

**MD. Sahadat Hossain, Ph.D., P.E.**

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Professor, Department of Civil Engineering

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## **Education**

- Ph. D. Civil & Environmental Engineering, August 2002  
North Carolina State University, Raleigh, NC  
Major: Geotechnical and Geoenvironmental Engineering
- M. Engg. Civil Engineering April 1997  
Asian Institute of Technology (AIT), Bangkok, Thailand  
Major: Geotechnical Engineering
- B.Tech. Civil Engineering, July 1994  
Indian Institute of Technology (IIT), Bombay, India

## **Appointments**

- The University of Texas at Arlington, Arlington, TX Professor, 08/14 - Present  
Director, Solid Waste Institute for Sustainability (SWIS), 01/15 – Present  
Associate Professor, 09/10 – 08/14  
Assistant Professor, 08/04 – 08/10
- Schnabel Engineering, Maryland  
Senior Engineer, 09/03 – 08/04
- URS Corporations, Maryland  
Geotechnical Engineer, 09/02 – 08/03
- L&M Foundation Specialist, Singapore  
Design Engineer, 10/97 - 08/99
- Penta-Ocean Construction Company, Thailand  
Project Engineer, 04/97 – 10/97
- Development Design Consultants, Dhaka, Bangladesh  
Design Engineer, 05/94 – 08/95

## **News and Media** - [www.uta.edu/swis/news](http://www.uta.edu/swis/news)

### **Publication - Books**

- The Waste Crisis: Roadmap for Sustainable Waste Management in Developing Countries** – Published by Wiley Publication and ISWA, 2022. MD Sahadat Hossain, Ph.D., P.E., James Law, and Araya Asfaw
- Sustainable Slope Stabilization Using Recycled Plastic Pins** - Published by CRC Press, 2017- Sahadat Hossain, Sadik Khan, and Golam Kibria.
- Site Investigation Using Resistivity Imaging** - Published by CRC Press, 2018 - Sahadat Hossain, Golam Kibria, and Sadik Khan.

**Properties and Behavior of Soil - Online Lab Manual** by MD Sahadat Hossain, Ph.D., P.E., Md Azijul Islam, Faria Fahim Badhon, and Tanvir Imtiaz – Published by Mavs Open Press 2020.

### **Edited Books**

1. ISWA-SWIS Winter School Proceedings 2020 by SWIS Publications, Editors: **Sahadat Hossain**, Vance Kemler, and Brenda Haney (267 pages).
2. ISWA-SWIS Winter School Proceedings 2019 by SWIS Publications, Editors: **Sahadat Hossain**, Vance Kemler, and Brenda Haney (300 pages).
3. ISWA-SWIS Winter School Proceedings 2018 by SWIS Publications, Editors: **Sahadat Hossain**, Vance Kemler, and Brenda Haney (280 pages).
4. ISWA-SWIS Winter School Proceedings 2017 by SWIS Publications, Editors: **Sahadat Hossain**, Vance Kemler, and Brenda Haney (274 pages).
5. ISWA-SWIS Winter School Proceedings 2016 by SWIS Publications, Editors: **Sahadat Hossain** and Vance Kemler (248 pages).
6. ISWA Annual Congress 2016 Conference Proceedings: Novisad, Serbia – Volume 1 – Editors: **MD Sahadat Hossain**, Johann Fellner, Nemanja Stanisavljevic, James Levis (1150 Pages).
7. ISWA Annual Congress 2016 Conference Proceedings: Novisad, Serbia – Volume 2 – Editors: **MD Sahadat Hossain**, Johann Fellner, Nemanja Stanisavljevic, James Levis (1123 Pages).

### **International Solid Waste Association (ISWA) - SWIS Winter School**

1. ISWA-SWIS Winter School 2023 at the University of Texas at Arlington (UTA), the City of Arlington, the City of Irving, the City of Lubbock, the City of Grand Prairie, and the City of Garland, Texas, USA, May 22 - 02 June 2023.
2. ISWA-SWIS Winter School 2022 (Summer Edition) at the University of Texas at Arlington (UTA), the City of Irving, the City of Lubbock, the City of Grand Prairie, and the City of Garland, Texas, USA, 06-17 June 2022.
3. ISWA-SWIS Winter School 2020 at the University of Texas at Arlington (UTA), the City of Irving, the City of Grand Prairie, and the City of Garland, Texas, USA, 13-24 January 2020.
4. ISWA-SWIS Winter School 2019 at the University of Texas at Arlington (UTA), the City of Irving, the City of Grand Prairie, and the City of Garland, Texas, USA, 14-25 January 2019.
5. ISWA-SWIS Winter School 2018 at the University of Texas at Arlington (UTA), and the City of Irving, Texas, USA, 15-26 January 2018.
6. ISWA-SWIS Winter School 2017 at the University of Texas at Arlington (UTA), the City of Denton, and the City of Irving, Texas, USA, 16-27 January 2017.
7. ISWA-SWIS Winter School 2016 at the University of Texas at Arlington (UTA), and the City of Denton, Texas, USA, 18-29 January 2016.

## Awards and Honors

1. **Guest Speaker and Panelist:** International Solid Waste Association (ISWA) and Institute of Chartered Waste Managers organized workshop for the global conclave on circular economy and sustainability (CORE-2023) on Landfill Management and Closure of Dump Sites on March 13, 2023, Jaipur, India.
2. **Invited Presentation** on Plastic Road Projects at **World Bank Headquarter**, Washington, DC, January 11, 2023
3. Invited Presentation on **Plastic Road Projects** in ISWA Annual Congress 2022, In **Singapore, September 2022.**
4. **Book Launching and Signing** Event at the International Solid Waste Association (ISWA) Annual Congress 2022: September 22 in Singapore with co-author Law James, Organized by Wiley Publication for our book: **The Waste Crisis: Roadmap for Sustainable Waste Management in Developing Countries.**
5. **Meet the Professor:** “Divergence in Engineering and pioneering in it” Organized by EMK Center and Education USA, **US Embassy, Dhaka**, Bangladesh, February 16, 2021.
6. Invited Presentation on “Sustainable Waste Management and Reuse of Recycled Materials” – for both Rural and Urban Cities” – Invited by **Local Government Engineering Division**, Bangladesh – December 2021.
7. Invited Presentation on “Plastic Roads Projects in Bangladesh” –Invited by **Roads and Highway Department**, Bangladesh – December 2021.
8. Invited Speaker and Moderator at ISWA Annual Congress **2021 in Athens, Greece (Virtually)**, October 4 and October 5, 2021.
9. **Invited Speaker:** “XX International Congress on Integrated Waste Management and Environmental Perspectives – Colombia” on "Landfill Mining", September 23, 2021
10. **Honorary "Chairman of the Conference"** the International Green Climate Conference and Smart Waste Management "Sustainable Vision Green Growth" in the Context of Coronavirus Crisis - **Cairo, Egypt, September 2021**
11. **Speaker** for the 4th ISWA YPG Online Conference “The Path Forward 2023” September 2021.
12. Invited Speaker: Online Training on Dumpsite Remediation and Landfill Management, August 20-27, Organized by **Centre for Science and Environment**, New Delhi, India.
13. **Guest Speaker** for IIT Delhi organized Conference on Landfill Mining, Aug 4-6, 2021.
14. Invited Speaker “Sustainable Waste Management for Bangladesh” - 4<sup>th</sup> International Conference on Bangladesh Environment, Dec 26-27, Organized by Bangladesh Poribesh Andolan (BAPA).
15. Panelist: **Student Engagement in Online Classes: Problems and Solutions** - Organized by Northern University, Bangladesh (NUB), April 25, 2021.
16. **Guest Speaker** for webinar on “**Roadmap for Sustainable Waste Management in Developing Countries**” – Organized by ISWA, December 9, 2020
17. **Invited Speaker:** Minimizing Climate Change and Boosting Circular Economy through Sustainable Waste Management - Post COVID 19 - Global Webinar - Organized by **Asian Institute of Technology Alumni Association (AITAA) USA Chapter, October 2020.**
18. Invited Speaker: Boosting Sustainability in a Post-Pandemic Planet: Capitalizing on Climate Change Mitigation Post COVID19 - Global Webinar - Organized by **Global Chamber and UNDP - Let’s Disrupt, May 2020.**
19. **Honorary Chair and Speaker** for the 3rd ISWA YPG Online Conference “Transition to a Circular Economy: Innovation and Sustainability in Waste Management Systems”, 17th and 18th July 2020.

