) List of Publication (Conference/workshop): 08**

*Suresh Pandian*

**(Suresh Pandian E.)**