

International Conference on Advances in
Highway Engineering & Transportation
Systems
2024



Conference Proceedings

05th December 2024
University of Moratuwa, Sri Lanka

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Message from the Conference Chair

Prof. H.R. Pasindu
University of Moratuwa



Dear Participants and Esteemed Colleagues

Welcome Address for the 5th International Conference on Advances in Highway Engineering and Transportation Systems (ICAHETS) 2024.

I extend a warm welcome to the 5th International Conference on Advances in Highway Engineering and Transportation Systems (ICAHETS) 2024, organized by the Transportation Engineering Division of the Department of Civil Engineering at the University of Moratuwa. This annual forum continues to be a key platform for knowledge sharing, discussion, and collaboration among academics, researchers, and professionals in Sri Lanka's transportation sector.

This year's conference features keynote speakers from TU Dresden and IIT Indore, two leading universities in transportation engineering research, along with technical paper presentations addressing critical issues in transportation, including sustainable mobility, advanced transport infrastructure solutions, and pavement technologies. We are also delighted to include presentations from members of the Location-Based Services to Intelligent Transport Systems Project, funded by the Erasmus+ grant scheme.

I wish to thank the Vice-Chancellor, Prof. Niranjan Gunawardana; the Dean of the Faculty of Engineering, Prof. Jagath Manatunge; the Dean of the Faculty of Graduate Studies, Prof. Ruwan Gopura; and Prof. Udeni Nawagamuwa, Acting Head of the Department of Civil Engineering, for their steadfast support for the conference. Their commitment has been instrumental in advancing our efforts.

I am also grateful to the organizing committee for their dedication in planning this forum and to our academic and industry reviewers for their careful evaluation of the submissions. To our keynote speakers, presenters, and participants, thank you for your contributions, which make this event a vibrant and meaningful exchange of ideas.

As we commence the discussions, I encourage you to actively participate, engage with your peers, and share your insights. This is an opportunity to explore solutions to current challenges and contribute to shaping the future of transportation in Sri Lanka.

On behalf of the organizing committee, I look forward to a productive and engaging forum. Let us make the most of this opportunity to learn, collaborate, and advance our shared goals in transportation research.

Thank you.

Message from the Chief Guest

Prof. J.M.S.J. Bandara
University of Moratuwa



Dear Participants and Esteemed Colleagues,

It is a great pleasure and honor to be part of the International Conference on Advances in Highway Engineering and Transportation Systems (ICAHETS) 2024, organized by the Transportation Engineering Division of the Department of Civil Engineering, University of Moratuwa.

In recent years, Sri Lanka has faced significant challenges in maintaining and developing transport-related infrastructure, highlighting the critical need to maximize the efficiency and sustainability of our existing systems. With constrained resources, it is important that we prioritize innovative strategies to optimize the use of existing infrastructure while transitioning towards more sustainable transport systems. The integration of sustainable practices, efficient traffic management, and modern technologies is no longer a choice but a necessity.

This conference comes at a critical moment, providing an opportunity to explore solutions that can strengthen the resilience and sustainability of our transport systems. Discussions on sustainable mobility, smart infrastructure, and innovative planning methods will play a crucial role in shaping the future of transportation in Sri Lanka and the region. It is through knowledge sharing and collaborative efforts that we can address the challenges of today while building systems that cater to the needs of future generations.

I congratulate the organizing committee for creating this platform, which brings together leading experts and researchers from around the world. I am confident that ICAHETS 2024 will stimulate impactful discussions, foster valuable collaborations, and generate actionable insights to guide our path forward. I wish the conference great success and hope you leave inspired to drive change in your respective fields.

ICAHETS 2024 Organising Committee

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Prof. H.R. Pasindu

Conference Secretary

Dr. Varuna Adikariwattage

Organizing Committee

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Keynote Speech 01:

How Strategic Mobility System Planning Can Benefit from Location-Based Travel Surveys



Dipl.-Ing. Jonas Krombach

Research Associate

TUD Dresden University of Technology, Germany

Jonas Krombach is a research associate at the Chair of Mobility System Planning at TUD Dresden University of Technology (TUD) (Germany). Before joining TUD in 2022, he worked as a traffic engineer at the consultancy Rosinak & Partner ZT GmbH in Vienna (Austria) and studied transportation engineering at TUD. His research interests focus on strategic mobility planning with a special focus on sustainable urban mobility. Based on empirical data collection, insights on cities' understanding and priorities in terms of sustainable mobility are generated as the basis for developing evidence-based strategies to promote environmentally friendly travel behaviour.



Dipl.-Ing. Johannes Weber

Research Associate

TUD Dresden University of Technology, Germany

Johannes Weber is a research associate at the Chair of Mobility System Planning at TUD Dresden University of Technology (TUD) (Germany). He is a member of the Chair since 2020 and dedicates his PhD project to both opportunities and challenges of smartphone GPS-based travel surveys. This relates to testing new ways of sampling and recruitment strategies, assessing user experience and motivational concepts, and analyzing data quality and its potentials for different use cases.

Keynote Speech 02: Investigation of Horizontal Alignment Data Extraction Methodologies in Terms of Cost and Time



Dr. Gourab Sil
Assistant Professor
IIT Indore, India

Dr. Gourab Sil, an expert in Transportation Systems Engineering, specializes in road safety, driver behavior, and intelligent transportation systems. With a Ph.D. from IIT Bombay, he leads groundbreaking research on road design and safety supported by prestigious grants. An active contributor to academic journals and conferences, Dr. Sil's work drives innovation in creating safer and smarter transportation systems globally.