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Inaugural editorial for the International Journal of Rail Transportation

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EDITORIAL

Inaugural editorial for the *International Journal of Rail Transportation*

Despite nearly 200 years of modern railway development, there are limited peer-reviewed platforms for knowledge dispersion in the highly multi-disciplinary field of rail transportation.

The resurgence of rail transportation on worldwide basis in recent years requires the development and implementation of the most advanced technologies for high performance, high safety, cost-effectiveness, efficiency, protection of the environment, and sustainability. The rapid development of high-speed railways has entered the largest expansion in history. In the recent 10 years, China has developed a network of high-speed railway lines with a total length exceeding 9356 kilometres, longer than the total length of high-speed railway lines of the rest of the world. In 2020, there will be a fast railway network with a total length of 50,000 kilometres in China including 16,000 kilometres of high-speed railway lines, resulting in the largest high-speed railway network with the highest operational speed. In addition, the construction of high-speed railway networks in several continents will involve the equivalent investment of trillions of US dollars in the next few decades.

On the other hand, urban rail-based mass transit lines and metro systems are experiencing rapid expansion in mainland China as well with completed lines of over 2000 kilometres and another 2000 kilometres under construction. Many countries are embracing railway technology for mass transit and intercity transportation as a primary solution to easing congestion and reducing energy consumption together with a low impact on the environment. Furthermore, freight transport on railways over long distances are in many cases competitive with other means of transport; but in international and transcontinental traffic, the differences in national infrastructure and safety regulations constitute a hindrance for the increase in the efficiency. Heavy-haul of mass commodities will grow in volume to satisfy the needs of the growing world population, and the development of new solutions to the technical problems will continue. In order to improve the safety of railway transportation even further and in order to increase the capacity on railway lines, the signal and the communication systems are in a period of rapid development with increased application of electronic devices and radio-borne exchange of information.

The unprecedented modernisation and expansion of rail transportation systems will require substantial new efforts in scientific research for field-deployable technologies. The launching of the *International Journal of Rail Transportation* by Taylor & Francis Group is to satisfy the growing demands of scientists, engineers and policy-makers to publish, learn and implement the latest scientific findings relevant to rail transportation. As the leader of railway research and education in China, Southwest Jiaotong University is the launching partner of the journal.

The *International Journal of Rail Transportation* aims to provide an open forum for scientists, researchers and engineers of the world to promote the exchange of the latest scientific and technological innovations in rail transportation; and to advance the

state-of-the-art engineering and practices for various types of rail-based transportation systems.

This new journal focuses on the publication of new and original research results in all main areas of railway vehicle, infrastructure, traction power, operation, safety, communication and environment. All significant topics in railway sciences and technologies are covered by the journal including dynamics and mechanics of railway vehicle, track and bridge system; planning and design, construction, operation, inspection and maintenance of railway infrastructure; train operation, control, scheduling and management; railway electrification; signalling and communication; and environmental impacts such as vibration and noise.

The editorial policy of the new journal will abide by the highest level of standards in research rigour, ethics and academic freedom. All published articles in *International Journal of Rail Transportation* have undergone rigorous peer review, based on initial editor screening and anonymous refereeing by independent experts.

We represent the editorial board to invite worldwide researchers, scientists and engineers in the railway field to contribute to the success of this uniquely positioned new academic journal.

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