

**WINTER SCHOOL
ON
REAL-TIME URBAN AIR POLLUTION AND PERSONAL EXPOSURE MONITORING
16 & 17 December 2019**

**4th INDIAN INTERNATIONAL CONFERENCE ON AIR QUALITY MANAGEMENT
IICAQM-2019
MEASUREMENT, MODELLING, HEALTH RISK AND PUBLIC POLICY
18 - 20 December 2019**

**&
WORKSHOP
ON
INDOOR AIR QUALITY AND HEALTH EFFECTS**

20th December 2019

VMCC, IIT Bombay, Powai, Mumbai 400076



in association with



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**WINTER SCHOOL
ON
REAL TIME URBAN AIR POLLUTION AND PERSONAL EXPOSURE MONITORING**

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| Monday, 16th December 2019 | | Venue: VMCC, IIT Bombay |
| Module 1 : Basics of Air Pollution, Monitoring Methods and Health Impacts | | |
| 08:30-09:30 | Registration | |
| 09:30-10:00 | Inauguration | |
| 10:00-10:30 | Tea/Coffee Break | |
| 10:30-11:00 | Introduction of the Participants | |
| 11:00-12:00 | <i>Urban air quality phenomena-Part I</i> | Uwe Schlink, UFZ, Germany |
| 12:00-13:00 | <i>Urban and local air quality management</i> | Shiva Nagendra SM, IIT Madras, Chennai |
| 13:00-14:00 | Lunch Break | |
| 14:00-15:00 | <i>National Clean Air Programme – Present Efforts</i> | Virendra Sethi, IIT Bombay, Mumbai |
| 15:00-16:00 | <i>Methods of air pollution monitoring for health impacts</i> | Shiva Nagendra, IIT Madras, Chennai |
| 16:00-16:15 | Tea/Coffee Break | |
| 16:15-17:15 | <i>Urban micro-meteorological concepts</i> | Uwe Schlink, UFZ, Germany |
| 17:15-18:15 | <i>Urban micro-meteorological concepts-Exercise</i> | Uwe Schlink, UFZ, Germany |
| 18.15-19.00 | <i>Overview of research activities in Civil Engineering Department, IIT Madras and ESED, IIT Bombay</i> | |

Module 2: Novel Methods for Personal Exposure Monitoring & Modelling

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| 09:00-10:00 | <i>Urban air quality phenomena-Part II</i> | Uwe Schlink, UFZ, Germany |
| 10:00-11:00 | <i>Novel approach for urban air quality management</i> | Shiva Nagendra SM, IIT Madras, Chennai |
| 11:00-11:15 | Tea/Coffee Break | |
| 11:15-12:15 | <i>Methods of monitoring particulate pollutants</i> | Manoranjan Sahu and Abhishek Chakraborty , IIT Bombay, Mumbai |
| 12:15-13:15 | <i>Urban and Local scale modelling using ENVI-met</i> | Uwe Schlink, UFZ, Germany |
| 13:15-14:15 | Lunch Break | |
| 14:15-15:15 | <i>Urban and Local scale modelling using ENVI-met-Exercise</i> | Uwe Schlink, UFZ, Germany |
| 15:15-16:15 | <i>Demonstration of air quality monitoring instruments</i> | Envirotech Instruments Pvt. Ltd., New Delhi |
| 16:15-16:30 | Tea/Coffee Break | |
| 16:30-17:30 | <i>Air pollution and climate change</i> | Uwe Schlink, UFZ, Germany, and Shiva Nagendra SM, IIT Madras, Chennai |

4th INDIAN INTERNATIONAL CONFERENCE ON AIR QUALITY MANAGEMENT
IICAQM-2019
MEASUREMENT, MODELLING, HEALTH RISK AND PUBLIC POLICY

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|---|---|---|-------------------------|
| Wednesday, 18 th December 2019 | | DAY 1 of 3 | Venue: VMCC, IIT Bombay |
| 08:30-09:15 | Registration | | |
| 09:30-10:00 | INAUGURATION | | |
| | Invited Talks Chair: Prof. Ajay Deshpande, IIT Bombay | | |
| 10:00-10:30 | <i>Status of Air Quality Improvement in India with special reference to Implication of NGT orders</i> | Dr. B. Sengupta, Former Member Secretary, CPCB, New Delhi | |
| 10:30-11:00 | <i>Low Cost PM Sensors: Data Analytics to Enhance Spatio-Temporal Resolution</i> | Prof. Pratim Biswas, Washington University in St. Louis | |
| 11:00-11:30 | Felicitation “Air Quality Research Life Time Achievement Award” | | |
| 11:30-12:00 | Tea/Coffee Break | | |
| 12:00-13:15 | Technical Session I: Air quality measurements and characterization Chair: Prof. Harish Phuleria, IIT Bombay | | |
| 12:00-12:15 | <i>Estimating the methane emissions from manure lagoons using Eulerian and Lagrangian models</i> | Ranga Rajan Thiruvengkatachari - University of California, Riverside, USA | |
| 12:15-12:30 | <i>Chemical characteristics and sources of aerosols over Himalayan region of India</i> | N. Choudhary - CSIR-National Physical Laboratory, New Delhi | |
| 12:30-12:45 | <i>Developing methodology to identify factors influencing the formation of ground-level ozone, a case study of Pune India</i> | Sagar A. Marathe, Shankar Murthy, Nachiket Gosawi, National Institute of Industrial Engineering (NITIE), Mumbai | |
| 12:45-13:00 | <i>Seasonal variation and cwt analysis of carbonaceous species in pm10 over eastern Himalayan region of India</i> | Akansha Rai, CSIR-National Physical Laboratory, New Delhi | |
| 13:00-14:00 | Lunch Break | | |

