

International Journal of Railway Technology

Editor:
J. Pombo

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**Railways 2014: The Second International Conference
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

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Research and development for railways has recently found new impetus as society continues to search for cost effect and sustainable means of transport. Developments in railways continue to defy the predictions made in the 1960s when the role of railways was expected to diminish. Today, as in the past, the industry is driven by speed, reliability and safety. “Railways 2014: The Second International Conference on Railway Technology: Research, Development and Maintenance” held in Ajaccio, Corsica, France, 8-11 April 2014 provided a venue for those from academia and industry concerned with the development of railways to discuss and debate these and many other issues.

Three special issues of the IJRT (Volume 2(3), 2(4) and 3(1)) have been devoted to the publication of the invited lectures presented at “Railways 2014”. These lectures provide: (1) A state-of-the-art review of a particular research area, or; (2) Summarise a body of previously unpublished significant research or knowledge. I am particularly grateful to the Invited Lecturers for the contribution of their papers to both the journal and the conference.

Other contributed papers presented at the Railways 2014 Conference were published in: “Proceedings of the Second International Conference on Railway Technology: Research, Development and Maintenance” edited by J. Pombo and published by Civil-Comp Press.

I would like to thank the members of the Editorial Board of the Railways 2014 Conference: Prof. J.E. Abdalla Filho, Brazil; Prof. A. Alonso, Spain; Prof. J.A.C. Ambrsio, Portugal; Dr L. Baeza, Spain; Prof. C. Baker, UK; Prof. S. Barmada, Italy; Prof. Dr-Ing M. Beitelschmidt, Germany; Dr Y. Bezin, UK; Prof. A. Bracciali, Italy;

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