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**DATE OF BIRTH: 19.05.1968**



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**Professor and Head**

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## I. Educational Qualification

Degree	Branch	Institution	Year
B.Sc.,	Zoology	Guru Nanak College, Chennai, India	1988
M.Sc.,	Environmental Toxicology	Dr. PGIBMS, Taramani, Chennai, India	1990
Ph.D.,	Environmental Health Engineering	Sri Ramachandra University), Chennai, India	2011

## II. Position and Employment

2016-To date Professor & Head, Dept. of Environmental Health Engineering, Sri Ramachandra Institute of Higher Education and Research (DU), Porur, Chennai – 600116  
2011-2016 Associate Professor & Head, Dept. of Environmental Health Engineering, Sri Ramachandra Medical College & Research Institute (DU), Chennai – 600116  
2006-2011 Assistant Professor, Dept. of Environmental Health Engineering, Sri Ramachandra Medical College & Research Institute (DU), Chennai – 600116  
2002-2006 Lecturer, Dept. of Environmental Health Engineering Sri Ramachandra Medical College & Research Institute (DU), Porur, Chennai – 600116  
2000-2002 Tutor, Dept. of Environmental Health Engineering, Sri Ramachandra Medical College & Research Institute (DU), Porur, Chennai – 600116  
1999-2000 Laboratory Supervisor, Dept. of Environmental Health Engineering, Sri Ramachandra Medical College & Research Institute (DU), Porur, Chennai – 600116

- 1997-1999 Research assistant, Dept. of Environmental Health Engineering, Sri Ramachandra Medical College & Research Institute (DU), Porur, Chennai – 600116
- 1994-1997 Technical assistant, North Madras thermal Power Station, Chennai, India

### III. Current Responsibilities

1. Teaching for **Master degree programs**: Master of Public Health, Industrial Hygiene & Safety, Biotechnology; **Fellowship Program**: Associate Fellow of Industrial Health (AFIH); **BSc Programs**: Dental Science, Biomedical Sciences, Environmental Health Sciences
2. Involved in Research Projects in various capacity as principal investigator, principal co-investigator and co-investigator.
3. Providing consultancy services and training for various industry professionals in Occupational Safety and Health.
4. Resource person for Biomedical waste management training of IGNOU study centre.
5. Serving in various committees of University:
  - 1 Chairman, Environmental Management Cell
  - 2 Secretary, College Quality Cell
  - 3 Secretary, Safety Committee, Sri Ramachandra Hospital
  - 4 Member, University Council
  - 5 Member in Radiation, Laboratory and Hazardous Materials (Hazmat) Safety Committee, Sri Ramachandra Medical Center
  - 6 Member, Safety and Utility Committee, SRMC&RI(DU)
  - 7 Member, Publication Oversight committee, SRMC&RI(DU)
  - 8 Member, Sri Ramachandra Journal of Medicine, SRMC&RI(DU)
  - 9 Member, PhD Admission committee, SRMC&RI(DU)
  - 10 Member, Academic Council, SRIHER (DU)

### IV. Professional Experience in the field of Occupational Health, Environmental Health, Industrial Hygiene, Air Pollution and Health Risk Assessment

- Development of Industrial Hygiene Training Programs for various industrial sectors encompassing the whole range of IH functions. viz., Anticipation, Recognition, Evaluation and Control. Experience in Health Impact Assessments in compliance to management systems
- Development of sampling strategy for exposure assessment for chemical, physical and biological hazards
- Conducting and implementing the programs on Exposure Assessment, Hearing Conservation, Indoor Air Quality (IAQ) assessment, Asbestos Abatement, Chemical Hazard assessment and Management, Hazard communication strategies, Respiratory protection, Noise Assessment and Management, Heat stress assessment and management and Training in Environment, Occupational Health & Safety.
- Experience in Exposure Assessment program-Basic characterization, SEG (Similar Exposure Group) and Exposure Profile and Matrices Development
- Hands on experience in the development and implementation of Respiratory Protection Program
- Good knowledge of LEV (Local Exhaust Ventilation) and Laboratory Fume Hood testing.

- Development and implementation of Ionizing & Non-Ionizing radiation guidelines, monitoring and control measures.
- Extensive experience in National Ambient Air Quality Monitoring for monitoring and analysis of suspended particulate matter (SPM), respirable suspended particulate matter (SPM), Oxides of Sulphur and Nitrogen and Other Gases like ammonia and hydrogen sulphide using Central Pollution Control Board (CPCB), India protocol and US-EPA Protocol
- Extensive knowledge in the implementation of Medical Surveillance requirements for various exposures based on ACGIH BEI's, German BAT, NIOSH criteria documents etc.
- Experience in implementation of Audiometry and Pulmonary Function Test procedures

#### V. Overseas experience

- **Served a international trainer** for the Breathlife training program (Air pollution and Health) in Maldives from 9-11 July 2019
- **Training labour inspectors of Bhutan** Industrial Hygiene measurements, August 2016.
- **Resource person** for Training program on Household Air Pollution (HAP) and Monitoring, Horn of Africa Regional Environmental Centre and Network, Addis Ababa University, Ethiopia, July 2016.
- **Training labour inspectors on** “pollution monitoring, Interpretation and Reporting (Dust)” August 2013
- **Served as International trainer** for “Basic Occupational Health Services” at Maldives, 14th to 15th September 2011
- **March 2007 – March 2008:** Worked as Technical Advisor for an Indoor Air Quality (IAQ) Project for Al-Khafji Joint Operations (KJO), Saudi Arabia (Contract Number: BQ 598.EM06).
- **Served as an international trainer** for the German Technical Cooperation – “Chemical Management” held at Vietnam
- **2006-** Served as temporary advisor to World Health Organization, SEARO, for the “Inter-Regional Training Workshop on Indoor Air Pollution and Household Energy Monitoring”, held at Colombo, Sri Lanka, from 22<sup>nd</sup> to 26<sup>th</sup> May 2006

#### VI. Research Experiences:

S.No	Capacity	Research Projects
1.	Principal Investigator	Assessing the influence of workplace, mode of commuting and residence characteristics on personal exposure to PM 2.5, funded by World Health Organization, SEARO, New Delhi.
2.	Principal Investigator	National Health Profile Study for Chennai City, Funded by Ministry of Environment, Forest and Climate Change.
3.	Co-Investigator	Household air pollution and health: a multi-country LPG intervention trial
4.	Co-Investigator	Increasing LPG Use during Pregnancy
5.	Co-Investigator	Developing exposure-response relationships for cardio-respiratory health