| | Invited Talks Chair: : Prof. Kuruvilla John, University of North Texas, USA | |
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| 14:00-14:30 | <i>Characterization of pollutants and selection of practicable options for source apportionment in Indian non-attainment cities</i> | Abhijit Pathak, Central Pollution Control Board (CPCB), New Delhi |
| 14:30-15:00 | <i>Wearable sensors for multifactorial personal exposure assessment</i> | Uwe Schlink, UFZ, Germany |
| 15:00-15:30 | <i>Environment governance initiatives required for effective implementation of NCAP</i> | Ajay Deshpande, IIT Bombay, Mumbai |
| 15:30-16:00 | Poster Presentation Session 1 : Elevator Pitch Prof. Pratim Biswas, Washington University in St. Louis | |
| 16:00-16:15 | Tea/Coffee Break | |
| | Technical Session II: Source Apportionment and Impact Assessment Chair: Prof. Anil K. Dikshit, IIT Bombay | |
| 16:15-16:30 | <i>Air pollution over Indo Gangetic Plain and its mitigation strategies</i> | Ravindra Khaiwal, PGIMER, Chandigarh |
| 16:30-16:45 | <i>Particulate matter source apportionment – critical review for Indian scenario</i> | Nihalani S. A. - SVNIT, Surat |
| 16:45-17:00 | <i>A short-term exposure study on inhalable outdoor airborne particulate matter in a small city (Tezpur) of mid Brahmaputra Valley</i> | Jayanta Bora – Tezpur University, Tezpur |
| 17:00-17:15 | <i>Exposure of fine particulate matter concentration and its inhalation dosage in different urban environments</i> | Monish Raj M, Vellore Institute of Technology, Vellore |
| 17:15-17:30 | Industry Sponsor Presentations | Anupam Rasayan India Ltd., Gujarat |
| 17:30-17:45 | | Envirotech Instruments Pvt. Ltd., New Delhi |
| 17:45-18:00 | | Envitran Smart Systems Pvt Ltd, IIT Madras Research Park, Chennai |

| Thursday, 19th December 2019 | | DAY 2 of 3 | Venue: VMCC IIT Bombay |
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| | Invited Talks Chair: Prof. Shiva Nagendra SM, IIT Madras | | |
| 09:30-10:00 | <i>Air Quality Trends and Assessment of the Impact of Mitigation Strategies: An Overview of Machine Learning Applications</i> | Kuruvilla John, University of North Texas, USA | |
| 10:00-10:30 | <i>Dynamic Source Apportionment for improvement in Air Quality</i> | Sachchida Nand Tripathi, IIT Kanpur, Kanpur | |
| 10.30-11.00 | <i>Carbonaceous Aerosols: An Indian Perspective</i> | Chandra Venkataraman, IIT Bombay, Mumbai | |
| 11:00-11:30 | Tea/Coffee Break Posters | | |
| | Technical Session III: Air Quality Modelling Chair: Dr. Richard Ball, University of Bath, UK | | |
| 11:30-11:45 | <i>SENSurAIR for Urban and Local Air Quality Management</i> | Shiva Nagendra SM, IIT Madras, Chennai | |
| 11:45-12:00 | <i>Modelling Analysis of Particulate Matter and Ozone Source Apportionment in the United States Using CAMx Model</i> | Krish Vijayaraghavan, Ramboll, USA | |
| 12:00-12:15 | <i>Sources and source regions of PM10 carbonaceous species over NCR of Delhi</i> | Rubiya Banoo, CSIR-National Physical Laboratory, New Delhi | |
| 12:15-12:30 | <i>Urban transport policies as instruments to control private vehicle usage and air pollution in cities</i> | Suresh Jain, IIT Tirupati | |
| 12:30-12.45 | <i>Effect of Local and Global Meteorology on PM2.5: a case study</i> | Rulan Verma, IIT Delhi, New Delhi | |
| 12:45-1:00 | <i>Air Quality Modelling and Evaluation of Control Scenarios for an Urban Freeway</i> | Awkash Kumar, Rashmi S Patil, Anil Kumar Dikshit, IIT Bombay, Mumbai | |
| 13:00-14:00 | Lunch Break | | |
| 14:00-15:00 | Invited Talks Chair: Prof. Uwe Schlink, UFZ, Germany | | |
| 14:00-14:30 | <i>Public Health Aspects of Air Pollution</i> | A. Chitra, Madras Medical College, Chennai | |
| 14:30-15:00 | <i>Work environment condition in the textile dyeing and printing processing units in Surat</i> | Robin Christian, S.V. National Institute of Technology, Surat | |