20. **Panelist - SWANA Young Professionals Webinar: Shaping Future Leaders** - Organized by: Solid Waste Association of North America (SWANA), July 2020.
21. **“Distinguished AIT Alumni Award for Academic and Research Excellence”** from Asian Institute of Technology (AIT), Bangkok, Thailand – Awarded on October 24, 2019 during 60th Anniversary of AIT and 50th Anniversary of AITAA in Bangkok, Thailand.
22. ISWA (International Solid Waste Association) Leadership Award: “For outstanding work in making winter school successful and continuous effort to educate next generation waste management professionals” – Awarded during **ISWA Annual Congress 2019 in Bilbao, Spain**.
23. American Association of State Highway and Transportation Officials (AASHTO) Project Award on Highway Slope Repair as one of 2019’s top projects - 2019’s Sweet Sixteen high value research projects, Highest National Award for Transportation Related Projects.
24. Invited Presentation on **“Sustainable Waste Management for Bangladesh – for both Rural and Urban Cities”** – Invited by **Minister of Rural Government**, Bangladesh - March 2019.
25. Invited by **US State Department** to visit and identify the major issues in waste management for Bahir Dar City, Ethiopia, September 2019 – Under Global Speaker Series Program.
26. Designated as Global Waste Speaker by **US State Department, 2019**
27. Invited by **US State Department** to visit and identify the major issues in waste management for Adama City, Ethiopia, September 2019. – Under Global Speaker Series Program.
28. Invited as a Landfill Expert and Participated in a workshop for “Sustainable Waste Management for Indian Cities” – Organized by **TERI (The Energy Research Institute), New Delhi, India**, March 20 -21, 2017.
29. Invited as a Landfill Expert and Conducted Failure Investigation of Recent Dumpsite Failure in Addis Ababa, Ethiopia – March 22- 24, 2017.
30. **TEDx UTA on “Garbage – Liability or Asset” – 2016.**
31. Invited and Participated as Landfill Expert for CCAC’s (Clean Climate and Air Coalition) Workshop in **Novi Sad, Serbia, September 23 – September 24, 2016.**
32. Invited for ISWA (International Solid Waste Association)/CCAC Landfill training workshop in **Dar Es Salaam, Tanzania, August 10 to 12, 2016.**
33. Invited by **Global Methane Initiative (GMI) in March 2016 in Washington D.C** to present “Sustainable Resource Management – through Landfill Mining”.
34. Invited and Conducted Landfill Training Workshop in Addis Ababa, Ethiopia in January 2016 – Invited by City of Addis Ababa.
35. Invited by the **Mayor of City of Chittagong in Bangladesh** as a technical expert for Sustainable Waste Management and Landfill Gas to Energy project, December 2015.
36. Invited Panelist for the Clean Climate and Air Coalition (CCAC) organized panel discussion on “Waste Management in Developing Countries” during the **ISWA Annual Congress 2015 in Belgium**. CCAC is a program under United Nations Environment Program (UNEP).
37. **Invited by North Central Texas Council of Governments (NCTCOG) on “Solid Waste Institute for Sustainability (SWIS)”, August 2015.**
38. Invited Panelist for Landfill and Waste Management in Developing Countries by SWANAPALOOZA 2015,

organized by both SWANA and ISWA, March 2015, New Orleans.

39. Nominated by Civil Engineering Department for University Outstanding Research Achievement Award (2013) and for University Outstanding Teaching Award (2013).
40. Nominated by Civil Engineering Department for University Outstanding Research Achievement Award (2012)
41. **Outstanding Civil Engineering Instructor Award for 2011 – 2012 (UTA)**
42. **Outstanding Civil Engineering Instructor Award for 2009 – 2010 (UTA)**
43. **Outstanding Civil Engineering Instructor Award for 2006 – 2007 (UTA)**
44. Research Assistantship for Ph.D. at North Carolina State University at Raleigh, NC (August 1999 to July 2002).
45. Japan Government Scholarship for Master of Engineering at AIT (September 95 to April 97) (Asian Institute of Technology, Bangkok, Thailand).

### **Student's / Research Group Member's Awards**

#### **National and State Awards**

1. Niloy Gupta, Md. Lutfur Rahman, Sehneela Sara Aurpa and Alinda Gupta, 1st prize in 'National Geo-Video Student Competition' Organized by Geo-Institute of ASCE at Geo-Congress 2023 (March 26-29, 2023) in Los Angeles, CA.
2. Alinda Gupta and Ishraq Faruk, 1st prize in 'National Geo-Shirt Student Competition' Organized by Geo-Institute of ASCE at Geo-Congress 2023 (March 26-29, 2023) in Los Angeles, CA.
3. Niloy Gupta and Sachini Madanayake, 1st prize in 'National Geo-Shirt Student Competition' Organized by Geo-Institute of ASCE at Geo-Congress 2022 (March 20-23, 2022) in Charlotte, NC.
4. Tanvir Imtiaz and Muhasina Manjur Dola, 1st prize in 'National Geo-Video Student Competition' Organized by Geo-Institute of ASCE at Geo-Congress 2021 (February 2021) in Dallas, TX.
5. Muhasina Manjur Dola, Ph.D. Student, awarded 2019 Dwight D. Eisenhower Transportation Fellowship from USDOT, 2019-2020.
6. Sachini Madanayake, Ph.D. Student, awarded 2019 Dwight D. Eisenhower Transportation Fellowship from USDOT, 2019-2020.
7. Pratibha Pandey and Sachini Madanayake, 3rd prize in 'National Geo-Video Student Competition' Organized by Geo-Institute of ASCE at Geo-Congress 2020 (February 25-28, 2020) in Minneapolis, MN.
8. Tanvir Imtiaz, 1st prize in 'National Outreach and Engagement Photo Contest' Organized by Geo-Institute of ASCE.
9. Prabesh Bhandari and Pratibha Pandey, 1st prize in 'National Geo-Video Student Competition' Organized by Geo-Institute of ASCE at International Foundation Congress Equipment Expo (IFCEE) 2018 (March 05-10, 2018) in Orlando, FL.
10. Rakib Ahmed, Anuja Sapkota, Md. Ishtiaque Hossain, Fouzia Hossain Oyshi, Lucas Hoyos and Maddie McCollough, 2nd place in Solid Waste International Design Competition organized by Solid Waste Association of North America (SWANA) and International Solid Waste Association (ISWA), 2017.
11. Asif Ahmed and Aya Shishani, 2nd Place, ASCE-GI National Competition, Category: Geo-Poster, Orlando, FL, 2017.

12. Ashrafuzzaman Khan and Kelli Greenwood, 2nd Place, ASCE-GI National Competition, Category: Geo-Prediction, Orlando, FL, 2017.
13. Asif Ahmed, Saif Bin Salah, Kelli Greenwood and Aya Shishani, Honorable Mention, ASCE-GI National Competition, Category: Geo-Video, Orlando, FL, 2017.
14. Umme Zakira, Md. Jobair Bin Alam, Elahe Nezhad, Rakib Ahmed, Md. Nur Basit Zaman and Sangeeta Bhattacharjee, 1st place in National Solid Waste Design Competition organized by Solid Waste Association of North America (SWANA), 2016.
15. Md Ishtiaque Hossain, Ph.D. Student, awarded Scholarship from Texas Solid Waste Association of North America (TxSWANA), 2015-2016 and 2016-2017.
16. Sonia Samir, SWIS Manager, awarded Best Reviewer 2015 - Journal of the Air & Waste Management Association (JA&WMA).
17. Sonia Samir, Ph.D. Student, awarded Scholarship from Texas Solid Waste Association of North America (TxSWANA), 2013-2014.
18. Sonia Samir, Ph.D. Student, awarded National Scholarship from Air and Waste Management Association, 2013-2014.
19. Sadik Khan, Ph.D. Candidate, awarded second place for his paper presentation titled "Field Performance of a Highway Slope in Texas Reinforced with Recycled Plastic Pins," Texas Section Spring Centennial Conference in Corpus Christi, Texas, June 2013.
20. Shahed R. Manzur, Ph.D. Student, awarded National Scholarship from Air and Waste Management Association, for the academic year 2012-2013.
21. Sonia Samir, Ph.D. Student received "NSF Student Participation award for Poster Presentation", NSF CMMI 2012 at Boston, MA.
22. Richa V. Karanjekar, Ph.D. Student, awarded National Scholarship from Environmental Research and Education Foundation (EREF), 2012-2013.
23. Shahed R. Manzur, Ph.D. Student, awarded Scholarship from Texas Solid Waste Association of North America (TxSWANA), 2011-2012.
24. Arpita Gandhi, Ph.D. Student, awarded Scholarship from Texas Solid Waste Association of North America, 2011-2012.
25. Richa V. Karanjekar, Ph.D. Student, awarded National Scholarship from Air and Waste Management Association, for the academic year 2011-2012.
26. Jubair Hossain, Ph.D. Student, awarded "Student Travel Grant", Geo-Frontier 2011 Conference.
27. Jubair Hossain, Ph.D. Student, awarded "Student Participation Grant", 2011 NSF CMMI Research and Innovation Conference.
28. Shahed Manzur, Ph.D. Student, awarded "NSF Student Participation award for Poster Presentation", NSF CMMI 2011 at Atlanta.
29. Jubair Hossain, Ph.D. Student, awarded "NSF Student Participation award for Poster Presentation", NSF CMMI 2011 at Atlanta.
30. Richa V. Karanjekar, Ph.D. Student, awarded National Scholarship from Solid Waste Association of North America, 2011-2012.

