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REIMAGINING MOVEMENT: DR.-ING. MASRIA MUSTAFA'S MISSION TO ENGINEER SAFER, SMARTER AND MORE SUSTAINABLE TRANSPORT SYSTEMS

By: Assoc. Prof. Dr.-Ing. Masria Mustafa

Assoc. Prof. Dr.-Ing. Masria Mustafa is not merely navigating roads—she is reshaping how Malaysia and the wider region envision mobility. With a doctorate in Civil Engineering from the distinguished Technical University of Munich (TUM), Germany and extensive academic experience across Australasia and Europe, she is a leading figure in transportation engineering at Universiti Teknologi MARA (UiTM). Her passion lies in teaching and guiding students, while also being actively involved in research and projects related to traffic engineering, transport planning and sustainable mobility. She remains committed to contributing to the development of better, more efficient transport systems for Malaysia and the region

From managing traffic flow on congested urban roads to ensuring the safety of school children crossing the road, Dr.-Ing. Masria's research addresses the everyday mobility challenges faced by millions. Her work spans microscopic traffic simulation, intelligent transport systems (ITS), traffic operations and control and the environmental impacts of emerging mobility technologies, including electric and autonomous vehicles, as well as walking and cycling infrastructure. She is also the Head of the Transportation Systems, Infrastructure & Intelligent Transport Research Interest Group (TransIIT RIG), where her team is actively involved in multidisciplinary research and consultancy projects aimed at advancing sustainable and intelligent transport solutions. By utilising advanced modelling platforms such as AIMSUN and VISSIM, she recreates complex transport environments to offer decision-makers evidence-based strategies for infrastructure planning, traffic management and emissions reduction.



WHERE ENGINEERING MEETS EVERYDAY LIFE



Dr.-Ing. Masria also actively supports student-led community engagement initiatives and encourages participation in national and international competitions. She has mentored teams in collaborations with global organisations such as Shell (e.g. #ShellSelamatSampai) and C40 Cities (e.g. C40's Youth Reinventing Cities Programme), helping students apply engineering knowledge to real-world sustainability and mobility challenges. Her guidance has enabled students to develop innovative solutions, gain international exposure and build networks with industry leaders—reinforcing her commitment to nurturing the next generation of socially responsible transport engineers.



PRIORITISING SAFETY IN EVERY JOURNEY

Dr.-Ing. Masria strongly believes that safer roads start with better understanding. With the kind support of a grant from the Social Security Organization (PERKESO), she and her team are contributing to the Work-Related Road Safety (WRRS) programme. Through coaching, workshops and collaboration with stakeholders, the initiative supports organisations in addressing transport-related occupational risks—thanks to PERKESO's continued commitment to improving workplace safety. She is also deeply committed to child safety, advocating for safer school zones. "Every road crash is preventable," she emphasises, "when engineering rigour meets social responsibility." In addition to her national work, Dr.-Ing Masria serves as part of the Co-Chair of the International Outreach Chapter of the Australasian College of Road Safety (ACRS), where she fosters global collaboration and knowledge exchange on road safety research and best practices.

EMPOWERING WOMEN AND INFLUENCING POLICY

As a Malaysian representative to the Women in Transport Leadership Network (WiTL) and a driving force behind the East Asia Society for Transportation Studies (EASTS) 2023 conference, Dr.-Ing Masria is passionate about elevating women's roles in the transport sector. Her policy influence extends nationally. As a member of the Cabinet Committee for Reducing Congestion, chaired by the Deputy Prime Minister, she ensures that academic insight is at the heart of transport policy formulation—from addressing construction-induced traffic jams to improving urban transport governance. She also plays an active role in the Transport Science Society of Malaysia (TSSM), currently serving as Vice President. Given TSSM's affiliation with EASTS, she leverages this extensive regional network to promote knowledge exchange, strengthen institutional collaborations and advance transport research and innovation across Eastern Asia.

BRIDGING RESEARCH, POLICY AND PRACTICE

What sets Dr.-Ing Masria apart is her unique ability to bridge engineering science, urban policy and community impact. Whether through scholarly publications, practitioner training or media commentary, she transforms complex transport data into actionable knowledge. Her long-term vision? "To engineer transport systems that are not only intelligent and efficient, but also equitable, resilient and sustainable for the people who rely on them."



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