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| | Technical Session IV: Indoor Air Quality-Measurement, Modelling and Control Chair: Dr. Richard Ball, UoB and Dr. Robin Christian, SVNIT | |
| 15:00-15:15 | <i>Sustainable remedy of indoor air pollution control by plants</i> | Hemina Z. Patel -GIDC Degree Engineering College, Gujarat |
| 15:15-15:30 | <i>Significance of Mold Awareness for Air Quality Management</i> | T. Dubey, TBON LAB LLC, USA |
| 15:30- 16:00 | <i>Assessment of particulate matter and bioaerosol concentration in indoor environment of an educational institution</i> | Sindhu P – College of Engineering Trivandrum, Thiruvananthapuram |
| 16:00-16:30 | Tea/Coffee Break Posters | |
| 16:30 - 16:45 | <i>Composite photocatalyst coated fabric for indoor air purification: insights from experimental study</i> | Lekshmi Mohan, IIT Madras, Chennai |
| 16:45 – 17:00 | <i>Processed Fuel for Domestic Cooking</i> | Virendra Sethi, IIT Bombay, Mumbai |

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| Friday, 20 th December 2019 | | DAY 3 of 3 | Venue: VMCC, IIT Bombay |
|--|--|--|-------------------------|
| | Invited Talks Chair: Prof Mukesh Khare, IIT Delhi | | |
| 09:30-10:00 | <i>Indoor Air Pollution in India – an Overview</i> | Dr. Rakesh Kumar, Director, NEERI, Nagpur | |
| 10:00-10:30 | <i>ECOSEE Project Overview and Bio-based Eco-friendly building Materials in India</i> | Prof. Mukesh Khare, IIT Delhi, New Delhi | |
| 10:30-11:00 | <i>Bio-based Ecofriendly Materials and Indoor Air Quality (IAQ)- Experiences from ECOSEE</i> | Dr. Richard Ball, University of Bath, UK | |
| 11:00-11:15 | Tea/Coffee Break | | |
| 11:15-13:00 | Technical Session V: ECO-innovative, Safe and Energy Efficient wall panels and materials for a healthier indoor environment (ECO-SEE) Chair: Prof. Mukesh Khare, IIT Delhi and Dr. Richard Ball, University of Bath | | |
| 11:15-11:30 | <i>Estimation for Adsorption and Desorption Properties for Air pollutants released from Indoor Materials: A Case study of ECO-SEE Project</i> | Sunil Gulia, NEERI Zonal Centre, Delhi | |
| 11:30-11:45 | <i>Computational Modeling of Adsorption and Desorption of Air pollutants from Indoor Materials: A Case Study of ECO-SEE Project</i> | Sumanth Chinthala, NIT Warangal, Warangal | |
| 11:45-12:00 | <i>ECO-SEE Building Materials – Coatings to improve air quality</i> | Dr. Richard Ball, University of Bath, UK | |
| 12:00-12:15 | <i>Indoor Air Quality Standards: International and Indian Perspective</i> | Prasad Modak, Ekonnnect Knowledge Foundation, Mumbai | |
| 12:15-12:30 | <i>Industrial Perspective for Eco-Friendly Building Materials</i> | Expert from Construction Industry | |
| 12:30-12:45 | <i>Indoor Air Quality – Architectural Perspective</i> | Dr. Poorva Kesar, VKe environmental, Pune | |
| 12.45-13.00 | Question – Answer Session | | |
| 13:00-14:00 | Lunch Break | | |

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| | Invited Talks Chair: : Dr. Rakesh Kumar, NEERI | |
| 14:00-14:30 | <i>Urban Air pollution in India: Current Scenario, strategic policies & Interventions</i> | Mukesh Khare, IIT Delhi, New Delhi |
| 14:30-15:00 | <i>Data Rich? Or Data Poor? - The saga of India's Air Quality Monitoring</i> | Prasad Modak, Ekonnnect Knowledge Foundation, Mumbai |
| 15:00-15:15 | <i>Air Pollution Control initiatives by NEERI</i> | K.V. George, NEERI, Nagpur |
| 15.15-15.30 | <i>Effects of Environmental Chemical Pollutants on RNA Conformation and function</i> | K Krishnamurthy, NEERI, Nagpur |
| 15:30-15:45 | Tea/Coffee Break | |
| 15:45-16:45 | <i>Panel Discussion: Affordable Sensors for Urban Air Quality Management</i> Chair: Prof. Mukesh Khare, IIT Delhi and Shri S K Gupta, Envirotech Instruments Pvt. Ltd. | |
| 16:45-17:30 | Valedictory, Prize Distribution and High Tea/Coffee Break | |
| | Saturday, 21st December 2019 Post-Conference Tour (on payment basis) | |