### **International Awards**

1. Sonia Samir, SWIS Manager, awarded Best Reviewer 2015 - Journal of the Air & Waste Management Association (JA&WMA).
2. Huda Shihada, Ph.D. Student, third place for presentation of poster titled "Characteristics of Municipal Solid Waste Using Electrical Resistivity Imaging", 1st International Conference on Final Sinks, Sep 23-25, 2010, Vienna, Austria.
3. Sonia Samir, Ph.D. Student, awarded Third place for poster titled "Site Investigation Approach for Landfill Mining". ISWA Beacon Conference - The 2nd International Conference on Final Sinks, 16-18 May 2013 in Espoo, Finland.

### **UTA (University) Awards**

1. Sehneela Sara Aurpa, Ph.D. Student, awarded "Outstanding Graduate Student" in Recognition in Academic Excellence in Civil Engineering, 2021-2022, UTA.
2. Ishraq Faruk, M.S. Student, awarded "Outstanding Graduate Student" in Recognition in Academic Excellence in Civil Engineering, 2021-2022, UTA.
3. Md Lutfur Rahman, M.S. Student, awarded "Outstanding Graduate Student" in Recognition in Academic Excellence in Civil Engineering, 2021-2022, UTA.
4. Maisha Masiyat, M.S. Student, awarded "Outstanding Graduate Student" in Recognition in Academic Excellence in Civil Engineering, 2021-2022, UTA.
5. Zobair Ahmed, M.S. Student, awarded "Outstanding Graduate Student" in Recognition in Academic Excellence in Civil Engineering, 2021-2022, UTA.
6. Jerin Tasnim, M.S. Student, awarded "Outstanding Graduate Student" in Recognition in Academic Excellence in Civil Engineering, 2021-2022, UTA.
7. Prabesh Bhandari, Ph.D. Candidate, awarded "Outstanding Graduate Student" in Recognition in Academic Excellence in Civil Engineering, 2020-2021, UTA.
8. Pratibha Pandey, Ph.D. Candidate, awarded "Outstanding Graduate Student" in Recognition in Academic Excellence in Civil Engineering, 2020-2021, UTA.
9. Md Azijul Islam, Ph.D. Candidate, awarded "Outstanding Graduate Student" in Recognition in Academic Excellence in Civil Engineering, 2020-2021, UTA.
10. Faria Fahim Badhon, Ph.D. Candidate, awarded "Outstanding Graduate Student" in Recognition in Academic Excellence in Civil Engineering, 2020-2021, UTA.
11. Tanvir Imtiaz, Ph.D. Candidate, awarded "Outstanding Graduate Student" in Recognition in Academic Excellence in Civil Engineering, 2020-2021, UTA.
12. Tahsina Islam, Ph.D. Candidate, awarded "Outstanding Graduate Student" in Recognition in Academic Excellence in Civil Engineering, 2020-2021, UTA.
13. Md Asif Akhtar, Ph.D. Candidate, awarded "Outstanding Graduate Student" in Recognition in Academic Excellence in Civil Engineering, 2020-2021, UTA.
14. Md Aminul Islam, Ph.D. Candidate, awarded "Outstanding Graduate Student" in Recognition in Academic Excellence in Civil Engineering, 2020-2021, UTA.



15. Tesfaye Abebe, Ph.D. Student, awarded "Outstanding Graduate Student" in Recognition in Academic Excellence in Civil Engineering, 2020-2021, UTA.
16. Assegid Getachew, Ph.D. Student, awarded "Outstanding Graduate Student" in Recognition in Academic Excellence in Civil Engineering, 2020-2021, UTA.
17. Niloy Gupta, M.S. Student, awarded "Outstanding Graduate Student" in Recognition in Academic Excellence in Civil Engineering, 2020-2021, UTA.
18. Alinda Gupta, M.S. Student, awarded "Outstanding Graduate Student" in Recognition in Academic Excellence in Civil Engineering, 2020-2021, UTA.
19. Shruti Singh, M.S. Student, awarded "Outstanding Graduate Student" in Recognition in Academic Excellence in Civil Engineering, 2020-2021, UTA.
20. Sabrina Mahjabin, M.S. Student, awarded "Outstanding Graduate Student" in Recognition in Academic Excellence in Civil Engineering, 2020-2021, UTA.
21. Md Shams Razi Shopnil, M.S. Student, awarded "Outstanding Graduate Student" in Recognition in Academic Excellence in Civil Engineering, 2020-2021, UTA.
22. Sehneela Sara Aurpa, M.S. Student, awarded "Outstanding Graduate Student" in Recognition in Academic Excellence in Civil Engineering, 2020-2021, UTA.
23. Shadman Sakib, M.S. Student, awarded "Outstanding Graduate Student" in Recognition in Academic Excellence in Civil Engineering, 2020-2021, UTA.
24. Mumtahina Binte latif, M.S. Student, awarded "Outstanding Graduate Student" in Recognition in Academic Excellence in Civil Engineering, 2020-2021, UTA.
25. Kelli Greenwood, Office of Research Award for Outstanding Poster Presentation, Annual Celebration of Excellence by Students (ACES), March 2017, UTA.
26. Asif Ahmed, Ph.D. Candidate, awarded "Outstanding Graduate Student" in Recognition in Academic Excellence in Civil Engineering, 2015-16 and 2016-2017, UTA.
27. Md Faysal, Ph.D. Graduate, awarded "Outstanding Graduate Student" in Recognition in Academic Excellence in Civil Engineering 2016-2017, UTA.
28. Md Jobair Bin Alam, Ph.D. Candidate, awarded "Outstanding Graduate Student" in Recognition in Academic Excellence in Civil Engineering 2016-2017, UTA.
29. Md Ishtiaque Hossain, Ph.D. Candidate, awarded "Outstanding Graduate Student" in Recognition in Academic Excellence in Civil Engineering 2016-2017, UTA.
30. Naima Rahman, Ph.D. Candidate, awarded "Outstanding Graduate Student" in Recognition in Academic Excellence in Civil Engineering 2016-2017 and 2017-2018, UTA.
31. Rakib Ahmed, Ph.D. Student, awarded "Outstanding Graduate Student" in Recognition in Academic Excellence in Civil Engineering 2016-2017, UTA.
32. Md Ashrafuzzaman Khan, Ph.D. Student, awarded "Outstanding Graduate Student" in Recognition in Academic Excellence in Civil Engineering 2016-2017, UTA.
33. Md Nur Basit Zaman, Ph.D. Student, awarded "Outstanding Graduate Student" in Recognition in Academic Excellence in Civil Engineering 2016-2017 and 2017-2018, UTA.

