



Dr. Mohd Sadat

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## PROFILE

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- I specialize in traffic management and control strategies, focusing on Variable Speed Limit (VSL) systems, ramp metering, and simulation-based analysis to optimize urban freeways.
- My work has been presented at top international conferences, including the 16th International Conference on Computer Aided Systems Theory, the 19th EURO Working Group on Transportation, and multiple IEEE conferences.
- In my M.Sc. research, I analyzed VSL impacts on Istanbul's D100 freeway using VISSIM, assessing benefits in emissions, mobility, and safety. I've also studied adaptive ramp control through ALINEA and PI-ALINEA controllers, examining driver behavior for practical applications in traffic efficiency.
- Recently, I completed my PhD, where I focused on congestion management for Indian urban expressways with mixed traffic, developing advanced control strategies, including VSL and ramp metering, tailored to diverse vehicle types.

## RESEARCH INTEREST:

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- Traffic Engineering
- Intelligent Transportation Systems
- Traffic modelling and simulation
- Pavement Design
- Concrete Design
- Advance Construction Materials

## SUMMARY OF RESEARCH ACCOMPLISHMENT:

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- Variable Speed Limit (VSL) Systems: Presented studies on Istanbul's D100 freeway at international conferences, analyzing VSL effects on emissions, mobility, and safety.
- Adaptive Ramp Control: Co-authored studies on ALINEA and PI-ALINEA ramp metering controllers, presented at IEEE conferences.
- Environmental Impact of Electric Vehicles: Published work on the environmental effects of slow-moving electric vehicles using microsimulation for Lucknow urban roads.
- Mixed Traffic and Ramp Metering Modelling: Authored book chapters on car-following and lane-change models, and advanced ramp metering techniques, with upcoming chapters in a CRC Press book.

## PROFESSIONAL MEMBERSHIP:

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Member of "International Association of Engineers"

## COURSE TAUGHT:

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- Transportation Engineering
- Concrete Technology
- Dock Harbour and Tunnel Engineering
- Construction Materials
- Principles of Affordable housing
- Environmental Impact Assessment

## ADMINISTRATIVE/DEPARTMENTAL RESPONSIBILITY

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- Member of Sub-Committee for Teaching and Learning
- Member of NAAC Criteria 1 central team
- Member of Faculty Board of Studies
- Course Coordinator of B. Tech 2<sup>nd</sup> Year
- Coordinator of MOOC courses in the department of Civil Engineering
- Coordinator of Departmental Proctorial Board

## STUDENTS SUPERVISION

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- Supervised two Master's thesis titled "Analysis of Cost Optimization in Transportation Operation" and "A Study on Multiagent Transportation Management & Route Guide System".
- Currently supervising four Master's Thesis

## PUBLISHED/GRANT PATENTS

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- Design Patent titled "Solar Powered Concrete Trowel" published as corresponding author

## PUBLISHED/ACCEPTED SCI/SCOPUS RESEARCH PAPERS

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- Sadat M, Ahmad SA, Silgu MA, Bajpai S, Pandey D. A Study on Environmental Impact of Slow Moving Electric Vehicles Using Microsimulation on Lucknow Urban Road With an On-Ramp. *Environmental Health Insights*. 2024;18.<http://doi.org/10.1177/11786302241231706>
- Sadat, M., & Celikoglu, H. B. (2016). Simulation-based Variable Speed Limit Systems Modelling: An Overview and A Case Study on Istanbul Freeways. *Transportation Research Procedia*, 22, 607-614. <https://doi.org/10.1016/j.trpro.2017.03.051>

## PAPER PUBLISHED IN INTERNATIONAL CONFERENCES

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- M. Abuamer, M. Sadat and C. M. J. Tampère, "A Comparative Evaluation of Ramp Metering Controllers ALINEA and PI-ALINEA," 2018 International Conference on Computational and Characterization Techniques in Engineering & Sciences (CCTES), Lucknow, India, 2018, pp. 127-131, doi: 10.1109/CCTES.2018.8674110.<http://doi.org/10.1109/CCTES.2018.8674110>
- M. Abuamer, M. Sadat, M. A. Silgu and H. Berk Celikoglu, "Analyzing the effects of driver behavior within an adaptive ramp control scheme: A case-study with ALINEA," 2017 IEEE International Conference on Vehicular Electronics and Safety (ICVES), Vienna, Austria, 2017, pp. 109-114. <https://doi.org/10.1109/ICVES.2017.7991910>

## PUBLISHED NON-SCI-SCOPUS BUT PEER REVIEWED RESEARCH PAPERS

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- Faizan. A, Ahmed. A,Ahmed. S.A., Sadat. M, "Comparison of Concrete Properties by using Different Types of Fine Aggregates available in Lucknow". *International Journal of Recent Scientific Research*Vol. 9, Issue, 4(J), pp. 26235-26239, April, 2018
- Faizan. A, Ahmed. A,Ahmed. S.A., Sadat. M, "A Review Paper on Comparison of Concrete Properties By Using Different Types of Fine Aggregate Available in Lucknow". *International Journal of Recent Scientific Research* Vol. 9, Issue, 4(I), pp. 26170-26174, April, 2018

## BOOK EDITED/ AUTHORED

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- Authored book titled "Modern Construction". Aargon Press. ISBN: 978-93-94070-29-5

## BOOK CHAPTERS

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- Sadat, M., Ahmad, S. A., & Silgu, M. A. (2024). Mixed Traffic Modelling: An Overview of Car Following and Lane Change Models. In B. Pandey, U. Kanike, A. George, & D. Pandey (Eds.), *AI and Machine Learning Impacts in Intelligent Supply Chain* (pp. 209-225). IGI Global. <https://doi.org/10.4018/979-8-3693-1347-3.ch014>
- Sadat, M., Abuamer, I.M., Ali Silgu, M., Berk Celikoglu, H. (2018). A Comparative Performance Analysis of Variable Speed Limit Systems Control Methods Using Microsimulation: A Case Study on D100 Freeway, Istanbul. In: Moreno-Díaz, R., Pichler, F., Quesada-Arencibia, A. (eds) *Computer*

Aided Systems Theory – EUROCAST 2017. EUROCAST 2017. Lecture Notes in Computer Science(), vol 10672. Springer, Cham. [https://doi.org/10.1007/978-3-319-74727-9\\_56](https://doi.org/10.1007/978-3-319-74727-9_56)

- Sadat, M., Abuamer, I.M., Ahmad SA. (2021). Determining the PCU Equivalent of Electric Rickshaw using Microsimulation. Part of Book “Sustainable Infrastructure Development” ISBN: 978-93-94070-29-1
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