THE HONG KONG POLYTECHNIC UNIVERSITY
香港理工大學

DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING
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National Rail Transit Electrification and Automation Engineering Technology Research Center (Hong Kong Branch)
國家軌道交通電氣化與自動化工程技術研究中心
(香港分中心)

Seminar on Global Railway Technology Developments

Prof. Clive Roberts

Birmingham Centre for Railway Research and Education,
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ABSTRACT

Over recent years, an increased emphasis has been placed on the role of technology to ensure that railway systems of the future are dependable, economically viable and use low energy. This seminar will discuss some of the recent technological advancements that are being developed for railways around the world, with a particular focus on those that will help to improve capacity and customer satisfaction and reduce cost and carbon emissions.

Since 2007, the UK Rail Technical Strategy has set out a vision for railway technology developments over the next 30 years and has identified twelve key capabilities that are required to realise the strategy. The strategy has now been adopted throughout Europe and underpins the pan-European Shift2Rail Joint Technology Initiative. Within the Birmingham Centre of Railway Research and Education at the University of Birmingham, and the newly formed UK Railway Research and Innovation Network, research and development is being undertaken collaboratively with international railway suppliers (e.g. Siemens, Bombardier, Hitachi, Thales), the main railways in Britain (Network Rail, London Underground and HS2), as well as international metros (e.g. Singapore, Guangzhou Beijing, Dubai, etc.). Key areas of development include: (i) the use of advanced simulation to quantify how improvements in technology will improve performance, while also helping to reduce verification and validation processes; (ii) the potential for making better use of data, while ensuring that data security; (iii) the advanced use of sensing and condition monitoring to improve automation; (iv) identification and unblocking barriers to introducing innovation into the railway industry.

The seminar will provide a broad overview of global development in railway technology, while highlighting some particularly interesting case studies that have progress from low level technology readiness level research, through to widespread usage on the today's railway. Key developments that are in progress will be discussed, and the potential impact that they may make to how railways of the future perform will be explored.

Date: 7 December 2018 (Friday)
Time: 3:00-4:30pm
Venue: V315, PolyU

SPEAKER'S BIOGRAPHY

Professor Clive Roberts is Director of the University of Birmingham Centre for Railway Research and Education, which in 2017 was awarded the Queen's Anniversary Prize for Further and Higher Education. He leads the UK Railway Research and Innovation Network (UKRRIN) - a £92m academia/industry collaboration, as well as initiatives to encourage SMEs to work in the rail sector. His main research interests lie in the areas of railway condition monitoring, data integration and cybersecurity, railway traffic management, power system design and energy efficiency, and overall system integration. He is a Visiting Professor at Heriot Watt University, Beijing Jiaotong University and Universiti Tun Hussein Onn (Malaysia). In 2010 he was named as one of the National Science Foundation of China's International Young Scientists, and he currently holds the position of Foreign Expert to the Chinese State Administration of Foreign Experts. He is a Fellow of the IRSE and co-chair of the IEEE TC on Railroad Systems and Applications. He is a Technical Advisor to SMRT (Singapore) and Guangzhou Metro.

*** All Interested Are Welcome ***
For further information, please contact Miss Autumn Lin at Tel. 3400 8535.
Certificates of attendance will be provided to participants if they attend the whole lecture.