34. Anuja Sapkota, MS Student, awarded “Outstanding Graduate Student” in Recognition in Academic Excellence in Civil Engineering 2016-2017 and 2017-2018, UTA.
35. Saif Bin Salah, MS Student, awarded “Outstanding Graduate Student” in Recognition in Academic Excellence in Civil Engineering 2016-2017, UTA.
36. Md Jobair Bin Alam, Ph.D. Student, awarded 'Kelcy Warren Graduate Fellowship Award', 2015-2016, UTA.
37. Dipak Tiwari, Ph.D. Candidate, awarded Graduate School Dissertation Fellowship, Summer 2014.
38. Hedayati, Mahsa, Ph.D. Candidate, awarded Graduate School Dissertation Fellowship, Summer 2014.
39. Sadik Khan, Ph.D. Candidate, awarded Graduate School Dissertation Fellowship, Summer 2013.
40. Sonia Samir, Ph.D. Student, Provost Award for oral presentation titled “Feasibility of Landfill Mining and Reclamation in a Closed Landfill”, Annual Celebration of Excellence by Students (ACES), March 2013, UTA.
41. Huda Shihada, Ph.D. Student, won Honorable Mention Award on oral presentation titled “Estimating In-Situ Moisture Content of Municipal Solid Waste Using Electrical Resistivity”, Annual Celebration of Excellence by Students (ACES), March 2011, UTA.
42. Golam Kibria, MS Student, won Third place for presentation of poster titled “Effects of Backfill Soil on Excessive Movement of MSE wall”, Annual Celebration of Excellence by Students (ACES), March 2011, UTA.
43. Jubair Hossain, Ph.D. Student, awarded “University Scholar Award”, 2010-2011, UTA.
44. Richa V. Karanjekar, Ph.D. Student, awarded “University Scholar Award”, 2010-2011, UTA.

## Research Projects

### PI and Co-PI Research Grants (Total: \$20.45 Million and as PI: \$18.5 Million)

1. Texas Department of Transportation. **Award: \$637,060** Title: “Moisture Barrier for Pavement – Implementation Project for Fort Worth Districts, Texas”. **PI: MD Sahadat Hossain**, Co-PI: Md Azijul Islam. Project Duration: September 2022 – August 2025.
2. Texas Department of Transportation. **Award: \$249,875** Title: “Slope Repair and Maintenance Management Planning”. **PI: Mohsen Shahandashti and Co-PI: MD Sahadat Hossain**. Project Duration: March 2023 – February 2025.
3. Texas Department of Transportation. **Award: \$951,849**. Title: “Implementation of Plastic Roads and Modified Moisture Barriers for Pavements.” **PI: MD Sahadat Hossain**, Co-PI: Md Azijul Islam. Project Duration: September 2022 – August 2025
4. Texas Department of Transportation. **Award: \$1,382,040** Title: “Recycled Plastic Pins for Slope Stabilization and Moisture Barrier for Pavement – Implementation Project for Fort Worth Districts, Texas”. **PI: MD Sahadat Hossain**. Project Duration: September 2020 – August 2023.
5. Texas Department of Transportation. **Award: \$685,220**. Title: “Lateral and Vertical Capacity of Recycled Plastic Pins for stable MSE Wall Foundation for Dallas Districts, Texas.” **PI: MD Sahadat Hossain**, Co-PI: Md Azijul Islam. Project Duration: January 2022 – August 2023
6. Texas Department of Transportation. **Award: \$274,484** Title: “Implementation of Electrical Resistivity Manual” **PI - Mohsen Shahandashti, Co-PI: MD Sahadat Hossain**. Project Duration: Sep 1, 2021 – Aug 31, 2023
7. Texas Department of Transportation. **Award: \$342,588** Title: “Feasibility of Using Recycle Plastics for Plastic

- Road - Dallas Districts, Texas". **PI: MD Sahadat Hossain.** Co-PI: Warda Ashraf. Project Duration: February 2020 – January 2022.
8. Texas Department of Transportation. **Award: \$1,327,012** Title: "Use of Recycled Plastic Pins for stable MSE Wall Foundation and modified moisture barrier for pavement – Implementation Project for Dallas Districts, Texas". **PI: MD Sahadat Hossain.** Project Duration: September 2018 – August 2021.
  9. Texas Department of Transportation. **Award: \$845,000** Title: "Use of Recycled Plastic Pins for Slope Stabilization – Implementation Project for Fort Worth Districts, Texas". **PI: MD Sahadat Hossain.** Project Duration: March 2019 – August 2020.
  10. Texas Department of Transportation. **Award: \$269,523** Title: "Advance Geophysical Tools for Geotechnical Analyses". PI - Mohsen Shahandashti, Co-PI: **MD Sahadat Hossain.** Project Duration: May 2019 – May 31, 2021
  11. Texas Department of Transportation. **Award: \$275,000** Title: "Resilient Geotechnical Asset Management". PI - Mohsen Shahandashti, Co-PI: **MD Sahadat Hossain.** Project Duration: May 2019 – May 31, 2021
  12. City of Addis Ababa, Ethiopia. **Award: \$5,931,600.** Title: "Sustainable Waste Management for the City of Addis Ababa – Research and Capacity Building." **PI: MD Sahadat Hossain.** Project Duration: 09/01/19 – 08/31/24.
  13. Oromia Regional Government, Ethiopia. **Award: \$1,129,200.** Title: "Sustainable Waste Management for the Oromia Region – Research and Capacity Building." **PI: MD Sahadat Hossain.** Project Duration: 09/01/19 – 08/31/22.
  14. City of Irving, Texas. **Award: \$74,338.** Title: "Feasibility of Landfill Mining Operation in Irving Landfill." **PI: MD Sahadat Hossain.** Project Duration: 02/01/19 – 01/31/20.
  15. Clean Climate and Air Coalition (CCAC) - United Nations Environmental Program (UNEP) – Award: \$134,046 (In collaboration with ISWA) "Sub Saharan African Network for Developing Solid Waste Management Action Plan." **PI: MD Sahadat Hossain** Project Duration: 2 years (Starting December 2018 – Consultant) – not included in total amount.
  16. Texas Department of Transportation. **Award: \$1,193,208** Title: "Investigations of Increase in Shearing and Bearing Capacity of MSE Wall Foundation using Recycled Plastic Pins for Dallas Districts, Texas". **PI: MD Sahadat Hossain.** Project Duration: September 2016 – August 2018.
  17. City of Denton, Texas. **Award: \$399,886.** Title: "Sustainable Waste Management – Landfill Mining Operation and Monitoring." **PI: MD Sahadat Hossain.** Project Duration: 09/01/15 – 08/31/18.
  18. City of Denton, Texas. **Award: \$227,433.** Title: "Installation and Performance Monitoring of ET Cover System." **PI: MD Sahadat Hossain.** Project Duration: 02/01/14 – 01/31/17.
  19. Texas Department of Transportation. **Award: \$1,055,000** Title: "Slope Stabilization using Recycled Plastic Pins for Dallas / Fort Worth Districts, Texas". **PI: MD Sahadat Hossain,** Co-PI: Ashfaq Adnan (MAE) Project Duration: September 2013 – August 2016.
  20. City of Corpus Christi, Texas (with CP & Y). **Award: \$311,000.** Title: "Instrumentation and Performance Monitoring of Leachate Recirculation Systems in ELR Landfill" **PI: MD Sahadat Hossain,** Co-PI: Melanie Sattler. Project Duration: March 2013- February 2016.
  21. City of Denton, Texas. **Award: \$344,414.** Title: "Performance Monitoring of Landfill Gas Collection System and Estimation of Landfill Gas Emission." **PI: MD Sahadat Hossain,** Co-PI: Melanie Sattler. Project Duration: 05/01/12 – 04/30/15.