		risks and household air pollution in rural communities of Tamil Nadu, India, in collaboration with Tufts University, USA,
6.	Co-Investigator	Air Pollution, Health and Climate in India: Building Capacities for Health Research and Program Evaluation
7.	Principal Investigator	Exposure assessment and modeling for PM2.5 in the Andhra Pradesh children's & parent study (APCAPS): A Prospective Cohort Examine risk factor for Cardio vascular health effects in India, funded by European Research Council, EU
8.	Co-Investigator	Exploring respiratory health outcomes from sustained use of efficient cook-stoves: A pilot cluster randomized trial in rural households of Andhra Pradesh and Karnataka, funded by NIH USA.
9.	Co-Investigator	Exploratory grant on " Orofacial Clefts: Nutritional and Environmental Risk Factors" in collaboration with Utah State University and University of Dundee, funded by National Institutes of Health (R21),USA and the UKIERI, UK
10.	Co-Investigator	High Occupational temperature, health and productivity suppression (HOTHAPS) in relation to Climate Change, funded by Swedish International Developmental Agency
11.	Co-Principal Investigator	Centre for Advanced Research on Environmental Health (Air Pollution), Indian Council of Medical Research, Govt.of India.
12.	Co-Investigator	"Developing a framework for health effects of air pollution, in Lumbini, Nepal" funded by The World Health Organization, SEARO.
13.	Co-Investigator	Monitoring Air Pollution and Networking (MAPAN)-India, funded by Ministry of Earth Sciences, Government of India
14.	Principal Investigator	" The National New Born Stove Trial: A Pilot Feasibility Assessment" in collaboration with UC Berkeley, Columbia University, and INCLEN Trust, India , funded in part by The World Bank.
15.	Co-Investigator	" Developing Trainer Guidance and Implementing a regional Framework for Basic Occupational Health Services" funded by The World Health Organization, SEARO.
16.	Co-Investigator	"Evaluation of Improved Biomass stoves: a pilot assessment for 2 states" funded by United Nations Environment Programme
17.	Principal Investigator	"Monitoring and Evaluation of Improved Biomass Stoves in Tamil Nadu and Karnataka", funded by The Shell Foundation, USA. (Four phases)
18.	Co-Investigator	"Assessment of heat stress, worker productivity and climate change: A pilot assessment" funded by the World Health Organisation, SEARO.
19.	Principal Investigator	"Occupational Safety and Health Aspects of CTC Substitutes: An assessment for 8 industrial sectors" funded by GTZ-India under the Joint GTZ-Proklima-Ozone Cell (MOEF), Govt. of India Collaborative Program (2

		Phases).
20.	Co-Investigator	“Design of a Basic Occupational Health Services Framework for public health systems in Tamil Nadu” funded by the World Health Organisation (India Office).
21.	Co-Investigator	“Sound chemicals management for a healthier environment in India and Vietnam” funded by The European Commission, Belgium in collaboration with (GTZ) GmbH, Germany.
22.	Co-Investigator	” Risk management strategies for small scale enterprises in Uttar Pradesh” funded by IDRC, Canada.
23.	Co-Investigator	“Estimating health effects of air pollutants through time series analysis in Chennai, India” funded by The Health Effects Institute, Boston, USA.
24.	Co-Investigator	“Environmental pollution, social structure, and health outcomes in India-a pilot study” in collaboration with University of Maryland, USA funded by National Institutes of Health, Bethesda USA, under a sub-contract to The National Council of Applied Economic Research, Govt. Of India.
25.	Co-Investigator	“Baseline assessment of environmental and health status of the solid waste management sector in Chennai” funded by the Central Pollution Control Board, Govt. Of India.
26.	Co-Investigator	“Integrated evaluation of indoor air pollution reduction strategies based on green-house gas emissions and health effects” funded by the United States Environmental Protection Agency.
27.	Co-Investigator	DHHS –NIH Small research grant Grant #1 R03 TW005914-01A1; PI-Howard Hu (Harvard School of Public Health) entitled “Study of Lead Exposure & Outcomes Amongst Children in Chennai, India”.
28.	Co-Investigator	“Comparative risk assessment for environmental health concerns in Manali Industrial Area funded under the Environmental Epidemiology – Preparation of National Environmental Health Profile Project of the Ministry of Environment and Forests, Government of India.
29.	Co-Investigator	” Indoor air quality monitoring in rural households of Andhra Pradesh” funded by ESMAP Unit, The World Bank, Washington D.C.
30.	Co-Investigator	“Health Risk assessment for Occupational Exposures to airborne pollutants in textile workers in Tamil Nadu” funded by the Tamil Nadu Pollution Control Board.
31.	Field Coordinator	“Indoor air quality assessment in rural Tamil Nadu” funded by the Indira Gandhi Institute for Development Research under the UNDP Cap 21 Programme.
32.	Field Coordinator	“Economic valuation of health damage in North Chennai using a comparative risk assessment framework” funded by the Indira Gandhi Institute for Development Research under the World Bank technical assistance Scheme for Capacity building in Environmental Economics.
33.	Field Coordinator	UNIDO (Vienna, Austria); grant for Occupational Environmental Monitoring in the leather Industry.
34.	Field Coordinator	Development of a model hospital waste management system at the SRU

		hospital supported by UNHCS.
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## VII. Recent Publications: (from Indexed Journal Articles, Book Chapters, Technical Manuals, conference proceedings)

### A. Indexed Journal Articles

1. Pillarisetti A, Ghorpade M, Madhv S, Dhongage A, Roy S, Balakrishnan K, Sankar S, Patil R, Levine DI, Juvekar S, Smith KR, **2019**, Promoting LPG usage during pregnancy: A pilot study in rural Maharashtra, India, *Environment International*, 127: 540-549
2. Kalpana Balakrishnan, Sagnik Dey, Tarun Gupta, R S Dhaliwal, Michael Brauer,... Sankar Sambandam..... Lalit Dandona (**2019**). The impact of air pollution on deaths, disease burden, and life expectancy across the states of India: the Global Burden of Disease Study 2017. *Lancet Planetary Health*, January 3:26-39. Doi: 10.1016/S2542-5196(18)30261-4.
3. Sanchez M, Ambros A, Milà C, Salmon M, Balakrishnan K, Sambandam S, Sreekanth V, Marshall JD, Tonne C. Development of land-use regression models for fine particles and black carbon in peri-urban South India, **2018**. *Science of the Total Environment*. 4;634: 77-86. doi: 10.1016/j.scitotenv.2018.03.308
4. Michelle Heacock\*, Brittany Trottier, Sharad Adhikary, Kwadwo Ansong Asante, Nil Basu, Marie-Noel Brune, Jack Caravanos, David Carpenter, Danielle Cazabon, Paromita Chakraborty, Aimin Chen, Fernando Diaz Barriga, Bret Ericson, Julius Fobil, Budi Haryanto, Xia Huo, T.K. Joshi, Philip Landrigan, Adeline Lopez, Frederico Magalini, Panida Navasumrit, Antonio Pascale, **Sankar Sambandam**, Upik Sitti Aslia Kamil, Leith Sly, Peter Sly, Ann Suk, Inoka Suraweera, Ridwan Tamin, Elena Vicario and William Suk. Prevention-intervention strategies to reduce exposure to e-waste. *Rev Environ Health* **2018**; 33(2): 219–228.
5. S. Rose Eilenberg, Kelsey R. Bilsback, Michael Johnson, John K. Kodros, Eric M. Lipsky, Agnes Naluwagga, Kristen M. Fedak, Megan Benka-Coker, Brooke Reynolds, Jennifer Peel, Maggie Clark, Ming Shan, **Sankar Sambandam**, Christian L'Orange, Jeffrey R. Pierce, R. Subramanian, John Volckens, Allen L. Robinson. Field measurements of solid-fuel cookstove emissions from uncontrolled cooking in China, Honduras, Uganda, and India. *Atmospheric Environment* 190 (**2018**) 116–125. Doi: 10.1016/j.atmosenv.2018.06.041
6. Kalpana Balakrishnan, Santu Ghosh, Gurusamy Thangavel, **Sankar Sambandam**, Krishnendu Mukhopadhyay, Naveen Puttaswamy, Arulselvan Sadasivam, Padmavathi Ramaswamy, Priscilla Johnson, Rajarajeswari Kuppaswamy, Durairaj Natesan, Uma Maheshwari, Amudha Natarajan, Gayathri Rajendran, Rengaraj Ramasami, Sathish Madhav, Saraswathy Manivannan, Srinivasan Nargunanadan, Srinivasan Natarajan, Sudhakar Saidam, Moumita Chakraborty, Lingeswari Balakrishnan, Vijayalakshmi Thanasekaran. Exposures to fine particulate matter (PM2.5) and birthweight in a ruralurban, mother-child cohort in Tamil Nadu, India. *Environmental Research* 2018, 161 (**2018**) 524–531. Doi: 10.1016/j.envres.2017.11.050
7. Ellison M. Carter, Christina Norris, Kathie L. Dionisio, Kalpana Balakrishnan, William Checkley, Steven N. Chillrud, Santu Ghosh, Darby W. Jack, Patrick L. Kinney, Luke P. Naeher, **Sankar Sambandam**, James J. Schauer, Blair J. Wylie, Jill Baumgartner. Assessing exposure to household air pollution from biomass burning: A systematic review of carbon monoxide as a surrogate measure of particulate matter. *Environ. Health Perspect.* **2017**, doi: 10.1289/EHP767
8. Cathryn Tonne, Maelle Salmon, Margaux Sanchez, V Sreekanth, Santhi Bhogadi, **Sankar Sambandam**, Kalpana Balakrishnan, Sanjay Kinra, Julian D. Marshall. Integrated assessment of exposure to PM2.5

