

International Journal of Railway Technology

Editor:
J. Pombo

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on Railway Technology:
Research, Development and Maintenance**



The International Journal of Railway Technology (IJRT) is an international journal dedicated to research, development and application in the scope of railway systems. The aim of the Journal is to provide an international platform for researchers and experts to promote, disseminate and discuss the recent developments and advances in the field of railway technology. Furthermore, this publication aims to encourage interaction and collaboration between universities, research centers, railway operators and industry in order to identify problems, propose solutions and indicate directions for future research. The Journal publishes original papers that cover, but are not limited to, the following topics:

- **Rolling Stock:** Design, manufacture and maintenance; Modelling and simulation; High speed trains, light railways and freight capacity; Performance and optimisation; Aerodynamics and crosswind; Noise, vibration and comfort; Safety, security and reliability; Ergonomics and interior design.
- **Infrastructure:** Bridges, tunnels and transition zones; Track design, construction and maintenance; Interaction of vehicles with the infrastructure and the environment; Foundations; Track monitoring; Trackbeds: sleepers and ties; Geotechnical aspects: earthworks, embankments, stabilisation; Technologies for track defects detection.
- **Energy and Environment:** Re-use of kinetic energy; Energy sources and smart grids; Hybrid traction and power trains; Sustainable rail transport.
- **Signalling and Communication:** ERTMS - European Rail Traffic Management System; ITS - Information and Technology Systems.
- **Operations** Traffic management; Interoperability; Intermodal solutions.
- **Strategies and Economics:** Standards and regulations; Capacity and cost; Track access charges; Future trends in railway engineering.

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Editorial

Railways have always played a significant role in the development of the wealth creation capabilities of society. The early roman wagonways, the steam driven railways during the industrial revolution and the electric railways of the late nineteenth and twentieth centuries are just a few of the railway systems that have played a vital role in past infrastructure development. The search for fast, reliable and cost effective means of transport which presents better energy efficiency and less impact on the environment has resulted in renewed interest and rapid development in railway technology.

This volume launches the “International Journal of Railway Technology” (IJRT) which is dedicated to research, development and application in the scope of railway systems. The aim of the Journal is to provide an international platform for researchers and experts to promote, disseminate and discuss the recent developments and advances in the field of railway technology. Furthermore, this publication aims to encourage interaction and collaboration between universities, research centers, railway operators and industry in order to identify problems, propose solutions and indicate directions of future research.

The IJRT is published by Saxe-Coburg Publications in print and digital versions with four issues per annum. The Journal publishes original papers that cover, but are not limited to, the following topics: rolling stock; infrastructure; energy and environment; signalling and communication; operations; strategies and economics.

This first issue of the IJRT comprises the twelve invited lectures presented at “Railways 2012: The First International Conference on Railway Technology: Research, Development and Maintenance” held in Las Palmas de Gran Canaria, Spain, 18-20 April 2012. The invited lectures provide a state-of-the-art review of a particular research area or summarise a body of significant research or knowledge.

Other contributed papers presented at the Railways 2012 conference were published in “Proceedings of the First International Conference on Railway Technology: Research, Development and Maintenance” edited by J. Pombo and published by Civil-Comp Press.

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