22. Texas Department of Transportation. **Award: \$538,304** Title: "Slope Stability Analyses and Implementation of New Slope Stabilization Methods for Dallas Districts". **PI: MD Sahadat Hossain**. Project Duration: September 2011 – August 2013.
23. Environmental Protection Agency (EPA): **Award: \$99,999**. Title: "Feasibility Studies and Training to Support Landfill Gas Recovery in Ghana. **PI: MD Sahadat Hossain**, Co-PI: Melanie Sattler. Project Duration: January 2013- December 2014.
24. NSF CIBER EPSCoRE RII-2: **Budget: \$30,000**. Title: "Resistivity Imaging and Laser Induced Breakdown Spectroscopy (LIBS) Analysis for Solid Waste in The Laboratory," PI: Mukti M Rana – Delaware State University, **Co-PI's: Sahadat Hossain**, Nouredine Melikechi - Delaware State University. Project Duration: 02/2011-01/2012.
25. National Science Foundation: **Award \$150,000**. RAPID: Collaborative Research: Gulf of Mexico Oil Spill Impact on Beach Soil: Radar and Radar Sensor Network-Based Approaches. PI: Qilian Liang, **Co-PI: MD Sahadat Hossain**, Jian Ren, Mario Di Francesco. Project Duration: September 2010- August 2012.
26. City of Corpus Christi, Texas. **Award: \$48,378**. Title: "Effects of Saline Water on the Degradation of Solid Waste in ELR Landfill" **PI: MD Sahadat Hossain**, Co-PI: Melanie Sattler. Project Duration: Jan 2011- December 2011.
27. City of Denton, Texas. **Award: \$54,472**. Title: "Monitoring of Settlement and Temperature of Solid Waste in ELR Landfill" **PI: MD Sahadat Hossain**, Co-PI: Melanie Sattler. Project Duration: Jan 2011- April 2012.
28. Texas Department of Transportation. **Award: \$714,625**. Title: "Interagency Cooperation Contract: Slope Stability Analyses and other Tasks." **PI: MD Sahadat Hossain**. Co-PIs: Laureano Hoyos and Anand Puppala. Project Duration: September 2009 – August 2011.
29. City of Denton, Texas. **Award: \$182,787**. Title: "Performance Monitoring of Leachate Recirculation Systems in ELR Landfill" **PI: MD Sahadat Hossain**. Project Duration: May 2009- April 2012.
30. Environmental Protection Agency (EPA)
  - (a) Award to City: \$200,000. Title: "City of Arlington – Community-wide Petroleum Assessment Grant Proposal." **PI: MD Sahadat Hossain**. Proposed Duration: 2 years (10/01/07 – 09/30/09) – In collaboration with City of Arlington.
  - (b) Award to City: \$200,000. Title: "City of Arlington – Community-wide Hazardous Waste Assessment Grant Proposal." **PI: MD Sahadat Hossain**. Proposed Duration: 2 years (10/01/07 – 09/30/09) – In collaboration with City of Arlington. **(UTA Share: \$50,000)**.
31. City of Duncanville, Texas. **Award: \$12,001**. Title: "Assessment of Geo-hazard Potentials for Duncanville Development Centers using High Resolution Resistivity Equipment" **PI: MD Sahadat Hossain**. Project Duration: October 2007 to November 2007.
32. University Research Grants - UTA. **Award: \$32,775**. "Acquisition of Mercury Analyzer for Environmental Research" PI: Melanie Sattler, and **Co-PI: MD Sahadat Hossain**.
33. University Research Grants - UTA. **Award: \$46,826**. "Acquisition of High-Resolution Resistivity Equipment for Geotechnical and Geoenvironmental Research" **PI: MD Sahadat Hossain** and Co-PI: Mohammed Najafi.
34. American Concrete Pipe Association. Award: \$25,220. Title: "Finite Element-Based Investigations of the Effects of Bedding Thickness and Bedding Irregularities on the Underground Pipes." PI: Ali Abolmaali. **Co-PIs: MD Sahadat Hossain** and Jiwon Jung. Project Duration: (06/01/05 – 05/31/06).
35. Texas Industries Inc. (TXI). **Award: \$102,895**. Title: "Engineering properties of cemented, fiber-reinforced recycled aggregate materials for base/sub-base applications in pavement engineering". PI: Laureano

Hoyos. **Co-PIs:** Anand Puppala and **MD Sahadat Hossain.** Project Duration: 1.25 years (06/01/05 – 08/31/06).

36. Texas Department of Transportation. **Award: \$428,060.** Title: “Interagency Cooperation Contract: Compost applications for mitigation of pavement cracking”. PI: Anand Puppala. **Co-PIs:** Sayed Qasim, Laureano Hoyos, and **MD Sahadat Hossain.** Project Duration: 1.6 years (02/14/06 – 08/31/07).

## **Student Supervising Activities**

### **Former Research Associates**

Tashfeena Taufiq (September 2010 to July 2011)

Dr. Tahsina Mahmood – Post Doctoral Research Associate (August 15, 2013 to December 31, 2013)

Dr. Sadik Khan – Post Doctoral Research Associate (January 01, 2014 to August 14, 2015)

Dr. Sonia Samir – Post Doctoral Research Associate/ SWIS Manager (January 2016 to February 2017)

Dr. Asif Ahmed - Post Doctoral Research Associate (January 01, 2018 to August 14, 2018)

Dr. MD Jobair Bin Alam - Post Doctoral Research Associate (January 01, 2018 to Jan 15, 2019)

Dr. Anuja Sapkota - Post Doctoral Research Associate (August 15, 2019 to Jan 15, 2020)

Dr. Prabesh Bhandari – Post Doctoral Research Associate (May 2021 to July 2021)

Dr. Tahsina Islam – Post Doctoral Research Associate (September 01, 2022 to May 31, 2023)

### **Ph.D. Dissertations Advised**

1. Assegid Getachew Yimenu “The Road Map for Sustainable Waste Management in Federal Democratic Republic of Ethiopia” Ph.D. Dissertation, University of Texas at Arlington, Summer 2023.
2. Tesfaye Abebe Alemu “The Impact of Improper Solid Waste Management on Public Health of African Cities – The Case of Addis Ababa City” Ph.D. Dissertation, University of Texas at Arlington, Summer 2023.
3. Niloy Gupta (2023) “Effect of Impurities in the Plastic Waste on the Performance of Plastic Road” Ph.D. Dissertation, University of Texas at Arlington, Summer 2023.
4. Alinda Gupta (2023) “Developing an Early Warning System of Highway Slope Failure Based on In-situ Hydraulic Conductivity of Soil” Ph.D. Dissertation, University of Texas at Arlington, Summer 2023.
5. Muhasina Manjur Dola (2022) “Performance Evaluation of the Modified Moisture Barrier in Stabilizing Shallow Slope Failures” Ph.D. Dissertation, University of Texas at Arlington, Fall 2022.
6. Sachini Madanayake (2022) “Performance Evaluation of Recycled Plastic Pins to Stabilize Deep Slope Failures” Ph.D. Dissertation, University of Texas at Arlington, Fall 2022.
7. Md Shams Razi Shopnil (2022) “Microplastic Risk Characterization of Plastic Road” Ph.D. Dissertation, University of Texas at Arlington, Fall 2022.
8. Sabrina Mahjabin (2022) “Optimization and Performance Evaluation of Household Anaerobic Digester” Ph.D. Dissertation, University of Texas at Arlington, Fall 2022.
9. Shruti Singh (2022) “Design of Crack Attenuating Mix Using Waste Plastic” Ph.D. Dissertation, University of Texas at Arlington, Summer 2022.
10. Tahsina Islam (2021) “Reuse of Recycled Plastic for Plastic Road Design” Ph.D. Dissertation, University of Texas at Arlington, Fall 2021.
11. Md Aminul Islam (2021) “Rainfall-Induced Slope Failure – An Early Warning System” Ph.D. Dissertation, University of Texas at Arlington, Fall 2021.