- in South India and its relation with cardiovascular risk: design of the CHAI observational cohort study. *Int. J. Hyg. Environ. Health.* **2017**, doi:10.1016/j.ijheh.2017.05.005
9. Premkumar. S, Padmavathi Ramaswamy, Priscilla Johnson, Santu Ghosh, **Sankar Sambandam**, Kalpana Balakrishnan, Vijayalakshmi Thanasekaraan. A descriptive study of socioeconomic factors among nonsmoking rural female tuberculosis patients. *Sch. J. App. Med. Sci.*, **2016**; 4(12B):4307-4310. Doi: 10.2127/sjams.2016.4.12.25
  10. Kalpana Balakrishnan, Sankar **Sambandam**, Padmavathi Ramaswamy, Santu Ghosh, Verttriselvi Venkatesan, Gurusamy Thangavel, Krishnendu Mukhopadhyay, Prescilla Johnson, Solomon Paul, Naveen Puttaswamy, Rupinder S Dhaliwal, D.K.Shukla. Establishing integrated rural-urban cohorts to assess air pollution-related health effects in pregnant women, children and adults in Southern India: an overview of objectives, design and methods in the Tamil Nadu Air Pollution and Health Effects (TAPHE) study. *BMJ Open.* **2015**, doi: 10.1136/bmjopen-2015-008090.
  11. **Sankar Sambandam**, Kalpana Balakrishnan, Santu Ghosh, Arulselvan Sadasivam, Satish Madhavan, Rengaraj Siva, Maitreya Samanta, Hafeez Rehman, Veerabhadran Ramanathan. Can currently available advanced combustion biomass cook-stoves provide health relevant exposure reductions? Results from initial assessment of select commercial models in India. *EcoHealth*, March **2015**, Volume 12, Issue 1, pp 25–41. DOI: 10.1007/s10393-014-0976-1
  12. Kalpana Balakrishnan, **Sankar Sambandam**, Santu Ghosh, Krishnendu Mukhopadhyay, Mayur Vaswani, Narendra K. Arora, Darby Jack,, Ajay Pillarisetti,, Michael N. Bates, and Kirk R. Smith. Household air pollution exposures of pregnant women receiving advanced combustion cookstoves in India: Implications for intervention. *Annals of Global Health.* **2015**;81(3):375-85. doi: 10.1016/j.aogh.2015.08.009
  13. Santu Ghosh, Kalpana Balakrishnan, Krishnendu Mukhopadhyay, **Sankar Sambandam**, Naveen Puttaswamy, Moumita Chakraborty, Parthasarathi Ghosh, Manas Ranjan Ray, Dona Sinha, Saumyadipta Pyne. Addressing disease burdens attributable to ambient and household air pollution in India: A review to scope future research priorities for carcinogenicity of air toxics. *J. Indian Soc. Agri. Statistics*, **2014**, 68(3), 391-405
  14. Krishnendu Mukhopadhyay, Rengarai Ramasamy, Banani Mukhopadhyay, Santu Ghosh, **Sankar Sambandam**, Kalpana Balakrishnan. Use of Ventilation- Index in the development of Exposure model for indoor air pollution – A Review. *Open Journal of Air Pollution*, **2014**, 3, 33-41. Doi: 10.4236/ojap.2014.32004
  15. Mohsen Naghavi, Haidong Wang, Rafael Lozano, Adrian Davis, Xiaofeng Liang, Maigeng Zhou, .... (2015). Global, regional, and national age–sex specific all-cause and cause-specific mortality for 240 causes of death, 1990–2013: a systematic analysis for the Global Burden of Disease Study 2013. *The Lancet*, Jan 10;385 (9963):117-71, doi: 10.1016/S0140-6736(14)61682-2.
  16. Kalpana Balakrishnan, Santu Ghosh, Bhaswati Ganguli, **Sankar Sambandam**, Nigel Bruce, Douglas F Barnes, Kirk R Smith. State and national household concentrations of PM2.5 from solid cookfuel use: Results from measurements and modeling in India for estimation of the global burden of disease. *Environmental Health*, 2013 Sep 11;12(1):77. doi: 10.1186/1476-069X-12-77.
  17. Rupak Mukhopadhyay, Sankar **Sambandam**, Ajay Pillarisetti, Darby Jack, Krishnendu Mukhopadhyay, kalpana Balakrishnan, Mayur Vaswani, Michael N Bates, Patrick L Kinney, Narendra Arora, Kirk R Smith. Cooking practices, air quality, and the acceptability of advanced cookstoves in Haryana, India: an exploratory study to inform large-scale interventions. *Global Health Action*; 2012 Sep 5;5:1-13. doi: 10.3402/gha.v5i0.19016.

