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AIIT 4th International Conference on Transport Infrastructure and Systems (TIS ROMA 2024), 19th - 20th September 2024, Rome Italy

TIS Roma 2024 Conference Proceedings

Editorial

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Transport is one of the most energy-intensive and impacting sectors, accounting for nearly a quarter of Europe's greenhouse gas emissions, with road transport responsible for approximately 76% of them (source: EU transport in figures - Statistical Pocketbook 2023). In addition to CO_2 and greenhouse gases that play a central role in the greenhouse effect and climate change, road transport also adds to air pollution by releasing nitrogen oxides (NOx), carbon monoxide (CO), and particulate matter (PMx). The push towards transport decarbonisation is evident at the global level. In this respect, Europe has undertaken a road to become the world's first climate-neutral continent by 2050 via a long-term strategy. However, the impact of short-term and local strategies in mitigating the negative effects of transportation, both environmentally, socially, and economically, should not be overlooked. It is thus fundamental to identify, propose, and test innovative transport solutions to green the way forward.

This is the foundation of the fourth edition of the International Conference on Transport Infrastructure and Systems (TIS ROMA 2024), organised by the Italian Association for Transport and Traffic Engineering (AIIT) and hosted by ACI, Automobile Club d'Italia, Rome, on 19th and 20th of September 2024. The title of this edition is "Greening the way forward: sustainable transport infrastructure and systems". Starting from the success of the previous editions, TIS ROMA 2024 aimed to gather researchers, scientists, and practitioners to promote discussion, interactions, and the exchange of information. It represented an opportunity to bring together people from different professional backgrounds interested in transport infrastructure and systems. AIIT represents, since 1957, a meeting point for experts in the field of traffic and transport engineering and for all those interested in mobility, traffic, infrastructures and transport issues.

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Peer-review under responsibility of the scientific committee of the Transport Infrastructure and Systems (TIS ROMA 2024)

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The conference counted 195 participants (including about 40 who attended remotely) from 24 countries worldwide, representing over 100 academic and professional institutions and societies. With 242 scientific submissions received and 150 articles accepted for presentation, the conference offered a rich program of speeches and stimulated fruitful discussions with 23 parallel sessions. The presentations offered insight into the latest research and emerging trends in the transport field, creating a forum for exchanging ideas and sharing good practices.

The parallel sessions covered a wide range of topics:

- Sustainable urban mobility planning
- Road asset management and road safety management
- City logistics and urban freight transport
- Green ports and port-city interaction
- Environmental, social and economic sustainability of transport systems
- Sustainable Road Design, Construction Practices and Management
- Climate Change mitigation and adaptation strategies
- Sustainable Railway Design, Construction and Maintenance
- Shared mobility and mobility on demand
- Human factors and Driving Simulation Studies for Safer Road Infrastructures
- Digitalization in transport, Intelligent Transport Systems
- Air transport planning and management, Airport Infrastructures and Pavement Management Systems
- Transport policy
- Public transport
- Connected, cooperative and automated mobility
- Multimodal and integrated transport systems
- Surrogate Measures of Safety for a proactive approach
- Active mobility and micro-mobility
- Safety Strategies for Vulnerable Road Users
- Mobility as a Service, AI and big data for transport models and planning
- Life-cycle assessment and Life cycle Cost Analysis of Transport Infrastructures.

Among the most discussed topics, the evolution of transport infrastructure in the era of technological innovation was presented, focusing on integrating intelligent systems in cities and adopting new mobility solutions. The studies also examined the social and economic implications of such transformations, opening a debate on making future transport systems more inclusive and accessible. According to the conference topic, the common thread of the presented studies was sustainable mobility, with numerous speeches exploring how the negative environmental impact of transport can be reduced through careful planning and the adoption of clean technologies. Participants discussed effective strategies to reduce greenhouse gas emissions and promote more efficient use of resources through enhancing public transport and creating multimodal transport networks.

One of the highlights of the conference was the keynote speech by Gonçalo Homem de Almeida Correia from TU Delft, who made a significant contribution to the debate on sustainable mobility with his speech entitled “Navigating the Future: Strengths and Challenges of Emerging Urban Transport Services and Technologies”. Prof. Correia explored the major transformations that urban mobility has undergone in the last decade, highlighting both benefits and challenges of emerging technologies such as vehicle automation, car sharing and electric mobility. Through a wide range of case studies and data analysis, he showed how these innovations can solve critical problems such as traffic congestion, emissions and inequalities in accessibility.

In conclusion, a trend has clearly emerged from TIS Roma 2024: the transport sector is experiencing an unprecedented transformation, driven by technological innovations, sustainability needs and new societal challenges. The conference demonstrated how collaboration between universities, industry and institutions is essential to address these challenges and build a greener, more inclusive future for global transport systems. This was made possible thanks to the commitment of the Organizing Committee, the Advisory Committee, the Program Committee, the Scientific Committee and approximately 200 reviewers who guaranteed the quality of the research presented, contributing to the success of the event, chaired by Michela Le Pira, Director of the AIIT Study and Research Center, and Enrico Pagliari,

National President of AIIT. A special thanks goes to all participants and authors of the papers collected in this conference proceedings.

TIS ROMA 2024 in numbers

242 submissions
150 papers accepted and included in the final program
197 reviewers
196 registered participants (40 remote registrations)
24 countries, 100 affiliations
23 parallel sessions

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More information about the conference and AIIT can be found at:
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The Guest Editors

Michela Le Pira
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Nadia Giuffrida

All papers were peer-reviewed by at least two reviewers.