12. Md Asif Akhtar (2021) "Evaluation of Geotechnical Parameters of Soil Using Electrical Resistivity Imaging" Ph.D. Dissertation, University of Texas at Arlington, Fall 2021.
13. Md Azijul Islam (2021) "Effectiveness of Recycled Plastic Pin for Improving Bearing Capacity of Embankment over Soft Soil" Ph.D. Dissertation, University of Texas at Arlington, Summer 2021.
14. Faria Fahim Badhon (2021) "Performance of Recycled Plastic Pins for Increasing Bearing Capacity of Foundation Soil" Ph.D. Dissertation, University of Texas at Arlington, Summer 2021.
15. Tanvir Imtiaz (2021) "Reusing of Recycled Plastic as Pavement Base and Sub-base Materials" Ph.D. Dissertation, University of Texas at Arlington, Summer 2021.
16. Prabesh Bhandari (2021) "Evaluation of Recycled Plastic Pins as Shear Keys in MSE Wall Base" Ph.D. Dissertation, University of Texas at Arlington, Spring 2021.
17. Pratibha Pandey (2021) "Effect of Modified Moisture Barrier in Mitigating Pavement Distresses due to Expansive Subgrade" Ph.D. Dissertation, University of Texas at Arlington, Spring 2021.
18. Ahmed, Rakib (2019) "Evaluation and Prediction of Energy Potential of Landfill Mined Solid Waste" Ph.D. Dissertation, University of Texas at Arlington, Summer 2019.
19. Sapkota, Anuja (2019) "Effect of Modified Moisture Barrier on Slopes Stabilized with Recycled Plastic Pins" Ph.D. Dissertation, University of Texas at Arlington, Summer 2019.
20. Zaman, Nur Basit (2019) "Sustainable Ground Improvement Method Using Recycled Plastic Pins" Ph.D. Dissertation, University of Texas at Arlington, Spring 2019.
21. Rahimi, Hoda (2018) "The Effect of Termite Gut Microorganism TAV5 Ratios on Lignin Degradation and Methane Generation from Paper, Yard, and Wood Waste" Ph.D. Dissertation, University of Texas at Arlington, Fall 2018 – Co-Advisor.
22. Rahman, Naima (2018) "Sustainable Waste Management through Operating Landfill as Biocel". Ph.D. Dissertation, University of Texas at Arlington, Spring 2018.
23. Hossain, Md Ishtiaque (2017) "Non-destructive Evaluation of Soil Moisture in Evapotranspiration Cover System". Ph.D. Dissertation, University of Texas at Arlington, Fall 2017.
24. Ahmed, Asif (2017) "Effects of Climatic Loadings on Flexible Pavement Subgrade in Texas". Ph.D. Dissertation, University of Texas at Arlington, Fall 2017.
25. Alam, Md. Jobair Bin (2017) "Evaluation of Plant Root on the Performance of Evapotranspiration (ET) Cover System". Ph.D. Dissertation, University of Texas at Arlington, Fall 2017.
26. Faysal, Mohammad (2017) "Structural competency and environmental soundness of the recycled base materials in North Texas". Ph.D. Dissertation, University of Texas at Arlington, Spring 2017.
27. Alam, Md Zahangir (2016) "Moisture Distribution Efficiency and Performance Evaluations of Bioreactor Landfill Operations". Ph.D. Dissertation, University of Texas at Arlington, November 2016.
28. DeVries, Brett (2016) "Hydraulic Performance Evaluation of Evapotranspiration Cover Systems". Ph.D. Dissertation, University of Texas at Arlington, November 2016.
29. Tiwari, Dipak (2014) "Optimum Compaction for Effective Leachate Recirculation in an ELR/ Bioreactor landfill". Ph.D. Dissertation, University of Texas at Arlington, December 2014.
30. Samir, Sonia. (2014) "Performance Monitoring of Landfill Gas Collection System and Estimation of Landfill Gas Emission". Ph.D. Dissertation, University of Texas at Arlington, May 2014.

31. Kibria, Golam. (2014) "Evaluation of Physico-Mechanical Properties of Clayey Soil using Electrical Resistivity Imaging Technique." Ph.D. Dissertation, University of Texas at Arlington, May 2014.
32. Hedayati, Mahsa. (2014) "Effects of Moisture Variation on Placement Subbase – Field Study and Numerical Modeling" Ph.D. Dissertation, University of Texas at Arlington, August 2014.
33. Khan, Sadik. (2013) "Innovative Slope Stabilization using Recycled Plastic Pins" Ph.D. Dissertation, University of Texas at Arlington, December 2013.
34. Bhatt, Arpita. (2013) "Development of Regression Equations for Predicting Leachate Parameters from Simulated Landfills". Ph.D. Dissertation, University of Texas at Arlington, June 2013. - Co-Advisor.
35. Manzur, Shahed. (2013) "Hydraulic Performance of Leachate Recirculation in an ELR/ Bioreactor Landfill". Ph.D. Dissertation, University of Texas at Arlington, May 2013.
36. Hossain, Jubair. (2012) "Rainfall Induced Slope Failure Mechanism – Study of Moisture Variation and its Effect on Soil Strength". Ph.D. Dissertation, University of Texas at Arlington, November 2012.
37. Karanjekar, Richa (2012). "An Improved Gas Model for MSW Landfill". Ph.D. Dissertation, University of Texas at Arlington, June 2012. – Co-Advisor.
38. Altouqi, Said (2012). "Modeling Leachate BOD and COD using Lab-Scale Reactor Landfills and Multiple Linear Regression Analysis." Ph.D. Dissertation, University of Texas at Arlington, November 2012. – Co-Advisor.
39. Shihada, Huda. (2011). "A Non-Invasive Assessment of Moisture Content of Municipal Solid Waste in a Landfill Using Resistivity Imaging." Ph.D. Dissertation, University of Texas at Arlington, July 2011.
40. Haque, Adil. (2007). "Dynamic Characteristics and Stability Analysis of Municipal Solid Waste in Bioreactor Landfill." Ph.D. Dissertation, University of Texas at Arlington, May 2007.

### **M.S. Theses Advised**

1. Zobair Ahmed (2022) "Evaluation of Relationship between Soil's Sulphate Content and Resistivity Value." MS Thesis, University of Texas at Arlington, Fall 2022.
2. Jerin Tasnim (2022) "Reuse of Recycled Plastic for Subgrade Treatment." MS Thesis, University of Texas at Arlington, Fall 2022.
3. Mumtahina Binte Latif (2021) "Effect of Sludge Content on Different Types of Food Waste Degradation in Anaerobic Digester." MS Thesis, University of Texas at Arlington, Spring 2021.
4. Sehneela Sara Aurpa (2021) "Characterization of MSW and Plastic Waste Volume Estimation During COVID-19 Pandemic" MS Thesis, University of Texas at Arlington, Spring 2021.
5. Shadman Sakib (2021) "Feasibility assessment of production of liquid organic fertilizer (LOF) from food waste for sustainable waste management" MS Thesis, University of Texas at Arlington, Spring 2021.
6. Ayub, Afroza (2019) "Effect of Sewage Sludge and Wastewater Recirculation on the Degradation of Municipal Solid Waste in Bioreactors." MS Thesis, University of Texas at Arlington, Fall 2019.
7. Aziz, Arif Mohammad (2019) "Driveability of Recycled Plastic Pin (RPP) in North Texas." MS Thesis, University of Texas at Arlington, Fall 2019.
8. Islam, Md Tauhidul (2019) "Effect of Chicken Manure on Methane Production from MSW in Lab Scale Anaerobic Reactors." MS Thesis, University of Texas at Arlington, Fall 2019.
9. Kakara, Vijay (2019) "Physical Characterization and Evaluation of Energy Potential for Mined Waste from Irving

- Landfill.” MS Thesis, University of Texas at Arlington, Fall 2019.
10. Rauss, Cory (2019) “Long Term Performance Monitoring of Shallow Slope Stabilization Utilizing Recycled Plastic Pins.” MS Thesis, University of Texas at Arlington, Spring 2019.
  11. Sarker, Linkan (2018) “Field SWCC Modeling and Soil Water Storage Evaluation Through Geophysical Testing.” MS Thesis, University of Texas at Arlington, Fall 2018.
  12. Oyshi, Fouzia (2018) “Determination of Root Length of Evapotranspiration (ET) Cover Using Electrical Resistivity Imaging Technique.” MS Thesis, University of Texas at Arlington, Spring 2018.
  13. Hoyos, Lucas (2018) “Evaluation of Seasonal Variation in Hydraulic Conductivity of Evapotranspiration Cover System.” MS Thesis, University of Texas at Arlington, Spring 2018.
  14. Timsina, Sita (2018) “Effect of Fine-Grained Soil in the Strength of Cement Treated Flex Base Materials.” MS Thesis, University of Texas at Arlington, Spring 2018.
  15. Zakira, Umme (2017) “Life Cycle Assessment and Cost-Benefit Analysis of Landfill Mining at the City of Denton Landfill.” MS Thesis, University of Texas at Arlington, Summer 2017.
  16. Sapkota, Anuja (2017) “Effect of Manures and Enzyme on the Degradation of Organic Fraction of Municipal Solid Waste in Biocell.” MS Thesis, University of Texas at Arlington, Spring 2017.
  17. Salah, Saif Bin (2017) “Effect of Wetting-Drying Cycles on Durability of Cement Treated Recycled Pavement Base Materials.” MS Thesis, University of Texas at Arlington, Spring 2017.
  18. Zaman, Md Nur Basit (2016) “Effect of Manures on Food Waste Degradation in Biocell.” MS Thesis, University of Texas at Arlington, Fall 2016.
  19. Dhar, Arindam (2016) “Evaluation of Food Waste Diversion Potential and Economics of Using Food Waste Dehydrators.” MS Thesis, University of Texas at Arlington, Summer 2016.
  20. Khan, Md. Ashrafuzzaman (2016) “Impact of Wet-Dry Cycle on Mechanical Properties of Expansive Clay under Low Overburden Stress.” MS Thesis, University of Texas at Arlington, Summer 2016.
  21. Tamrakar, Sandip (2015) “Slope Stabilization and Performance Monitoring of I-35 and SH-183 slopes Using Recycled Plastic Pins.” MS Thesis, University of Texas at Arlington, Fall 2015.
  22. Mehedi, Mashrur (2015) “Potential Applicability of Stress Wave Velocity Method on Pavement Base Materials as a Non-Destructive Testing Technique.” MS Thesis, University of Texas at Arlington, Fall 2015.
  23. Tiwary, Aayush Raj (2015) “Landfill Volume Gain from the Diversion of Construction and Demolition (C&D) Waste.” MS Thesis, University of Texas at Arlington, Fall 2015.
  24. Koganti, Kavya (2015) “Characterization and Comparison of Fresh and Landfilled Solid Waste.” MS Thesis, University of Texas at Arlington, Fall 2015.
  25. Dipta Mitra (2014). “Effect of Corn Meal Waste on Municipal Solid Waste Degradation in Bioreactor Landfills” MS Thesis, University of Texas at Arlington, Fall 2014.
  26. Ahmad Nawal Ahasan (2014). “Pavement Performance Monitoring using Dynamic Cone Penetrometer and Geogauge during Construction” MS Thesis, University of Texas at Arlington, Fall 2014.
  27. Mohammed Rezaul Haque Bhuiyan (2014). “Group Resistance of Recycled Plastic Pin in Sustainable Slope Stabilization.” MS Thesis, University of Texas at Arlington, Spring 2014.
  28. Aminollah Ghorbanpourbabakandi (2013). “Leachate Recirculation Modeling using Vertical Wells in Bioreactor