18. Kalpana Balakrishnan, Bhaswati Ganguli, Santu Ghosh, **Sankar Sambandam**, Sugata Sen Roy, Aditya Chatterjee . A spatially disaggregated time-series analysis of the short-term effects of particulate matter exposure on mortality in Chennai, India (2011). *Air Quality, Atmosphere & Health* March 2013, Volume 6, Issue 1, 111–121.
19. Kalpana Balakrishnan, Padmavathi Ramaswamy, **Sankar Sambandam**, Gurusamy Thangavel, Santu Ghosh, Priscilla Johnson, Krishnendu Mukhopadhyay, Vidhya Venugopal, and Vijayalakshmi Thanasekaraan. Air pollution from household solid fuel combustion in India: An overview of exposure and health related information to inform health research priorities. *Global Health Action*. 2011; 4: 10.3402/gha.v4i0.5638
20. Balakrishnan K, Ganguli B, Ghosh S, **Sankar S**, Thanasekaraan V, Rayudu VN, Caussy H. Part 1. Short-term effects of air pollution on mortality: Results from a time-series analysis in Chennai, India. In: Public Health and Air Pollution in Asia (PAPA): Coordinated Studies of Short-Term Exposure to Air Pollution and Daily Mortality in Two Indian Cities. *Res Rep Health Eff Inst*. 2011 Mar;(157):7-44.
21. Krishnendu Mukhopadhyay, Ayyappan Ramalingam, Ragunathan Ramani, Venkatesh Dasu, Arulselvan Sadasivam, Promod Kumar, Shyam Narayan Prasad, **Sankar Sambandam**, Kalpana Balakrishnan. Exposures to respirable particulates and silica in and around stone crushing units in Central India. *Industrial Health*: 2011; 49 (2) 221-227.
22. Padmavathi Ramaswamy, **Sankar Sambandam**, Vijayalakshmi Thanasekaraan, Kalpana. Balakrishnan. Exposure to Indoor Air Pollutants from Household Cooking and Linkages to Health. 2011. *Chest* 3: 199-200.
23. Kalpana Balakrishnan, Ayyappan Ramalingam, Venkatesan Dasu, Jeremiah Chinnadurai Stephen J C, Mohan Raj Sivaperumal, Deepan Kumarasamy, Krishnendu Mukhopadhyay, Santu Ghosh, **Sankar Sambandam**. Case studies on heat stress related perceptions in different industrial sectors in Southern India. *Global Health Action*. 2010 Nov 29;3. doi: 10.3402/gha.v3i0.5635.
24. Ramalingam, A.; **Sambandam, S.**; Paramasivan, R.; Balakrishnan, K. Work-related heat stress concerns in automotive industries: a case study from Chennai, India. *Global Health Action*. 2009; 2. doi: 10.3402/gha.v2i0.2060.
25. David C. Belliniger, Howard Hu, Kartigeyan Kalaniti, Naveen Thomas, Pradeep Rajan, **Sankar Sambandam**, Padmavathi Ramaswamy & Kalpana Balakrishnan. A pilot study of blood lead levels and neurobehavioral function in children living in Chennai, India. *Int. J. Occup. Env. Health*. 2005 11 (2): 138-143.
26. Kalpana Balakrishnan, **Sankar Sambandam**, Padmavathi Ramaswamy, Sumi Mehta, Kirk R Smith. Exposure assessment for respirable particulates associated with household fuel use in rural districts of Andhra Pradesh, India. *J Expo Anal Environ Epidemiol*. 2004;14 Suppl 1:S14-25.
27. Kalpana Balakrishnan, **Sambandam Sankar**, Jyothi Parikh, Ramaswamy Padmavathi, Kailasam Srividya, Vidhya Venugopal, Swarna Prasad, and Vijay Laxmi Pandey. Daily average exposures to respirable particulate matter from combustion of biomass fuels in rural households of southern India. *Environ Health Perspect*. 2002 Nov; 110(11): 1069–1075
28. Balakrishnan K, **Sankar S**, Padmavathi R, Mehta S, Smith KR, Respirable particulate levels in rural households of Andhra Pradesh, India - daily concentrations and exposures (2002). *J. Environ. Studies and Policy*, 5 (2): 87-97.
29. **S. Sankar**, R.Padmavathi, K.Balakrishnan, V.Thanasekaraan. Exposures to respirable particulate matter from bio-fuel combustion and pulmonary function in women of rural households in Southern India: A preliminary report. *Biomedicine*. 2002; 22:31-37

30. Padmavathi R, Balakrishnan K, Sankar S., Srividya K, Vidya R, Swarna P. Pulmonary Functions of rural South Indian Women. *Biomedicine*. 2001; 21(1):23-28

## B. Book Chapters

31. Balakrishnan, K., Ramaswamy, P., **Sankar, S.**, (2016) Biomass Smoke and Health Risks-The Situation in Developing Countries. Vol. 4. Handbook of Environmental Chemistry (pp. 219-239).
32. Kalpana Balakrishnan, **Sambandam Sankar**, Santu Ghosh, Gurusamy Thangavel, Krishnendu Mukhopadhyay, Padmavathi Ramaswamy, Priscilla Johnson, Vijayalakshmi Thanasekaraan (2014). Household Air Pollution Related to Solid Cookfuel Use: The Exposure and Health Situation in Developing Countries. Book Chapter In P. Pluschke and H. Schleibinger (eds.), *Indoor Air Pollution*, 2nd Edition, Handbook Environmental Chemistry, Springer Verlag, Berlin. doi: 10.1007/698\_2014\_260.
33. K. Balakrishnan, S Mehta, P Kumar, P Ramaswamy, **S Sambandam**, S Kumar, KR Smith (2004). Indoor air pollution associated with household fuel use in India: An exposure assessment and modeling exercise in rural districts of Andhra Pradesh, India. World Bank Report, ESMAP, June 2004. <http://wbIn0018.worldbank.org/esmap/site.nsf/files/India.pdf>.
34. K. Balakrishnan, P. Ramaswamy, **S. Sankar**. Book Chapter in the Handbook of Environmental Chemistry entitled "Biomass smoke and Health risks- the situation in developing countries", Springer Verlag, Germany. June 2004.

