DST-UKIERI workshop
Emerging sensor technologies and data analytics
for air quality monitoring
November 1, 2018
IIT Delhi, New Delhi, India

Objectives: This workshop brings together state-of-the-art international perspectives on emerging sensor technologies and data analytics for air quality monitoring. The availability of portable, low-cost and reliable monitoring technologies for air quality is of considerable interest as several studies have established that the established guidelines for air quality continue to be violated in major urban areas throughout the world despite policy changes to regulate the underlying sources. Further, while there is a vast amount of clinical evidence that establishes the link between public health and air quality, and the OECD estimates that by 2050, it may become the largest cause of premature mortality in the world, even surpassing drinking water scarcity and lack of sanitation. This workshop will cover a variety of topics relevant to current cutting-edge research in sensor technologies and ongoing studies involving the impact of air quality on human health and the environment, with a view towards bridging the gap towards providing personalized, accessible and reliable data for the average citizen.

Organisers: Prof. Ashwin Seshia (Cambridge University), Prof. Maryam Shojaei Baghini (IIT Bombay), Prof. Madhusudan Singh (IIT Delhi).

Registration: All interested attendees should register in advance through the dedicated workshop website http://ieee-sensors2018.org/pages/dst-ukieri-workshop. Registration fees are Rs 1000 for local participants and $50 for international participants. Discounted student accommodation is also available on the IIT Delhi Sonipat campus for students requiring overnight accommodation. For further information, including links to accommodation booking, please visit the workshop website.

Venue: The workshop will be held in the main seminar hall on the IIT Delhi campus.

About IIT Delhi: The Indian Institute of Technology (IIT) Delhi is a premier institution of national importance established in 1961 through an Act of the Indian Parliament for fostering excellence in education. Over the years, IITs have created world class educational platforms dynamically sustained through internationally recognized research based on excellent infrastructural facilities. The faculty and alumni of IITs continue making huge impact in all sectors of society, both in India and abroad.

Workshop Programme:

0900	Registration	
0930	Welcome	Workshop organizers
0940	From Devices to Data Analytics: the DAPHNE experience of personal exposure and ambient air quality monitoring in Delhi	Prof. D. K. Arvind, University of Edinburgh
1020	Field Calibration of Low-Cost Air Quality Sensors at Regulatory Urban Monitoring Stations in Delhi and Chennai Cities of India	Prof. Mukesh Khare, IIT Delhi
1100	Break and networking	
1120	Identifying and quantifying volatile organic compounds using fully microfabricated systems	Prof. Yogesh Gianchandani, University of Michigan
1200	Wearable Air-Quality Monitoring using Air-Microfluidics and Resonator-Based MEMS Gravimetric Airborne Particulate Matter Sensors	Prof. Igor Paprotny, University of Illinois
1240	Lunch break and guided tour of IIT Delhi research facilities	
1430	Metal Oxide based Gas sensors for Air Quality Monitoring	Dr. Ajay Agarwal, CSIR-CEERI, Pilani
1510	Multivariable Gas Sensors Research at GE: Applications for Environmental and Industrial Safety Monitoring	Dr. Radislav Potyrailo, GE Global Research
1550	Break and networking	
1610	Near-Zero Power Integrated Microsystems for the IoT	Prof. Matteo Rinaldi, Northeastern University
1650	Role of low-cost sensors and satellite observations in quantifying the impact of fires on local and regional air quality	Dr. Pawan Gupta, NASA Marshall Space Flight Center
1730	Concluding remarks	Workshop organizers

Further information: Please consult the workshop website http://ieee-sensors2018.org/pages/dst-ukieri-workshop for further information and programme updates.

Workshop sponsors:

Venue: The workshop will held in the main Seminar Hall at IIT Delhi (https://goo.gl/maps/Z7DDANaMtXH2).

Getting to the IIT Delhi campus:

1. Taxi

   At major transit stations (airport, train stations and bus stations), Delhi Police offers prepaid taxi kiosks as a service. If you choose this option (ask for IIT Delhi campus), please pay the fare at the counter. You will be handed a slip and a counterfoil. Pick up the cab (usually painted black with color strips) in the nearby queue.

   Ride aggregators Ola and Uber are commonly used by Delhi residents and may be the most convenient mode to travel if you have luggage. However, depending on the time of the day, and other events in the National Capital Territory, Delhi traffic can be slow, and hard to predict.

2. Metro

   The IIT Metro Station(https://goo.gl/maps/XPKbADBCa942) on the Magenta line serves IIT Delhi. Depending on which gate you choose to exit from, you could walk down (east) to IIT Delhi main gate, or use the subterranean passage that allows easy and safe traversal of the Outer Ring road to IIT Delhi main gate. Listed connections on the Metro are color coded below:

   a) Airport Terminal T1 (domestic) to IIT Delhi: Terminal 1 → IIT.
   b) Airport Terminal T3 (international) to IIT Delhi: i) Take free shuttle to Terminal 1 (faster), and take the Magenta Line, ii) Take the Airport Express (Orange) Line, Terminal T3 → New Delhi, New Delhi → Hauz Khas, Hauz Khas → IIT.
   c) New Delhi Railway Station (Indian Railways station code: NDLS) to IIT Delhi: Walk to Ajmeri gate (near platform 16) exit, then New Delhi → Hauz Khas, Hauz Khas → IIT.
   d) Kashmere gate bus station (Maharana Pratap ISBT) to IIT Delhi: Kashmere Gate → Hauz Khas, Hauz Khas → IIT.

3. Bus

   Several bus routes on DTC serve IIT Delhi (main gate, http://delhitravelhelp.in/StopbusesDetails.aspx?StopID=340). During peak travel hours, buses can be very crowded.