

## Dr. Sarfaraz Ahmed

Scientist

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### EDUCATIONAL QUALIFICATION

- Ph.D. - Civil Engineering (2018), Indian Institute of Technology Bombay, India. Specialization: Transportation Systems Engineering.  
**Ph.D. Thesis:** Development of Pavement Maintenance Prioritization Tool and Evaluation of Lateral Distribution of Heavy Vehicles and its Impact (2018), Supervisors: Prof. P. Vedagiri, IIT Bombay, and Prof. K. V. Krishna Rao
- M. Tech – Civil Engineering (2010), Indian Institute of Technology Kharagpur, India. Specialization: Transportation Engineering Division.  
**M. Tech Dissertation:** Performance Criteria for Rural Road Pavements (2010), Supervisor: Prof. K. Sudhakar Reddy,
- B. E - Civil Engineering (2008), Indian Institute of Engineering Science and Technology, Shibpur, West Bengal, India.  
**B. E Project:** Design of Multi-storied R.C.C. Building as per Relevant IS-Codes and Furnished Data (2008), Supervisors: Prof. S. C. Dutta and Prof. P. Chakrabarty.

### PROFESSIONAL EXPERIENCE

- Scientist (February, 2021-present)  
Flexible Pavement Division, CSIR-Central Road Research Institute, Delhi, India
- Assistant Professor (October, 2020 - February, 2021)  
Department of Civil Engineering, Bajaj Institute of Technology, Wardha, Maharashtra, India
- Associate Professor (May, 2019 – May, 2020)  
Department of Civil Engineering, Malla Reddy Institute of Technology and Science, Hyderabad, Telangana, India
- Research Associate (May, 2018 – November, 2018)  
Department of Civil Engineering, Indian Institute of Technology Bombay, India.
- Teaching Assistant (January, 2012 – April, 2018)  
Department of Civil Engineering, Indian Institute of Technology Bombay, India.
- Lecturer (June, 2010 – December, 2011)  
Department of Civil Engineering, Rajiv Gandhi University of Knowledge and Technologies AP IIIT-RK Valley, Kadapa, Andhra Pradesh, India.
- Teaching Assistant (July, 2008 – May, 2010)  
Department of Civil Engineering, Indian Institute of Technology Kharagpur, India.

### RESEARCH INTERESTS

- Pavement Evaluation, Maintenance and Rehabilitation
- Analysis and Design of Pavements
- Pavement Material Characterizations

### CONSULTANCY PROJECT INVOLVEMENT:

*Details of the projects involved in IIT Bombay (As a student)*

1. **Project title:** Evaluation of Safety Audit of Proposed BRTS System at Pimpri Chinchwad (*Principal Investigator: Prof. P. Vedagiri*)  
**Responsibilities:** Planning for traffic surveys, traffic data collection and analysis, and draft report preparation (2013)  
**Client:** Pimpri Chinchwad Municipal Corporation (PCMC), Government of Maharashtra.
2. **Project title:** Safety Audit and Quality Control for Sion-Panvel Highway Widening and Improvement Work (*Principal Investigators: Prof. K. V. Krishna Rao and Prof. P. Vedagiri*)

**Responsibilities:** Planning for pavement evaluation survey, preparation for surveying evaluation form, investigation of cracking in concrete panel, and preparation of draft report (2014-2015)

**Client:** Public Work Department (PWD), Government of Maharashtra.

3. **Project title:** Monitoring and Evaluation of Road safety in Mumbai (*Principal Investigator: Prof. P. Vedagiri*)

A joint project by IIT Bombay and Johns Hopkins International Injury Research Unit (JHIIRU), Baltimore

**Responsibilities:** Planning for traffic surveys, Traffic data collection of Helmet Usage, Seatbelt Usage and Speeding, and draft report preparation (2015 - 2018)

**Client:** Bloomberg Philanthropies.

*Details of the projects involved in IIT Kharagpur (As a student)*

4. **Project title:** Evaluation of subgrade soils with non-traditional additives (*Principal Investigator: Prof. K. Sudhakar Reddy*)