## C. Indexed Conference Proceedings

35. Cathryn Tonne, Margaux Sanchez, Carles Mila, V Sreekanth, **Sankar Sambandam**, Kalpana Balakrishnan, Julian Marshall Particle Exposure Assessment in Peri-Urban India: Lessons Learned from the CHAI Project. *Environ. Health Perspect.* ISEE Conference Abstracts 2018 (1), 2018. <https://ehp.niehs.nih.gov/doi/abs/10.1289/isesisee.2018.S01.02.02>
36. Kalpana Balakrishnan, Santu Ghosh, **Sankar Sambandam**, Krishnendu Mukhopadhyay, Naveen Puttaswamy, Thangavel Gurusamy; Abstract: S01.02.03. Optimizing Air Pollution Exposure Assessment Methods for Pregnant Women: Experiences from the Rural-Urban TAPHE Cohort in Tamil Nadu, India; ISES-ISEE 2018 Conference, Ottawa, Canada 26-30 August 2018, Page No. 121.
37. Vanessa Jean Burrowes, Michael Johnson, Ricardo Piedrahita, Charity Garland, Ajay Pillarisetti, **Sankar Sambandam**, Kalpana Balakrishnan, John P McCracken, Erick Mollinedo, Oscar Fernando de León, Jiawen Liao, Ghislaine Rosa, Miles A Kirby, Fiona Majorin, Kyle Steenland, Luke Naehar, Jennifer L Peel, Maggie L Clark, Tom Clasen, William Checkley. Pilot Study of the Enhanced Children's Micropem Compared to the Standard Gravimetric Methods to Measure Personal Exposure and Kitchen Concentrations to Fine Particulate Matter from Household Air Pollution: HAPIN Trial Investigators. <https://ehp.niehs.nih.gov/doi/abs/10.1289/isesisee.2018.P01.0460>
38. Naveen Puttaswamy, Sudhakar Saidam, Gayathri Rajendran, Karthikeyan Raja, Durairaj Natesan, Rengaraj Ramasami, Lingeswari Balakrishnan, Rajarajeswari Kuppaswamy, Gurusamy Thangavel, Sarada Garg, Vigneswari Aravinth, **Sankar Sambandam**, Krishnendu Mukhopadhyay, Kalpana Balakrishnan, Savannah Dawn Gupton, Erin W Williams, Cierra L Johnson, Konstantin Kartavenka, Parinya Panuwet, Sarah Rajkumar, Maggie L Clark, Jennifer L Peel, William Checkley, Tom Clasen, Dana Barr. Cross Validation of Biomonitoring Methods for Polycyclic Aromatic Hydrocarbon Metabolites in Human Urine: Results from the Pilot Phase of the HAPIN Trial in Tamil Nadu, India. .

- Environ. Health Perspect. ISEE Conference Abstracts 2018 (1), 2018. <https://ehp.niehs.nih.gov/doi/abs/10.1289/isesisee.2018.P02.3440>
39. Krishnendu Mukhopadhyay , N S Hari Krushna , Banani Mukhopadhyay , **Sankar Sambandam**; Abstract: P03.4110. Profiling Noise Induced Hearing Loss among Selected Auto-Rickshaw Drivers in Chennai City, India: A Pilot Study ISES-ISEE 2018 Conference, Ottawa, Canada 26-30 August 2018, Page No. 1958.
  40. Naveen Puttaswamy , Srinivasan Natarajan , Sudhakar Saidam , Krishnendu Mukhopadhyay , **Sankar Sambandam** , Gurusamy Thangavel , Kalpana Balakrishnan. Exposures to Volatile Organic Compounds (VOCs) among Rural and Urban Households in Southern India in Relation to Primary Cooking Fuels. <https://ehp.niehs.nih.gov/doi/abs/10.1289/isesisee.2018.P03.2070>
  41. **Sankar Sambandam**, Kalpana Balakrishnan, Thangavel Gurusamy, Durairaj Natesan, Rengaraj Ramasami, Amudha Natarajan, Saritha Sendhil, Saraswathy Manivannan, Srinivasan Nargunanathan, Sathish Madhav, Uma Maheswari, Vigneswari Aravindalochanan, Krishnendu Mukhopadhyay, Naveen Puttaswamy, Santu Ghosh, Michael Johnson, Ricardo Piedrahita, Charity Garland, Ajay Pillarisetti, Jennifer L Peel, Maggie L Clark, William Checkley, Luke Naeher, Kyle Steenland, Tom Clasen . Establishing Potential Exposure Contrasts Associated with an LPG Gas Intervention in Biomass Using Homes: Results from Pilot Phase Activities for the HAPIN Trial in Tamil Nadu. Environ. Health Perspect. ISEE Conference Abstracts 2018 (1), 2018. <https://ehp.niehs.nih.gov/doi/abs/10.1289/isesisee.2018.P02.2090>
  42. Michael Johnson , Ricardo Piedrahita , Charity Garland , Ajay Pillarisetti , **Sankar Sambandam** , Thangavel Gurusamy , Krishnendu Mukhopadhyay , Kalpana Balakrishnan , Oscar Fernando de León , Erick Mollinedo , John P McCracken , Jiawen Liao , Vanessa Jean Burrowes , Josiah Kephart , Magdalena Fandiño Del Rio , Fiona Majorin , Ghislaine Rosa , Miles A Kirby , Kyle Steenland , Luke Naeher , Joshua P Rosenthal , Jennifer L Peel , Maggie L Clark , William Checkley , Tom Clasen. Exposures to PM2.5 Associated with LPG Stove and Fuel Interventions in Four Countries: Pilot Results from the HAPIN Trial. Environ. Health Perspect. ISEE Conference Abstracts 2018 (1), 2018. <https://ehp.niehs.nih.gov/doi/abs/10.1289/isesisee.2018.O02.03.31>
  43. Kalpana Balakrishnan, **Sankar Sambandam**, Padmavathi Ramaswamy, Krishnendu Mukhopadhyay, Santu Ghosh, Guruswamy Thangavel, Priscilla Johnson, Vidya Venugopal, Vijayalakshmi Thanasekaraan (2013). Integrated rural –urban cohorts for study of air pollution related health effects in pregnant women and children in Southern India: Walking the talk. Environ. Health Perspect.; <http://dx.doi.org/10.1289/ehp.ehbase13>
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  46. Krishnendu Mukhopadhyay, Rengaraj Siva, Satish Madhav, N. Durairaj, Amudha, Gayatri, N. Arulselvan, Naveen Puttaswamy, Santu Ghosh, Guruswamy Thangavel, **Sankar Sambandam**, Kalpana Balakrishnan (2013). Measurement of household concentrations for estimating PM2.5 exposures in pregnant women: Preliminary results from the SICAPHE study. Environ. Health Perspect.; <http://dx.doi.org/10.1289/ehp.ehbase13>
  47. Kalpana Balakrishnan, Suresh Dhaniyala, Santu Ghosh, Krishnendu Mukhopadhyay, **Sankar Sambandam**, Nigel R Bruce, Kirk R. Smith (2013). Application of the WHO air quality guidelines to

- address ambient air pollution exposures in India: The need to address outdoor and household sources. *Environ. Health Perspect.*; <http://dx.doi.org/10.1289/ehp.ehbase113>
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49. **Sankar Sambandam**, Santu Ghosh, Arulselvan Sadasivam, Rengaraj Siva, Satish Madhav, Krishnendu Mukhopadhyay, Kalpana Balakrishnan, Hafeez Rehman, Veerabhadran Ramanathan (2013). Assessing household level exposure reductions associated with use of market based improved biomass cook-stoves in rural communities in India: Results from field assessments for Project Surya. *Environ. Health Perspect.*; <http://dx.doi.org/10.1289/ehp.ehbase113>
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51. Ajay Pillarisetti, **Sankar Sambandam**, Mayur Vayswani, N Arulselvam, Rengaraj Siva, Sathish Madhav, Narendra K. Arora, Kalpana Balakrishnan, Michael N. Bates, Darby Jack, Patrick L. Kinney, Krishnendu Mukhopadhyay, Rupak Mukhopadhyay, and Kirk R. Smith (2013). Evaluating the impacts of an advanced stove intervention on traditional cooking patterns and pollutant exposures in India using Stove Use Monitors. *Environ. Health Perspect.*; <http://dx.doi.org/10.1289/ehp.ehbase113>
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57. R. Ayyappan and **S. Sankar**. Identifying the areas of high particulate emission in an automotive assembly plant using GIS: Proceeding of International Commission On Occupational Health conference, March (2009).
58. Ramalingam Ayyappan, **Sambandam Sankar**, Paramasivan Rajkumar, Kalpana Balakrishnan Work-related heat stress concerns in automotive industries: a case study from Chennai, India. *Heat, Work and Health: Implications of Climate Change, Global Health Action, Special Volume* 2009

