

**UK  
TRIBOLOGY**

UK TRIBOLOGY 1<sup>ST</sup> NATIONAL EVENT

# Future cities and mobility: the challenges for tribology

21<sup>ST</sup> February 2019

National Physical Laboratory (NPL), Teddington



“ Tribology is not a specialist subject. It is the physical science based technology of friction. Friction is vital for mankind; without it, people could not move, fish could not swim, birds could not fly. The quality of life for this and future generations will all be helped by the application of the ever-increasing knowledge of tribology.” Prof. Peter Jost

[www.uktribology.net](http://www.uktribology.net)

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# Future cities and mobility: the challenges for tribology

Technological developments and disruptive business models will have a significant impact on how people and goods move around the UK and to and from the UK over the coming decades. The UK Government states the UK will become a world leader in shaping the future of mobility. We are on the cusp of a profound change in how we move people, goods and services around our towns, cities, countryside and globally. This is driven by extraordinary innovation in engineering, technology and business models. The UK's road and rail network could dramatically reduce carbon emissions and other pollutants, congestion could be reduced through higher-density use of road space enabled by automated vehicles, and mobility could be available when we want it, where we want it and how we want it. We will look for opportunities to improve customers' experience, drive efficiency and enable people to move around more freely. Among the current great challenges in transportation we find the reduction of renewable material consumption, the limitation of greenhouse gas emissions, the scaling down of maintenance cost and frequency and, for mechanical transmissions, the extension of their life and their efficiency. Other drivers of change and need for innovative tribological solutions area are autonomy (driverless cars/trucks, trains, UAVs, ships etc), predictive condition based maintenance, mobility of an ageing population and extending asset use.

## PROGRAMME

The morning will consist of a keynote speaker from Arup who will detail the vision on future mobility for cities and detail the tribological challenges in meeting this vision. This will be followed by a structured response by the tribology community to these challenges with areas such as human mobility and automotive, rail, sea, air transportation, lubricants and smart machines (tribotronics) being covered. The afternoon will consist of breakout discussion groups to look at the individual challenges, funding opportunities for industry and academia, future testing and simulation, standards and much more. There will be an exhibition, poster session and wine reception to aid networking and discussions.

## AIM OF THE DAY

This FIRST national tribology conference organised by five professional bodies (IoP, IET, IoM3, IMechE and RSC) is truly multidisciplinary and aims to explore the tribological challenges of future cities and mobility and discuss existing and future tribological solutions to enable this vision to be realised and for UK companies to innovate and lead the world through informed design.

## WHY ATTEND

Engage in defining future challenges and needs of tribology in mobility. Build collaborations that would suit research and industrial strategy funding. Access solutions and design

## PROGRAMME

- 9.00** Registration and coffee
- 9.30** Welcome and aims (RJKW)
- 9.40** Plenary: Future Buildings by Arup
- 10:10** Automotive applications / electric drives:  
response by Michael Gahagan from Lubrizol
- 10.35** Future Human Mobility response by Claude Rieker from Zimmer/Biomet
- 10.50** Future Rail Dr David Fletcher, Univ of Sheffield
- 11.15** Refreshments/networking break
- 11.45** Future Marine, LRQA ( Clive Arnold/ a. n.other)
- 12.10** Smart Machines and Tribotronics , Prof Ian Sherrington
- 12.35** Q&A/ discussion panel
- 13.00** Lunch including networking, posters / electronic displays
- 14.00** Afternoon breakout briefing Prof Robert Wood
- 14.10** Breakout session 1
- 15.00** Tea and Coffee break
- 15.30** Breakout session 2
- 16.20** Feedback from breakout groups
- 16.45** Networking session and discussion groups with wine reception / posters  
(sponsored by the Jost Foundation) and review of the  
Feedback Groups discussion
- 19.00** Depart NPL

## EXHIBITION

Table top exhibits available

Electronic display boards available to display products/services

For details of costs and availability email [kate.harrison@iom3.org](mailto:kate.harrison@iom3.org)

## COSTS

1. DELEGATES £30
2. STUDENT IN FULL TIME EDUCATION: A limited number of free of charge places available on a first come, first serve basis.