

## 2017 Distinguished Guest Lecture & Symposium

# Inside the Engine: from Chemistry to Human Health

*This one-day symposium organised by the Environmental Chemistry Group of the Royal Society of Chemistry explores the chemistry of diesel engines emissions, emissions policy, and how it's affecting human health. The 2017 ECG Distinguished Guest Lecture will be provided by Professor Frank Kelly (King's College London).*

Where: **The Royal Society of Chemistry, Burlington House, Piccadilly, London, W1J 0BA**

When: **Wednesday 1<sup>st</sup> March 2017**

### Registration

**EARLY BIRD before 1<sup>st</sup> February 2017:** £50/£35 for ECG members (free to join as an RSC member)  
**STANDARD** £65/£50

### Programme

12.00 Lunch and Coffee

13.00 Symposium begins, opening by Chair of the ECG (Zoe Fleming)



#### **Dr Claire Holman (independent consultant)**

Dr Holman is an air quality scientist, with over 30 years' experience of assessing the impacts of road transport. She started her career undertaking research into ozone in the troposphere and the stratosphere. Since then she has worked as a consultant forecasting emissions, advising on cost-effective emission abatement techniques, and undertaking a large number of air quality impact assessments. Her clients have included the European Commission and a number of national Governments in Europe and Asia, as well as a wide range of industrial and development companies and non-governmental organisations. She currently works for Brook Cottage Consultants.

*"Do diesel vehicles cause poor air quality?"*

Dr Holman will provide the introduction to the seminar, speaking on the links between diesel and air quality, vehicle regulations and general emissions legislation.



### **Dr Jacqueline Hamilton (University of York)**

Dr Hamilton is a Reader at the Wolfson Atmospheric Chemistry Laboratories, University of York, where she develops novel analytical chemistry tools to study the complex mixture of organic compounds in the atmosphere, providing a link between volatile emissions, such as from petrol and diesel, with their reaction products that end up in particles, a major air quality issue. She is a committee member of the UK and Ireland Aerosol Society and won the 2009 Desty Memorial Award for Innovation in Separation Science. Her work spans laboratory and field measurements, with recent deployments including London, Beijing, the Arctic circle and the tropical rainforest.

*"Air pollution and traffic: Searching for the missing emissions."*

Dr Hamilton will speak on novel analytical technologies and to explore volatile organic compounds from petrol and diesel emissions. The recent scandal surrounding Volkswagen and their use of cheat devices has led to the discovery that many modern cars emit levels of nitrogen dioxide (NO<sub>2</sub>) above regulations when they are driven under real world conditions. So, is this also true for some of the other pollutants emitted by road transport? These species are much more difficult to measure, as there are many thousand different chemicals at parts per trillion concentration in air, but they are currently severely underestimated. Do we need to look again at emissions testing and urban monitoring?

14.30 Tea/Coffee and the ECG Annual General Meeting

15.30 Symposium resumes



### **Mr Simon Birkett (Clean Air London)**

Simon Birkett is Founder and Director of 'Clean Air in London', which campaigns for full compliance with World Health Organisation air quality guidelines, and creator of the 'Birkett Index' and app on the health impact of long-term fine particle exposure (PM<sub>2.5</sub>). A member of the High-Level Intergovernmental and Stakeholder Advisory Group of the UN Environment Programme for its sixth Global Environment Outlook, he regularly conducts media interviews and has 80,000 followers on social media. He has a Master of Science from the London Business School and first class degree in Civil Engineering from the University of Melbourne, and spent over 20 years at HSBC in various roles.

*"The Emissions Policy and Air Pollution"*

Simon Birkett will speak on the history of favouring of diesel fuel based on CO<sub>2</sub> emissions, including setting not-technology-neutral standards and the current removal of Diesel Particulate Filters (DPFs). His talk will address issues surrounding emissions surcharge and ultra low emission zone and the opportunity and need to ban diesel as we banned coal 60 years ago.



### **Distinguished Guest Lecture: Professor Frank Kelly (King's College London)**

Professor Kelly holds the chair in Environmental Health at King's College London, and is Director of the Environmental Research Group, the NIHR Health Protection Research Unit on Environmental Hazards and Deputy Director of the MRC-PHE Centre for Environment and Health. His research spans all aspects of air pollution research from toxicology to science policy. He has led studies of the urban airshed including the impact of the introduction of London's Congestion Charging Zone and Low Emission Zone. Other work examines the toxicity of PM associated metals and quinones, diesel and biodiesel exhaust emissions, wood smoke and the identification of traffic exposure biomarkers. Professor Kelly is past President of the European Society for Free Radical Research, Chairman of the British Association for Lung Research, provides policy support to the WHO and is Chairman of COMEAP the Department of Health's Expert Committee on the Medical Effects of Air Pollutants.

*"Traffic Pollution and Health in London, Umea and Beijing."*

In cities across the globe, road transport remains an important source of air pollutants that are linked with acute and chronic health effects. Professor Kelly will provide the Distinguished Guest Lecture, speaking on his work over the last 20 years investigating these associations in human challenge chamber studies in Umea, Sweden; real-world exposure scenarios in London and recently the link between traffic emissions and health in the megacity Beijing, China. In this talk he'll review his group's findings and those from other groups in an effort to convince you we need to advance beyond a fossil fuel based road transport system.

General Discussion

17.15 Close