59. K. Balakrishnan, M. Suriyanarayanan, R. Ayyappan, **S. Sankar**, M. Zareen. Application of chemical risk management (control-banding) toolkit in southern India. Lessons learnt and the way of forward: Proceeding of XVIII World Congress on Safety and Health at Work, June 29-July 2 (2008).
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66. **S. Sankar**, R. Padmavathi, K. Balakrishnan - Exposure assessment for indoor air pollution associated with household fuel use in rural districts of southern India – Results of monitoring exercises in Tamil Nadu and Andhra Pradesh, Better Air Quality, Agra, India, December 6-8, 2004
67. **S. Sankar** et al., Job –Hazard - Exposure Profiles for small-scale manufacturing industries in Southern India, Indian Association of Occupational Health, Tamil Nadu Chapter, Annual conference, Chennai, August 2003
68. Padmavathi, R; **Sankar, S**; Balakrishnan, K; Thanasekaran, V(2002). Pulmonary function of rural women of Tamilnadu, India - Links to exposures from bio-fuel combustion EPIDEMIOLOGY, 13 (4): 140 .
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71. **Sambandam Sankar**, Ramaswamy Padmavathi, Pradeep Rajan, Ramalingam Ayyappan, Joerg Arnold, Kalpana Balakrishnan. Job-exposure-health profile for workers exposed to respirable dusts in textile units of Tamilnadu, India: results of preliminary investigations. 12th conference of the International Society of Exposure Analysis and 14th conference of the International Society for Environmental Epidemiology (ISEA – ISEE 2002), Vancouver, Canada, August 11-15, 2002
72. **Sankar, S**; Padmavathi, R; Rajan, P; Ayyappan, R; Arnold, J; Balakrishnan, K (2002). Job-exposure-health profile for workers exposed to respirable dusts in textile units of Tamilnadu, India: Results of preliminary investigations EPIDEMIOLOGY, 13 (4): 846.

73. **Sankar. S.** et al., Job-Exposure-Health profile for workers in textile units of Tamilnadu, India: A preliminary report, Golden Jubilee Conference on Occupational Health & 50th Annual Convention, Indian Association of Occupational Health, Mumbai Branch, Mumbai April 19-21, 2002
74. **Sankar.S** et al., Indoor Air Quality Monitoring In Rural Households of Tamil Nadu, India. International Conference On Environmental And Occupational Respiratory Diseases, 29 October – 2 November, 2000
75. **Sankar. S** et al., Cytogenetic Biomarkers for Occupational Exposure to Genotoxicants in Southern India. In: Environmental Mutagenesis Society of India conference: Challenges in the New Millennium, M. S. Swaminathan Research Foundation, Chennai, March 2000.

#### **D. Technical Manuals**

76. “Health, Safety and Environmental aspects of Alternative Solvents to Carbon Tetrachloride”, Part I, **Sankar Sambandam**, Krishnendu Mukhopadhyay, Ayyappan Ramalingam, Chittaruvikkal John Mathew, Sona Mahajan and Kalpana Balakrishnan, Under National CTC Phase-out Plan, Jointly published by the Department of Environmental Health Engineering, Sri Ramachandra University, Chennai, India and the Deutsche Gesellschaft Fur Technische Zusammenarbeit (GTZ) GmbH (German Technical Cooperation, GTZ-Proklima, New Delhi on behalf of Federal Ministry for Economic Cooperation and Development, Govt. of Germany, Fonds Francais pour l’Environnement Mondial (FFEM), Govt. of France and Ministry of Environment & Forests, Govt. of India, launched on 19th February 2010 at Radisson Hotel GRT, Chennai.
77. “Guidance on Control of Exposures Related to Use of Carbon Tetrachloride Solvent Substitutes in the Oxygen Manufacturing and Refilling Sector”, Part II, **Sankar Sambandam**, Krishnendu Mukhopadhyay, Ayyappan Ramalingam, Chittaruvikkal John Mathew, Sona Mahajan and Kalpana Balakrishnan, Under National CTC Phase-out Plan.
78. “Guidance on Control of Exposures Related to Use of Carbon Tetrachloride Solvent Substitutes in the Refrigeration and Air Conditioning (RAC) Sector”, Part II, **Sankar Sambandam**, Krishnendu Mukhopadhyay, Ayyappan Ramalingam, Chittaruvikkal John Mathew, Sona Mahajan and Kalpana Balakrishnan, Under National CTC Phase-out Plan.
79. “Guidance on Control of Exposures Related to Use of Carbon Tetrachloride Solvent Substitutes in the Textile Sector”, Part II, **Sankar Sambandam**, Krishnendu Mukhopadhyay, Ayyappan Ramalingam, Chittaruvikkal John Mathew, Sona Mahajan and Kalpana Balakrishnan, Under National CTC Phase-out Plan.
80. “Guidance on Control of Exposures Related to Use of Carbon Tetrachloride Solvent Substitutes in the Offset Printing Sector”, Part II, **Sankar Sambandam**, Krishnendu Mukhopadhyay, Ayyappan Ramalingam, Chittaruvikkal John Mathew, Sona Mahajan and Kalpana Balakrishnan, Under National CTC Phase-out Plan.
81. “Guidance on Control of Exposures Related to Use of Carbon Tetrachloride Solvent Substitutes in Metal Degreasing Applications”, Part II, **Sankar Sambandam**, Krishnendu Mukhopadhyay, Ayyappan Ramalingam, Chittaruvikkal John Mathew, Sona Mahajan and Kalpana Balakrishnan, Under National CTC Phase-out Plan.
82. “Guidance on Control of Exposures Related to Use of Carbon Tetrachloride Solvent Substitutes in the Foundry Sector”, Part II, **Sankar Sambandam**, Krishnendu Mukhopadhyay, Ayyappan Ramalingam, Chittaruvikkal John Mathew, Sona Mahajan and Kalpana Balakrishnan, Under National CTC Phase-out Plan.

