

Asif Ahmed, Ph.D., P.E.

100 Seymour Road, Donovan Hall 1244C, Utica, NY 13502
Cell: (682) 208- 4010; email: asif.civil.buet.12@gmail.com, asif.ahmed@sunypoly.edu
Website: <https://asifahmed3.wixsite.com/asif>

EDUCATION

Ph.D., Civil Engineering (Geotechnical) December 2017
University of Texas at Arlington
Dissertation: "Effects of Climatic Loading on Flexible Pavement Subgrades in Texas"

B.Sc., Civil Engineering February 2013
Bangladesh University of Engineering and Technology

APPOINTMENTS

Assistant Professor September 2018- Present
State University of New York (SUNY) Polytechnic Institute

Research Assistant Professor January 2018- August 2018
University of Texas at Arlington

Graduate Research/Teaching Assistant January 2014 – December 2017
University of Texas at Arlington

Lecturer, Dept. of Civil Engineering February 2013 – December 2013
Presidency University, Dhaka, Bangladesh

Lecturer (Part- Time), Dept. of Architecture September 2013- December 2013
BRAC University, Dhaka, Bangladesh

GRANT/RESEARCH EXPERIENCE

SUNY Polytechnic Institute September 2018 - Present

- Determining the Freeze-Thaw Cycle of Pavement Subgrade based on Real Time Data
Grant Awarded with METER Group (March 2019- May 2021)
- Effectiveness of Geosynthetics to Mitigate Freeze-Thaw Induced Stress in Pavement
SUNY Poly Seed Grant (July 2019- June 2020)

University of Texas at Arlington January 2014 – August 2018

Key Projects: *(Funded by Texas Department of Transportation)*

- Implementation of pavement crack repair using Modified Moisture Barrier
- Instrumentation of subgrade soil to monitor the deformation of Pavement
- Stabilization of Highway slopes using Recycled Plastic Pins (RPP)
- Use of Recycled Plastic Pins (RPP) to increase the bearing capacity of foundations
- Pavement health monitoring by Non-Destructive Testing
- Laboratory Testing on Recycled Pavement Base Materials using RAP and RCA
- Use of Resistivity Imaging for forensic investigation of shallow slope failures
- Monitoring moisture distribution in City of Denton MSW Landfill using Resistivity Imaging *(Funded by City of Denton Landfill)*

Key Responsibilities:

- Geotechnical Exploration, site investigation, field instrumentation, site monitoring and data collection in pavement, highway slope and landfill.
- Site selection, selection of geosynthetics, design of field installation for pavement repair.
- Conducting geophysical testing (Resistivity Imaging) in pavement slope, highway slope and landfill
- Numerical modeling for slope stability, rainfall induced variation of moisture in highway slopes

TECHNICAL SKILLS

- **Geotechnical Software** gINT, Geo-Slope, GSTABL, Plaxis, Driven, SpectraPave, Slide
- **Field Testing** Resistivity Imaging, Sonic Echo/Impulse Response (SE/IR), Dynamic Cone Penetrometer (DCP), Geogauge
- **Field Instrumentation** Sensor Selection (Moisture, Suction, Temperature), Pressure Cell, Inclinometer

TEACHING EXPERIENCE

Instructor

Soil Mechanics Spring 2019, 2020
Design of Earth Structures Spring 2019, 2020

Introduction to Engineering Technology Fall 2018, 2019
Civil Materials Testing Fall 2018, 2019
Foundation Analysis and Design Fall 2019
SUNY Polytechnic Institute

Instructor

Soil Mechanics Laboratory Spring 2016, Summer 2016, Summer 2018
University of Texas at Arlington

Teaching Assistant

Design of Earth Dam, Computational Geotechnics, Soil Mechanics January 2015 – May 2017
University of Texas at Arlington

Lecturer

Theory and Laboratory Courses on Geotechnical Engineering February 2013 – December 2013
Presidency University, Dhaka, Bangladesh

Lecturer (Part Time)

Basic Structural Engineering Course September 2013 – December 2013
BRAC University, Dhaka, Bangladesh

SERVICE EXPERIENCE

Reviewer, Seasonal Climatic Effects on Transportation Infrastructure (AFP 50), Unsaturated Materials (AFP 60), Geosynthetics (AFS 70), Subsurface Drainage (AFS 60) of *Transportation Research Board*.

Reviewer, ASCE Journal of Performance of Construction Facilities; Engineering Geology (Elsevier), Computers and Geotechnics (Elsevier), Geotechnical and Geological Engineering (Springer)

Mentor, in Geo-Competition for IFCEE 2018, Orlando, Florida; Geo-prediction for Geotechnical Frontiers 2017, Orlando, Florida ;Geo- Prediction for GeoSEI 2016, Phoenix, Arizona.