Landfill.” MS Thesis, University of Texas at Arlington, Fall 2013.

29. Baig, Salman (2012). “The Effects of Climate, Soil, and Vegetation on The Design of Water Balance Covers for Solid Waste Landfills in Texas.” MS Thesis, University of Texas at Arlington, Spring 2012.
30. Ahmad, Faisal. (2012). “Engineering Characteristics of Recycled Plastic Pin, Wood Lumber and Bamboo for Soil Slope Stabilization.” MS Thesis, University of Texas at Arlington, Summer 2012.
31. Sinavesan, Yoga (2012). “Effect of Saline Water on Landfill Gas Generation of Municipal Solid Waste.” MS Thesis, University of Texas at Arlington, Summer 2012.
32. Gangopadhyay, Meenakshi (2012). “Effect of Nano Zero Valent Iron on Degradation of Municipal Solid Waste in Bioreactor Landfills” MS Thesis, University of Texas at Arlington, Summer 2012.
33. Khan, Sadik. (2011) “Evaluation of Unknown Foundation Depth by using Resistivity Imaging.” MS Thesis, University of Texas at Arlington, Summer 2011.
34. Kibria, Golam. (2011) “Determination of Geotechnical Properties of Clayey Soils from Resistivity Imaging.” MS Thesis, University of Texas at Arlington, Summer 2011.
35. Samir, Sonia. (2011) “Characteristics and Evaluation of Gas Potential of Municipal Solid Waste from a Closed Section of a Landfill.” MS Thesis, University of Texas at Arlington, Summer 2011.
36. Taufiq, T. (2010). “Characteristics of Fresh Municipal Solid Waste” M.S. Thesis, University of Texas at Arlington, Spring 2010.
37. Manzur, S. (2010) “Effect of Leachate Recirculation on Methane Generation for Bioreactor Landfill”. M.S. Thesis, University of Texas at Arlington, Summer 2010.
38. Mahmood, T. (2009). “Failure Analysis of a Mechanically Stabilized Earth (MSE) Wall using Finite Element Program PLAXIS.” M.S. Thesis, University of Texas at Arlington, Spring 2009.
39. Hossain, J. (2009). “Development of Brownfield Database using GIS.” M.S. Thesis, University of Texas at Arlington, Summer 2009.
40. Fujimoto, K. (2009). “Application of the Resistivity Imaging Method to Identify Seepage Flow Paths Case Study: Lewisville Dam, Lewisville, TX”. M.E. Project. Spring 2009.
41. Hubbard, J. (2009) “Use of Electrical Resistivity and Multichannel Analysis of Surface Wave Geophysical Tomography in Geotechnical Site Characterization of Dam”. M.S. Thesis, University of Texas at Arlington, Fall 2009.
42. Dharmateja, M. (2008). “Assessment of Geo-hazard Potential and Site Investigations using High Resolution Resistivity (HRR) Equipment” M.S. Thesis, University of Texas at Arlington, Spring 2008.
43. Penmethsa, K. (2007). “Permeability of Municipal Solid Waste in Bioreactor Landfill with Degradation.” M.S. Thesis, University of Texas at Arlington, Spring 2007.
44. Krishna, T. (2006). “Numerical Modeling and Analyses of Pile Supported Embankments.” M.S. Thesis, University of Texas at Arlington.

### **M.E. Advised**

1. Kibru, A. (2012). M.E. Student (Course Work), University of Texas at Arlington.
2. Killic, D. (2013). M.E. Student (Course Work), University of Texas at Arlington.

3. Haile, S. (2013). M.E. Student (Course Work), University of Texas at Arlington.
4. Tran, S. (2015). M.E. Student (Course Work), University of Texas at Arlington.
5. Wong, H. K. (2015). M.E. Student (Course Work), University of Texas at Arlington.
6. Folden, M. (2015). M.E. Student (Course Work), University of Texas at Arlington.
7. Weldemichael, Y. O. (2015). M.E. Student (Course Work), University of Texas at Arlington.
8. Bolla, K (2016). M.E. Student (Course Work), University of Texas at Arlington.
9. Anjum, Z (2016). M.E. Student (Course Work), University of Texas at Arlington.
10. Nezhad, E. H. (2017). M.E. Student (Course Work), University of Texas at Arlington.
11. Sangeeta B. (2018). M.E. Student (Course Work), University of Texas at Arlington.
12. Farnaz S. (2020). M.E. Student (Course Work), University of Texas at Arlington.
13. Maisha M. (2022). M.E. Student (Course Work), University of Texas at Arlington.
14. Homa Hadi (2023). M.E. Student (Course Work), University of Texas at Arlington.

### **Current Research Team**

### **Post-Doctoral Research Associate**

### **Ph.D. Students**

1. Sehneela Sara Aurpa – Started Fall 2021
2. Ishraq Faruk – Started Fall 2021
3. Md Lutfor Rahman – Started Fall 2021
4. S.M. Ashik Al Aziz Alif – Started Summer 2022
5. Rosabelle Louise Caram – Started Fall 2023

### **M.S. /M.E. Students**

1. Naveed Anjum – Started Summer 2022
2. Sayed Golam Rabby – Started Fall 2022
3. S.M. Shafquat Alam – Started Fall 2022
4. Venkatesh Kasaraneni – Started Fall 2022
5. Sadman Hossain – Started Spring 2023
6. Mahla Majidi – Started Spring 2023
7. Pardhiv Narendra Bandaru - Started Spring 2023
8. Pavan Kumar – Started Spring 2023

9. Mustafa Tabassum – Started Summer 2023
10. Amena Begum – Started Fall 2023
11. Merina Thapa - Started Fall 2023
12. Ankita Khadka - Started Fall 2023

## **Undergraduate Students**

### **Publications**

#### **Submitted / Under Review**

##### **Journal Papers**

1. Islam, M.A., Hossain, M.S., Badhon, F.F. and Bhandari, P. (2023) Analytical and Field Investigation for Evaluating Load Transfer in Recycled-Plastic-Pin Supported Embankment, *Geomechanics and Geoengineering*. (Under Review)