83. "Guidance on Control of Exposures Related to Use of Carbon Tetrachloride Solvent Substitutes in Industrial Jewelry Casting", Part II, **Sankar Sambandam**, Krishnendu Mukhopadhyay, Ayyappan Ramalingam, Chittaruvikkal John Mathew, Sona Mahajan and Kalpana Balakrishnan, Under National CTC Phase-out Plan.
84. "Guidance on Control of Exposures Related to Use of Carbon Tetrachloride Solvent Substitutes in Industrial Electrical Contact Cleaning Applications", Part II, **Sankar Sambandam**, Krishnendu Mukhopadhyay, Ayyappan Ramalingam, Chittaruvikkal John Mathew, Sona Mahajan and Kalpana Balakrishnan, Under National CTC Phase-out Plan.
85. K Balakrishnan, S Sankar, Ayyappan Ramalingam Technical training manual on control banding and application in industries, 2005 Prepared in collaboration with ILO and GTZ.
86. K Balakrishnan , Sankar Sambandam, G. Swaminathan. Technical training manual on Applied Chemical Safety Prepared in collaboration with Tamilnadu Petroproducts
87. K Balakrishnan , S Sankar, Ayyappan Ramalingam Guidelines on OSHAS 18001/ILO OSH Management Systems Prepared in collaboration with National University of Malaysia and National Safety Council, TamilNadu Chapter.

#### **VIII. Training programs/workshop attended**

88. South East Asia Regional Train The Trainers workshop on Occupational Safety and Health in Tanneries and Effluent Treatment Plant. Organised by UNIDO, April 1998
89. Risk Assessment, Organised by Sri Ramachandra Medical College & Research Institute and USEPA, April 1998.
90. Operation and Management of Environmental Testing Laboratory Organised by ETI, TNPCB, July 1998.
91. Biomedical waste Management Organised by Environmental Training Institute and Tamil Nadu Pollution Control Board, October 1998.
92. Technical Training Workshop in Industrial Hygiene Measurements, Organised by SRMC & RI and John's Hopkins University, March 1999.
93. Occupational & Environmental Health Organised by PRIA, December 1999.
94. Environmental Epidemiology Organised by Environmental Training Institute and Tamil Nadu Pollution Control Board, February 2000.
95. Hazard Recognition and Prevention In The Work Place – Air Borne Dusts, Organised by SRMC & RI, Inspectorate of factories, Govt. of Tamil Nadu, The National Safety Council of India (Tamil Nadu chapter), The Hindu, Chennai, September 2000.
96. Metals Pollution & Toxicity: Addressing a major threat to occupational and Environmental Health, March 2001.
97. Regional Workshop on Household Energy, Indoor Air Pollution and Health, New Delhi, Organised by TERI and World Bank, New Delhi, May 9-10, 2002.
98. Training in the field of Exposure assessment, Toxicology and Molecular Epidemiology at University of California, Berkeley, U.S.A School of Public Health between 27.07.2002 to 20.12.2002.
99. Environmental and Occupational Epidemiology Workshop, organized by Fogarty International Research and Training Program, New Delhi, December 1st – 12th, 2003.
100. Indoor Air Pollution Monitoring Training conducted by Shell Foundation U.S.A, HEH Projects, Pune, April 31-May1 2004.
101. Regional workshop on "Developing Clean Development Mechanism Projects in India", Conducted

- by Confederation of Indian Industry, Resources Futures International and The Energy Research Institute, with support from Canada's Clean Development Mechanism and Joint Implementation Office, May 7th, 2004.
102. Data Analysis Training Workshop for Indian Investigators to use "R" for Time-Series analysis, conducted at Sri Ramachandra Medical College and Research Institute, Chennai, organized by Health Effects Institute, Boston, USA.
  103. Train the Trainers on Chemical Management (Module 1, Hot Spot Identification), under the European Union project, conducted at Sri Ramachandra Medical College and Research Institute, Chennai, organized by GTZ, July 10 – 14, 2006.
  104. Data Analysis Training Workshop for Indian Investigators to use "STATA Version 9" for project Exposure to biomass fuel smoke and tuberculosis –A case-control study based in a rural district of Tamil Nadu in Southern India, August 14 – 18, 2006.
  105. Train the Trainers on Chemical Management (Module 2, Chemical Inventory), under the European Union project, conducted at Sri Ramachandra Medical College and Research Institute, Chennai, organized by GTZ, October 10 - 13, 2006.
  106. Application and Validation of Biomarker Techniques-1, under the European Union project, conducted at Sri Ramachandra Medical College and Research Institute, Chennai, organized by GTZ, October 25 - 27, 2006.
  107. Gold Standard Health Impact Assessment Methodology (ADALYS) Training workshop conducted at Sri Ramachandra University in collaboration with Gold Standard Foundation, The World Bank, ESMAP, 25-26 May, 2017.
  108. Household Air Pollution Intervention Network (HAPIN), 2<sup>rd</sup> Annual Meeting, September 11<sup>th</sup> – 15<sup>th</sup> 2017, Atlanta, USA
  109. Household Air Pollution Intervention Network (HAPIN), 3<sup>rd</sup> Annual Meeting, October 23<sup>rd</sup> – 25<sup>th</sup> 2018, Atlanta, USA
  110. Participated in Clarkson-SRU-ICMR Indo-US Knowledge Initiative Project Training Workshop, "Air pollution, climate change and human health in India: Interlinked challenges", Sri Ramachandra Institute of Higher Education and Research (DU), January 8<sup>th</sup> -10<sup>th</sup>, 2019

#### **IX. Workshop/Training Programs Organized / Conducted**

**Involved in organization of over 50 technical training workshops**, in the field of occupational safety & health, epidemiology and exposure assessment, conducted in collaboration with governmental/nongovernmental, national/international Universities and organizations.

#### **X. M.Sc. Project**

1. Neurotoxicity studies of an organo phosphate pesticide, Monocrotophos in the edible fish *Tilapia mossambica*.
2. Studies on "Automobile Air pollution" in Coimbatore city for a period of three months

#### **XI. Awards and Honors**

1. **Gold medal** for 20 years of service at Sri Ramachandra University 2019
2. Best Research Paper award, Sri Ramachandra Institute of Higher Education and Research (DU), 2018.
3. **Guest of Honor**, 16th Anniversary Celebration, Safety Engineers Association, Chennai, June 2017.

4. Research Ambassador of Sri Ramachandra Medical College & Research Institute (DU), April 2017.
5. Best Research Paper award, Sri Ramachandra Medical College & Research Institute (DU), 2016.
6. **Gold medal** for 10 years of service at Sri Ramachandra University 2011
7. **2005-Visited University of California**, Berkeley at School of Public Health, as **Visiting Scholar** hosted by Department of Environmental Health Sciences for training in the field of Environmental Epidemiology, and Industrial hygiene from 18.01.2005 to 14.06.2005.
8. **2002-Visited University of California**, Berkeley at School of Public Health, as **Visiting Scholar** hosted by Department of Environmental Health Sciences for training in the field of Toxicology, Exposure Assessment and Molecular Epidemiology, from 27.07.2002 to 20.12.2002.
9. **2002- Best presentation award:** Job-Exposure-Health profile for workers in textile units of Tamil Nadu, India: A preliminary report, Golden Jubilee Conference on Occupational Health & 50th Annual Convention, Indian Association of Occupational Health, Mumbai Branch, Mumbai April 19-21, 2002.
10. **2000- Best presentation award:** Indoor Air Quality Monitoring In Rural Households of Tamil Nadu, India. International Conference on Environmental And Occupational Respiratory Diseases, 29 Oct – 2Nov, 2000.