Judge, ASCE Student Competition: Geo-poster Judge, GeoCongress 2020

HONORS and AWARDS

- National Science Foundation (NSF) Travel Grant for CBBG 2019
- Solid Waste Institute of Sustainability (SWIS) Leadership Award 2018
- 2nd Place, ASCE–GI National Competition, Category: Geo-Poster 2017
- Honorable Mention, ASCE–GI National Competition, Category: Geo-Video 2017
- Outstanding Graduate Student, CE Dept., UTA 2015-16, 2016-17
- Dean's Listed, BUET 2010-12
- University Merit Scholarship, BUET 2008-12
- Technical Scholarship, BUET 2008-12

PUBLICATIONS

Journals

Ahmed, A., Khan, MS, Hossain MS, Sadigov, T. and Bhandari, P. (2020). Prediction of RPP Stabilized Slope Performance Using Machine Learning. *Transportation Research Record Journal (Awaiting Publication)*

Hedayati, M., **Ahmed A.**, Hossain M.S., and Hossain, J. (2019). Measurement of In-Situ Soil Characteristics Curves using Data Analysis. In *Transportation Geotechnics. (Under Final Review)*

Ahmed, A., Hossain, M. D., Pandey, P., Sapkota, A., and Thian, B. (2019). Deformation Modeling of Flexible Pavement in Expansive Subgrade in Texas. *Geosciences*, 9(10), 446.

Ahmed, A., Hossain, M.S., Khan, M.S., and Shishani A. (2018). Data Based Real Time Moisture Modeling in Unsaturated Expansive Subgrade in Texas. In *Journal of the Transportation Research Record. doi.org/10.1177/0361198118772960.*

Khan, M. S., Hossain, M. S., **Ahmed, A.** and Faysal, M. (2017). "Investigation of a Shallow Slope Failure on Expansive Clay in Texas". *Engineering Geology*. Volume 219, Pages 118-129.

Ahmed, A., Hossain, M. S., Khan, M. S., Greenwood, K., and Shishani, A. (2017). Moisture Variation in Expansive Subgrade through Field Instrumentation and Geophysical Testing. In *International Congress and Exhibition " Sustainable Civil Infrastructures: Innovative Infrastructure Geotechnology"* (pp. 45-58). Springer, Cham.

Mahedi, M., Hossain, S., Faysal, M., Khan, M. S., and **Ahmed, A.** (2017). Prediction of Strength and Stiffness Properties of Recycled Pavement Base Materials Using Non-Destructive Impact Echo Test. In *International Congress and Exhibition " Sustainable Civil Infrastructures: Innovative Infrastructure Geotechnology"* (pp. 121-136). Springer, Cham.

Islam, M. S., Sultana, N., and **Ahmed, A.** (2015). Experimental and Numerical Investigations of the Moisture Content and Wet Density of Soils. *Journal of Civil Engineering Research*, 5(1), 1-9.

Peer Reviewed ASCE Geotechnical Special Publications and TRB Proceedings

Ahmed A., and Islam, A. (2020). Effect of Using Geosynthetics in Mitigation of Freeze-Thaw Through Numerical Analysis. *GeoCongress 2020*, Minneapolis, Minnesota.

Ahmed, A., Islam, A. and Imtiaz, T. (2020). Use of Geosynthetics to Reduce Freeze-Thaw Induced Damage. For *99th Annual Meeting of Transportation Research Board*, Washington D.C.

Sapkota, A., Hossain, M.S., **Ahmed, A.**, and Pandey, P. (2019). Performance Monitoring of Slope Stabilized with Recycled Plastic Pins and Modified Moisture Barrier. *98th Annual Meeting of Transportation Research Board*, Washington D.C.

Bhandari, P., Timsiana, S., **Ahmed, A.**, Hossain, M.S. and Thian, B. (2019). Development of Strength Prediction Model for Recycled Base Materials with Soil Intrusion. *Geo-Congress 2019*, Philadelphia, PA.

Timsiana, S., Bhandari, P., Zaman, N.B. **Ahmed, A.**, and Hossain, M.S. (2019). Effect of Fine Particles in the Strength Characterization of Cement Treated Flex-Base Materials. *Geo-Congress 2019*, Philadelphia, PA.

