

PLENARY LECTURE

RAILWAY ELECTRIFICATION COST REDUCTION FOR A MORE SUSTAINABLE TRAIN TRANSPORTATION SYSTEM

João Pombo

Institute of Railway Research, University of Huddersfield, UK
IDMEC, Técnico Lisboa & ISEL, Polytechnic Institute of Lisbon

Summary: An electrified railway has larger capacity, is more reliable and is cheaper to run. It also has environmental benefits as it produces no emissions and is becoming more decarbonised closer the electricity grids get to net zero. These factors make electrification of the modern railway systems an imperative to meet the transport decarbonization targets defined by the Paris agreement. To achieve this goal, it is imperative to reduce the costs of railway electrification. This work presents recent developments and case studies to improve the dynamic interaction between the pantograph and the overhead contact system. The aim of these tools is to de-risk new electrification projects and propose innovative solutions to enhance the operational efficiency of the rail transport, while reducing the overall construction costs.