## XII. Special Assignments

1. **Member**, Inspection team, State Expert Appraisal Committee, Tamil Nadu, 09.02.2019
2. **Member**, Inspection team, State Expert Appraisal Committee, Tamil Nadu, 25.01.2019
3. **Member**, State Expert Appraisal Committee, Department of Environment, Govt. of Tamil Nadu (2018)
4. **Special Invitee**, Indo-US Programme on Environmental and Occupational Health, ICMR Hqrs, New Delhi, June 2018
5. **Expert member**, Evaluation of Effluent water to recommend on re categorization, Tamil Nadu Rice mill Owners & Paddy Rice Dealers Association, TNPCB- Chennai, July 2017.
6. **Panelist**, Roundtable discussion on Strategies to address health impacts of Air pollution, World Health Organization, New Delhi, June 2017
7. **Member** in a meeting on Oil Spill Compensation at Chepauk organized by Tamil Nadu State Disaster Management Agency, February 2017.
8. **Resource person** for Training program on Household Air Pollution (HAP) and Monitoring, Horn of Africa Regional Environmental Centre and Network, Addis Ababa University, Ethiopia.
9. **Member**, Accident investigation committee, Shasun Chemicals and Pharmaceuticals, Kudikadu, nominated by Tamil Nadu Pollution Control Board, December 2015
10. **Invitee** to Dental School and Hospital, University of Dundee, Scotland, June 2015
11. **Invitee** at interactive session on “Air Quality & Health Issues”, Tamil Nadu Pollution Control Board, November 2015
12. **Member**, Accident investigation committee, JSW Steel Limited, Salem, nominated by Tamil Nadu Pollution Control Board, September 2015
13. **Invitee** to Round table panel discussion on “Climate Change”, U.S. Consul General Phillip Min, Chennai, September 2015
14. **Participated and contributed** at 3<sup>rd</sup> meeting of the Global Alliance to Eliminate Lead Paint (GAELP), WHO, New Delhi, September 2014.
15. **Served as International trainer** for “Basic Occupational Health Services” at Maldives, 14th to 15th September 2011.
16. **Served as an international trainer** for the German Technical Cooperation – “Chemical Management” held at, India and Vietnam.
17. **Served as temporary advisor** to World Health Organization, SEARO, for the “Inter-Regional Training Workshop on Indoor Air Pollution and Household Energy Monitoring”, held at Colombo, Sri Lanka, from 22<sup>nd</sup> to 26<sup>th</sup> May 2006.
18. **Served as expert** to contribute in several national consultation meetings and committees organized by Ministry of New and Renewable Energy; Ministry of Health and Ministry of Earth Sciences of Government of India, WHO, UNICEF.

## XIII. Meetings

1. Special Invitee at Joint Working Group on Environmental and Occupational Health and Injury Prevention and Control held on 22nd June 2018 at Indian Council of Medical Research Headquarters, New Delhi.
2. Participated in “State Action Plan on Climate Change and Human Health”, National Health Mission, Tamil Nadu, Chennai, 16 August, 2018
3. Participated in South –East Asia Regional Meeting on Air Quality and Health in Bangkok, Thailand, 18-20 June 2018

4. Participated in the Indo-US workshop to Explore Bilateral Research Opportunities to Address air Quality and Health Issues, National Institute of Environmental Health Sciences, November 2016
5. Participated in Prevention/Intervention Strategies to reduce E-waste Exposures workshop, The 16th International Conference of the Pacific Basin Consortium, University of Indonesia, City of Depok, West Java, August 2015
6. Participated in Regional Workshop on Air Quality and Human Health, New Delhi, December 2014.

#### **XIV. Invited/Guest Lectures**

1. Invited talk on “Air Pollution and Health Effects”, Tamil Nadu Pollution Control Board, Chennai, 12<sup>th</sup> January 2019
2. Invited talk on “Biomedical Waste Management”, Madras Chamber of Commerce and Industries, Chennai, 9<sup>th</sup> November 2018.
3. Invited Talk “Exposure Assessment Strategies for Air Pollution Studies: Results from TAPHE Study” in Methods in Epidemiologic, Clinical and Operations Research, American Thoracic Society, Bengaluru, January 2018
4. Invited Lecture and Co-Chair in Prevention and Intervention Strategies to reduce exposure to E-waste workshop Program, Public health Foundation of India, New Delhi, November 2017.
5. Invited talk in Pulmocon 2017 15th All India update in pulmonary Medicine, Institute of Pulmocare & Research, Kolkata, August 2017.
6. Resource person for conducting ADLAYS Methodology capacity building workshop, Bangkok, Thailand, July 2017.
7. Resource person on one day seminar Biomedical Waste Management – 2016 Guidelines , The Tamilnadu Dr.MGR Medical University, Chennai, June 2017.
8. Presented at NIOH meeting on Prevention and Management of Lead poisoning, WHO , Ahmadabad, June 2017.
9. Organized a ADALY regional Workshop on “Averted Disability Adjusted Life years (ADALYs) Methodology” at Sri Ramachandra Medical College & Research institute, Porur, May 2017.
10. Resource person in Research Colloquium on Recent Advances in Mechanical Engineering, College of Engineering Adoor, Kerala, March 2017.
11. Invited talk, One day Training program on Implementation of E-waste (Management) Rules, 2016, Tamil Nadu Pollution Control Board, March 2017.
12. Resource person / Faculty for the course Associate Fellow of Industrial Health, Delivered Lecture on Sri Ramachandra Medical College and Research Institute centre, January 2017.
13. Invited Lecture in Regional at Regional Conference on Environment, National Green Tribunal, Chennai, October 2016
14. Invited Lecture, National Workshop on “Urban Disasters – Nature’s Fury or Human Negligence, B.S.Abdur Rahman University, Chennai, October 2016
15. Invited as a Expert to conduct training and field assessment of Priority Carcinogenic Chemicals in selected industries in Pasakha and Phuntsholing, Royal Government of Bhutan,Paro, August 2016.
16. Invited Talk, State level CME on Measurement of Air Quality and its impact on Respiratory Health, Sri Devaraj URS Medical College, Kolar, August 2016.
17. Presented in sensitization workshop to Traffic Police on Health risks, NRDC, Ahmedabad, March 2016.
18. Invited Talk ,FDTP on Chemical Process plant Safety , Anna University , Chennai, June 2016.

19. CO- Chair, International Symposium on Impact of chemical Exposures on Health and Environmental , New Delhi, December 2015
20. Invited talk, Emerging Trends and Understanding Best Practices, Madras Chamber of Committee & Industry, Chennai, December 2014.
21. Presented in One Day Stockholders Meet on Need Analysis Study For “Safety In Automobile Industries”, Regional Laour Institute, January 2105.
22. Invited Lecture, Toxicology, and Exposure Assessment, Regional Labour Institute, Chennai, October 2014.

#### **XV. Professional Memberships**

1. 2002-present                      National Safety Council, India
2. 2000-present                      Environmental Mutagenesis Society of India
3. 1998-present                      Indian Association of Occupational Health
4. 2018-presest                      International Society of Exposure Science