Sapkota, A., **Ahmed, A.**, Pandey, P., Hossain, M.S. and Lozano N. (2019). Stabilization of Rainfall-Induced Slope Failure and Pavement Distresses using Recycled Plastic Pins and Modified Moisture Barrier. *Geo-Congress 2019*, Philadelphia, PA.

Pandey, P., **Ahmed, A.**, Sapkota, A., Hossain, M.S. and Thian, B. (2019). Performance Evaluation of Pavement Subgrade by In-Situ Moisture and Matric Suction Measurements. *Geo-Congress 2019*, Philadelphia, PA.

Ahmed, A., Hossain, M.S., and Khan, M.S. (2018). Monitoring of Moisture Variation in Highway Slope through Resistivity Imaging. *International Foundation Congress and Equipment Expo, IFCEE*, Orlando, FL.

Ahmed, A., Hossain, M.S., Greenwood, K. and Khan, M.S. (2018). Mitigation of Subgrade Moisture in North Texas by Using Modified Moisture Barrier. *International Foundation Congress and Equipment Expo, IFCEE*, Orlando, FL

Ahmed, A., Hossain, M.S., Khan, M.S., and Greenwood K. (2018). Use of Modified Moisture Barrier to Reduce Subsurface Moisture in Flexible Pavement in North Texas. *Proc. 97th Annual Meeting of Transportation Research Board*, Washington D.C.

Ahmed A., Hossain M.S. and Khan M.S. (2018). Unsaturated Hydraulic Properties and Suction Variation on a Pavement Subgrade over Expansive Soil. *Proc. 97th Annual Meeting of Transportation Research Board*, Washington D.C.

Mahsa H., **Ahmed A.**, Hossain M.S. and Hossain J. (2018). Measurement of In-Situ Soil Water Characteristics Curve Using Data Analysis. *Proc. 97th Annual Meeting of Transportation Research Board*, Washington D.C.

Khan M.S., Hossain M.S., **Ahmed A.** and Nobahar M. (2018). Simplified Design Method of Slope Stabilization Using Recycling Plastic Pin. *Proc. 97th Annual Meeting of Transportation Research Board*, Washington D.C.

Ahmed, A., Hossain, M.S., Khan, M.S. and Shishani A. (2017). Data Based Real Time Moisture Modeling in Unsaturated Expansive Subgrade. *Proc. Second Pan-American Conference on Unsaturated Soils*. November 12-15, Dallas, Texas.

Khan, M.S., **Ahmed, A.**, Hossain, M.S. (2017). Determination of Spatial Variation of Unsaturated Vertical Permeability. *Proc. Second Pan-American Conference on Unsaturated Soils*. November 12-15, Dallas, Texas.

Ahmed, A., Hossain, M.S., Khan, M.S. and Alam J. (2017). Moisture Distribution in Unsaturated Subgrade through Field Instrumentation and Numerical Modeling. *Proc. Second Pan-American Conference on Unsaturated Soils*. November 12-15, Dallas, Texas.

Alam J. Hossain, M.S., Khan, M.S. and **Ahmed A.** (2017). Comparison of Deep Percolation of Flat and Slope Section Vegetated Lysimeters Using Field Soil Water Characteristic Curve. *Proc. Second Pan-American Conference on Unsaturated Soils*. November 12-15, Dallas, Texas.

Khan, M.S., Hossain, M.S., **Ahmed, A.**, Greenwood, K. and Shishani, A. (2017). *Parametric Study on Slope Stability using Recycled Plastic Pin*. GeoRisk 2017, 226, June 4-7, Denver, Colorado.

Mahedi M., Hossain M.S., Nawal A.N., **Ahmed A.**, Khan M.S., and Greenwood, K. (2017). *Potential Applicability of SIR in Geophysical Investigation of Pavement Structures*. International Conference on Highway Pavements and Airfield Technology, August 27-30, Philadelphia, Pennsylvania.

Hossain, M.S., **Ahmed, A.**, Khan, M.S., Aramoon, A., and Thian, B (2016). Expansive Subgrade Behavior in a State Highway in North Texas. *Geotechnical and Structural Engineering Congress*, February 14-17, Phoenix, Arizona.

Hossain, J., Khan, M.S., Hossain, M.S. and **Ahmed, A.** (2016). Determination of Active Zone in Expansive Clay in North Texas through Field Instrumentation. *Proc. 95th Annual Meeting of Transportation Research Board*, Washington D.C.

Khan, M.S., Hossain, M.S., **Ahmed, A.** and Faysal, M. (2015). Investigation of Shallow Failure of a Highway Slope Constructed over Expansive Soil. *Proc. 94th Annual Meeting of Transportation Research Board*, Washington D.C.