**Responsibilities:** Laboratory investigation of soils through liquid limit and plastic limit test, CBR test, UCS test, analysis of results and draft report preparation (2009)

**Client:** IPPL, India.

5. **Project title:** Evaluation of polymer modified bitumen (*Principal Investigator: Prof. K. Sudhakar Reddy*)

**Responsibilities:** Laboratory investigation of polymer modified binder, analysis of results and draft report preparation (2010)

**Client:** Sapco Bitumen Company Limited, India.

#### **MEMBERSHIP OF PROFESSIONAL SOCIETY**

1. Member of American Society of Civil Engineers (ASCE) Member ID: 11450975

#### **ACADEMIC ACHIEVEMENTS**

- Awarded international travel grant to attend EWGT and ICAHETS conferences in the Netherlands (2015) and Sri Lanka (2017) respectively from Indian Institute of Technology Bombay, Government of India.
- Awarded MHRD Scholarship for pursuing M.Tech (2008-2010) and PhD (2012-2108) from IIT Kharagpur and IIT Bombay respectively.

#### **CONFERENCES/WORKSHOP:**

1. Attended Web-based training programme on **Design, Construction and Quality Control Aspects of Flexible and Rigid Pavements in Rural Roads**, CRRI, Delhi, India (2021).
2. Attended Webinar on **Intellectual Property and Technology Management**, CSIR-HRDC, Ghaziabad, India (2021).
3. Attended National Webinar on **Ancient Indian Science and Technology**, NIT Jamshedpur, India (2021).
4. Attended Workshop on **Concept, Theory and Practices of Road Pricing Schemes: Lessons Learned and Way Forwarded** in Birla Institute of Technology and Science Pilani, Hyderabad Campus, India (2020).
5. Attended and presented a research paper in 5<sup>th</sup> **International Conference on Advances in Highway Engineering and Transportation Research** in University of Moratuwa, Moratuwa, Sri Lanka (2017).
6. Attended 4<sup>th</sup> **National Review Workshop of Indian Highway Capacity Manual**, IIT Bombay (2016).
7. Attended and presented a research paper on **Conference on Sustainable Asphalt Pavements for Developing Countries** in CSIR-CRRI, New Delhi, India (2016).
8. Attended and presented a research paper in 3<sup>rd</sup> **Conference of Transportation Research Group of India** in Kolkata, India (2015).
9. Attended and presented a research paper in 18<sup>th</sup> **EURO Working Group on Transportation** in TU Delft, Delft, The Netherlands (2015).
10. Attended Railway workshop on **Operations Planning and Strategies on Indian Railways**, IIT Bombay (2015).
11. Attended National Seminar on **Vision India 2020 Smart Cities & Sustainable Development**, ASCE, India Section (2015).
12. Attended and presented a research paper in **International Conference on Advances in Architecture and Civil Engineering (AARCV)** in M.S. Ramaiah Institute of Technology, Bengaluru, India (2012).

#### **SHORT TERM COURSES:**

1. Attended Panel Discussion of AIM-PRIME program, **Atal Innovation Mission**, NITI Aayog, India (2021).

2. Attended 3-day Faculty Development Programme on **Pavement Design, Construction, and Rehabilitation**, Vignana Bharthi Institute of Technology, India (2020)
3. Attended 5-day short-term training course on **Climate Change and Disaster Management Through ICT**, Malla Reddy Institute of Technology and Science, India (2020)
4. Attended Short Course on **Road Safety Engineering Measures**, IIT Bombay, India (2018)
5. Attended Short Course on **Road Safety Audit**, IIT Bombay, India (2017)
6. Attended Short Course on **Improving Road Safety and Accessibility Data**, Kolkata, India (2015)
7. Attended Short Course on **Pradhan Mantri Gram Sadak Yojana (PMGSY)**, IIT Bombay, India (2012)
8. Attended Short Course on **Pavement Materials Design and Evaluation (PAVEMADE)**, IIT Kharagpur, India (2009)

#### **JOURNAL/CONFERENCES REFEREED**

1. International Journal of Pavement Research and Technology, Elsevier
2. Arabian Journal of Science and Engineering
3. 15<sup>th</sup> World Conference on Transportation Research (WCTR), 2019
4. 4<sup>th</sup> Conference of Transportation Research Group of India (CTRG), 2017
5. 10<sup>th</sup>, 11<sup>th</sup> and 12<sup>th</sup> International conference of Transportation Planning and Implementation Methodologies for Developing Countries (TPMDC), 2012, 2014, 2016 respectively.