Conference Proceedings (Abstract Only)

Ahmed A., Hossain M.S. and Khan M.S. (2017). Expansive Subgrade Behavior and Use of Moisture Barrier to Mitigate Edge Cracking in Flexible Pavement in North Texas, 9th Geo 3T2 Conference, North Carolina, USA.

Khan M.S., Hossain M.S., **Ahmed A.** and Faysal M. (2016). Expansive Clay Problems in Transportation Geotechnics: Site Investigation, Performance Monitoring and Sustainable Solutions. *Southern Transportation Geotechnical Engineering Conference*, Biloxi, Mississippi.

Ahmed A., Hossain M.S. and Khan M.S. (2015). Behavior of Expansive Subgrade on A State Highway in North Texas, 8th Geo 3T2 Conference, North Carolina, USA.

Other Conference Proceedings

Ahmed, A. and Islam, N. (2014). Evaluation of Current Off-street Parking Practice in Dhaka City. *Proc. International Conference on Civil Engineering for Sustainable Development*, 14-16 February, Khulna, Bangladesh-Paper ID- T 1419, pp. 279-280.

Ahmed, A. and Binoy, T.H. (2012). An Overview of the Faulty Decisions of City Authorities at Azimpur Intersection of Mirpur Road in Dhaka City., *Third International Conference on Advances in Civil Engineering ACE*, Dec 28-29, India.

Ishtiaq, K. S., Rahman, A. Z. and **Ahmed, A.** (2013). An Integrated Framework for the Floodplain Managers to Resolve the Conflicts among Stakeholders of Riverine Projects. *Proc. International Conference on Water Resources of South Asia: Conflicts to Cooperation (WRSA-CC)*, 4-5 January, Dhaka, Bangladesh.

Ahmed, A. and Hoque, M.S. (2012). Parking Policy: Neglected but Important. *Global Engineering, Science and Technology Conference*, 28-29 December, 2012, Dhaka, Bangladesh. Accessible at http://www.gistconpro.com/Dhaka_civenv2012.htm (Paper ID-811)

SELECTED RESEARCH REPORTS

Hossain, M.S., Rauss, C., Bhandari, P., and **Ahmed A.** (2018). "Performance Monitoring and Evaluation of Slopes Stabilized using Recycled Plastic Pin at highway US 287, I-35, and SH-183". Draft Final Report submitted to Texas Department of Transportation, September, 2018. Number of Pages: 166.

Hossain, M.S., Zaman, M.N.B., and **Ahmed A.** (2018). "Utilization of Recycled Plastic Pins for Improving Bearing Capacity of the Retaining Wall Foundation". Draft Final Report submitted to Texas Department of Transportation, September, 2018. Number of Pages: 200.

Hossain, M.S., Zaman, M.N.B., and **Ahmed A.** (2018). "Utilization of Recycled Plastic Pins for Increasing Shearing Resistance of Retaining wall Base". Draft Final Report submitted to Texas Department of Transportation, September, 2018. Number of Pages: 159.

Hossain, M.S., **Ahmed A.**, Sapkota, A. and Pandey, P. (2018). "Performance Monitoring of Modified Moisture Barrier to Enhance the Serviceability of Pavement at FM 987 and Monitoring Instrumented Pavement at SH 342". Draft Final Report submitted to Texas Department of Transportation, September, 2018. Number of Pages: 137.

Hossain, M.S., **Ahmed A.**, Sapkota, A., Rauss, C. and Bhandari, P. (2018). "Stabilization and Monitoring of Unreinforced Control Section of Slope at West Highway 287 near Davis Road and SH 360". Draft Final Report submitted to Texas Department of Transportation, September, 2018. Number of Pages: 70.

Hossain, M.S., Bhandari, P., **Ahmed A.**, Timsina, S., Zaman, M.N.B. and Faysal, M. (2018). "Evaluation of the Effect of Soil Intrusion in Untreated and Cement-Treated Granular Bases for Pavement Section". Draft Final Report submitted to Texas Department of Transportation, September, 2018. Number of Pages: 196.

Hossain, M.S., Sapkota, A. **Ahmed A.** and Pandey, P. (2018). "Stabilization of Rainfall-Induced Slope Failure using Recycled Plastic Pins and Modified Moisture Barrier". Draft Final Report submitted to Texas Department of Transportation, September, 2018. Number of Pages: 153.