#### **PUBLICATIONS**

##### **Referred Journal Publication**

1. **Ahmed, S.,** Vedagiri, P., and Rao, K. V. K. (2017) "Prioritization of Pavement Maintenance Sections Using Objective Based Analytic Hierarchy Process", **International Journal of Pavement Research and Technology**, Vol. 10 (2), pp.158-170, ISSN: 1996-6814. DOI: 10.1016/2017.01.001.
2. **Ahmed, S.,** Vedagiri, P., and Rao, K. V. K. "Pavement Surface Distress Evaluation Using Terrestrial Laser Scanner", **Innovative Infrastructure Solutions**, (*Under Review*).
3. **Ahmed, S.,** Rao, K. V. K., and Vedagiri, P. "Evaluation of Lateral Distribution of Heavy Vehicles on Multi-lane Roads Using Strip-Based Approach", **Journal of Transportation Engineering, Part B, ASCE**, (*Under Preparation: Paper is with supervisors*).
4. **Ahmed, S.,** Rao, K. V. K., and Vedagiri, P. "Evaluation of Laterally Distributed Truck Wheel Loads and its Impact Using Layered Elastic Method", **Journal of Transportation Engineering, Part B, ASCE**, (*Under Preparation: Paper is with supervisors*).

##### **Conference Proceedings**

5. **Ahmed, S.,** Ravekar, V., Majumdar, B.B., and Koramti, S. "Factors affecting the risk of urban road traffic crashes: a case control study based on police data" 6<sup>th</sup> **Conference on Transportation Research Group (CTRG)**, Tiruchirappalli, Dec 14-17, 2021. (Accepted).
6. **Ahmed, S.,** Vedagiri, P. and Rao, K.V.K. "Advanced Tool for Accurate Pavement Distress Measurement and Evaluations". In CD-ROM of proceedings of 5<sup>th</sup> **International Conference on Advances in Highway Engineering and Transportation Systems (ICAHETS)**, University of Moratuwa, Sri Lanka, (2017).
7. **Ahmed, S.,** Vedagiri, P. and Rao, K.V.K. "AHP Based Approach for Prioritization of Pavement Sections". In CD-ROM of proceedings of **Conference on Sustainable Asphalt Pavement for Developing Countries (CONSAP)**, CRRI, New Delhi, India, (2016).
8. **Ahmed, S.,** Vedagiri, P. and Rao, K.V.K. "Development of GIS Based Tool for Pavement Maintenance Activities at Network-Level". In CD-ROM of proceedings of 3<sup>rd</sup> **Conference on Transportation Research Group (CTRG)**, India. Kolkata, India, (2015).
9. **Ahmed, S.,** Vedagiri, P. and Rao, K.V.K. "Application of Analytic Hierarchy Process for the Prioritization of Pavement Sections with Multiple Distresses". In CD-ROM of proceedings of 18<sup>th</sup> conference on **EURO Working Group on Transportation (EWGT)**, Delft, The Netherlands, (2015), ISBN: 9781510813601.
10. Sahoo, U.C., **Ahmed, S.,** and Reddy, K. S. "Long Term Performance Evaluation of Rural Road Pavements in India" In proceedings of **Geo-Hubei 2014 International Conference on Sustainable Civil Infrastructure (ASCE)**, pp. 91-94, (2014), ISBN: 9780784478462.
11. **Ahmed, S.,** and Reddy, K. S. "Performance Criteria for Rural Road Pavements" In Proceedings of **International Conference on Advances in Architecture and Civil Engineering (AARCV)**, Vol. 1, pp. 538-541, (2012), ISBN: 978-93-82338-01-7.