Hossain, M.S., Khan M.,S., **Ahmed A.**, Khan, M.,A., Faysal M., Salah S., B., Shishani A. and Greenwood K. (2016). "Technical Assistance in Monitoring Moisture Variation Below Pavement and Determining the Performance of Pavement". Draft Final Report submitted to Texas Department of Transportation, September, 2016. Number of Pages: 202.

Hossain, M.S., Khan M.,S., Tamrakar S., Khan, M.,A., Faysal M., **Ahmed A** and Salah S., B. (2016). "Monitoring Instrumented and Stabilized Slope over highway 287 and Technical Assistance and Implementation of Slope Stabilization using Recycled Plastic Pin at I-35 and US 183". Draft Final Report submitted to Texas Department of Transportation, September, 2016. Number of Pages: 166.

Hossain, M.S., Khan M.,S., Ahmed N., A., Mahedi M., Faysal M., and **Ahmed A.** (2016). "Pavement Performance Monitoring using Dynamic Cone Penetrometer (DCP), Geogauge and Slab Impulse Response (SIR)". Draft Final Report submitted to Texas Department of Transportation, September, 2016. Number of Pages: 133.

Hossain, M.S., Khan M.,S., Faysal M., Mahedi M., Salah S., B., Khan, M.,A., **Ahmed A** and Flores, C.,M. (2016). "Development of Design Chart for Recycled Pavement Base Materials". Draft Final Report submitted to Texas Department of Transportation, September, 2016. Number of Pages: 229.

TECHNICAL PRESENTATIONS

98th TRB Annual Meeting (2019) entitled "Performance Monitoring of Slope Stabilized with Recycled Plastic Pins and Modified Moisture Barrier".

97th TRB Annual Meeting (2018) entitled "Data Based Real Time Moisture Modeling in Unsaturated Expansive Subgrade in Texas".

97th TRB Annual Meeting (2018) entitled "Use of Modified Moisture Barrier to Reduce Subsurface Moisture in Flexible Pavement in North Texas".

97th TRB Annual Meeting (2018) entitled "Unsaturated Hydraulic Properties and Suction Variation on a Pavement Subgrade over Expansive Soil".

97th TRB Annual Meeting (2018) entitled “Measurement of In-Situ Soil Water Characteristics Curve Using Data Analysis”.

PanAm-UNSAT (2017) entitled “Data Based Real Time Moisture Modeling in Unsaturated Expansive Subgrade”.

PanAm-UNSAT (2017) entitled “Moisture and Matric Suction Behavior in Unsaturated Subgrade through Field Instrumentation and Numerical Modeling”.

Geo-Risk (2017) entitled “Parametric Study on Slope Stability Using Recycled Plastic Pin”.

Geotechnical Structural Engineering Congress (2016) entitled “Expansive Subgrade Behavior in a State Highway in North Texas”.

95th TRB Annual Meeting (2016) entitled “Determination of Active Zone in Expansive Clay in North Texas through Field Instrumentation”

8th Geo 3T2 Conference (2015) entitled “Behavior of Expansive Subgrade on A State Highway in North Texas”.

94th TRB Annual Meeting (2015) entitled “Investigation of Shallow Failure of a Highway Slope Constructed over Expansive Soil”.

Geo-Congress(2014) entitled “A Numerical Study on Slope Stabilization using Recycled Plastic Pin”

Geo-Congress(2014) entitled “Temporary Lateral Support of a Concrete Retaining Wall Footing using Recycled Plastic Pin”.

GIST (2012) entitled “Parking Policy: Neglected but Important”

PROFESSIONAL AFFILIATION

- Member, American Society of Civil Engineers (ASCE)

National Committee Membership

- Transportation Research Board Panel 50-01 on "Improving Geotechnical Design Efficiency and Reducing Construction Uncertainties and Delays with Advanced Geophysical Methods" (2018-19)
Transportation Research Board (TRB) Committees:
- Young Member of Geosynthetics (AFS 70) (2018-21)
- Young Member of Seasonal Climatic Effects on Transportation Infrastructure AFP 50 (2019-22)
- Young Member of Engineering Behavior of Unsaturated Geomaterials (AFP 60) (2019-22)
- American Society of Civil Engineers (ASCE) : Geo-Institute Unsaturated Soils Committee

INVITED TALKS

- Ahsanuallah University of Science and Technology (2017) entitled “Advances on Geotechnical Engineering”, Dhaka, Bangladesh.
- Bangladesh Society of Geotechnical Engineers (2015) entitled “Slope Stabilization using Recycled Plastic Pin”, Dhaka, Bangladesh.
- Presidency University (2015) entitled “(a) Slope Stability and (b) Waste Management”, Dhaka, Bangladesh.