#### **Accepted and Published**

##### **Journal Papers**

1. Latif, M.B., Islam, M.A., Hossain, M.S. and Aurpa, S.S. (2023) Effect of Sludge Content on the Decomposition of Different types of Food Waste, *Sustainability*.
2. Badhon, F.F., Islam, M.A., Bhandari, P., and Hossain, M.S. (2023) Performance of Recycled Plastic Pins for Improving Unsuitable Foundation Soil, *Transportation Research Record*. (Accepted)
3. Aurpa, S.S., Hossain, M.S. and Islam, M.A. (2022) Effect of Plastic Waste on Volume Consumption of Landfill during the COVID-19 Pandemic, *Sustainability*, 14(3), 15974.
4. Islam, M. A., Hossain, M. S., Badhon, F. F., & Bhandari, P. (2022). Numerical Study of Recycled-Plastic-Pin- and Geosynthetic-Platform-Supported Embankment over Soft Soil. *Transportation Research Record*, 03611981221086624.
5. Bhandari, P., Hossain, M. S., Islam, M. A., & Badhon, F. F. (2022). Controlling Base Movement of MSE Walls Using Recycled Plastic Pins. *Transportation Geotechnics*, 32, 100707.
6. Pandey, P., Hossain, M. S., & Ahmed, A. (2021). Performance Evaluation of Modified Moisture Barrier in Mitigating Expansive Soil Associated Pavement Distresses. *Transportation Geotechnics*, 31, 100667.
7. Khan, M. S., Hossain, M. S., & Nobahar, M. (2021). Stabilization of the Highway Slope using Recycled Plastic Pins. *Transportation Research Record*, 2675(9), 1331-1344.
8. Islam, M.A., Hossain, M.S., Badhon, F.F. and Bhandari, P. (2021). "Performance Evaluation of Recycled-

- Plastic-Pin-Supported Embankment over Soft Soil.” In *Journal of Geotechnical and Geoenvironmental Engineering*, 147 (6).
9. Ahmed, A., Khan, M.S., Hossain, M.S., Sadigov, T., & Bhandari, P. (2020). Safety prediction model for reinforced highway slope using a machine learning method. *Transportation research record*, 2674(8), 761-773.
  10. Imtiaz, T., Ahmed, A., Hossain, M.S., Faysal, M. (2020). “Microstructure Analysis and Strength Characterization of Recycled Base and Sub-Base Materials Using Scanning Electron Microscope.” *Infrastructures* 2020, 5, 70.
  11. Hossain, M.S. and Sapkota, A. (2020). “Waste Management Trends in Africa,” the Magazine for Environmental Managers, A&WMA, January 2020.
  12. Hossain, M.S. and Sattler, M. (2020). “Landfill Mining – A Step Towards Sustainable Landfills”, the Magazine for Environmental Managers, A&WMA, July 2020.
  13. Rahimi, H., Sattler, M., Hossain, M.S., Rodrigues, J.L. (2020). “Boosting landfill gas production from lignin-containing wastes via termite hindgut microorganism”, *Waste Management*, Elsevier, Vol 105, March 2020.
  14. Hedayati, M., Ahmed A., Hossain M.S., Hossain, J. and Sapkota, A. (2020). “Evaluation and comparison of in-situ soil water characteristics curve with laboratory SWCC curve.” In *Transportation Geotechnics*. [doi.org/10.1016/j.trgeo.2020.100351](https://doi.org/10.1016/j.trgeo.2020.100351).
  15. 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.
  16. 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](https://doi.org/10.1177/0361198118772960).
  17. Kibria, G., Hossain M.S., and Khan M.S. (2018). “Determination of Consolidation Properties using Electrical Resistivity.” *Journal of Applied Geoscience*, 152(2018), 150-160.
  18. Mahedi, M., Hossain, M.S., Faysal, M., and Khan, M.S. (2017). “Potential Applicability of Impact Echo Method on Pavement Base Materials as a Nondestructive Testing Technique.” *Transportation Research Record: Journal of the Transportation Research Board*, (2657), 47-57.
  19. Kibria, G., and Hossain, M.S. (2017). “Electrical resistivity of compacted clay minerals.” *Environmental Geotechnics*, 6(1), 18-25.
  20. Kibria, G., and Hossain, M. S. (2017). “Evaluation of Corrosion Potential of Subsoil Using Geotechnical Properties.” *Journal of Pipeline Systems Engineering and Practice*, 9(1), 04017033.
  21. Khan, M. S., Hossain, M. S., Ahmed, A. and Faysal, M. (2016). “Investigation of a Shallow Slope Failure on Expansive Clay in Texas.” *Engineering Geology*, Volume 219, Pages 118–129.
  22. Kibria, G. and Hossain, M.S. (2016). “Quantification of Degree of Saturation at Shallow Depths of Earth Slopes using Resistivity Imaging Technique.” *Journal of Geotechnical and Geoenvironmental Engineering*, Volume 142, Issue 7, ASCE. [10.1061/\(ASCE\)GT.1943-5606.0001476](https://doi.org/10.1061/(ASCE)GT.1943-5606.0001476) , 06016004.
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### **Peer Reviewed Geotechnical Special Publications**

1. Aurpa, S. S., Bhandari, P. Rahman, L., Ahmed, Z. and Hossain, M. S. (2023) Long Term Performance of Recycled Plastic Pins in Increasing the Base Resistance of MSE Wall Base. In *Geo-Congress 2023* (Accepted)
2. Islam, M. A., Aurpa, S. S., Masiyat, M. and Hossain, M. S. (2023) Case History of Recycled Plastic Pins Supported Embankment on a Soft Clay overlying Shale in Texas. In *Geo-Congress 2023* (Accepted)
3. Akhtar, M. A., Mahjabin, S., Hossain, M. S., Mina, Z., & Hossain, M. I. Characterization of Eagle Ford Shale by Using Laboratory Electrical Resistivity Imaging. In *Geo-Congress 2022* (pp. 159-168).

4. Badhon, F.F., Bhandari, P., Islam, M.A. and Hossain, M.S. (2022). "Comparison between Field Study and Numerical Analysis Results for Recycled Plastic Pin (RPP) Reinforced Foundation System." In Geo-Congress 2022 (pp. 426-435).
5. Bhandari, P., Islam, M.A., Badhon, F.F. and Hossain, M.S. (2022). "Controlling Sliding Failure of MSE Wall Using Recycled Plastic Pins." In Geo-Congress 2022 (pp. 416-425).
6. Madanayake, S., Manjur Dola, M., & Hossain, M. S. Recycled Plastic Pins for General Slope Failures—A Case Study. In Geo-Congress 2022 (pp. 199-207).
7. Sakib, S., Islam, M. A., & Hossain, M. S. Assessment of the Seasonal and Spatial Variation in Shear Strength of High Plasticity Clay on Highway Slopes Using DCP Tests. In Geo-Congress 2022 (pp. 524-533).
8. Alam, M. J. B., Rahman, N., Seraj, F., & Hossain, M. S. Monitoring and Evaluation of Evapotranspiration of Water Balance Cover. In IFCEE 2021 (pp. 169-178).
9. Alam, M. J. B., Rahman, N., Bhandari, P., & Hossain, M. S. Behavior of Unsaturated Hydraulic Conductivity of Water Balance Cover Measured through Field Instrumentation. In IFCEE 2021 (pp. 330-338).
10. Bhandari, P., Zaman, M. N. B., Islam, M. A., Badhon, F. F., & Hossain, M. S. (2021). Increasing shearing resistance of MSE wall base using recycled plastic pins. In IFCEE 2021 (pp. 44-54).
11. Azijul Islam, M., Basit Zaman, M. N., Fahim Badhon, F., Bhandari, P., & Hossain, M. S. Numerical Modeling of Recycled Plastic Pin Reinforced Embankment over Soft Soils. In IFCEE 2021 (pp. 541-550).
12. Badhon, F. F., Zaman, M. N. B., Bhandari, P., Islam, M. A., & Hossain, M. S. (2021). Performance of recycled plastic pins for improving the bearing capacity of MSE wall foundation. In IFCEE 2021 (pp. 521-529).
13. Islam, M. A., & Hossain, M. S. (2021). Effect of Rainfall Intensity and Duration on the Highway Slopes Reinforced with Recycled Plastic Pin. In IFCEE 2021 (pp. 206-216).
14. Bhandari, P., Rauss, C., Sapkota, A., and Hossain, M.S. (2020, February). "Long Term Performance of Shallow Slopes Stabilized with Recycled Plastic Pins." In Geo-Congress 2020: Engineering, Monitoring, and Management of Geotechnical Infrastructure (pp. 163-172). Reston, VA: American Society of Civil Engineers.
15. Alam, M.J.B., Sarker, L., Sapkota, A., Ahmed, R., and Hossain, M.S. (2020, February). "Evaluation of Soil Water Storage (SWS) of Evapotranspiration Cover through Geophysical Investigation." In Geo-Congress 2020: Modeling, Geomaterials, and Site Characterization (pp. 444-453). Reston, VA: American Society of Civil Engineers.
16. Alam, M.J.B., DeVries, B., Rahman, N., and Hossain, M.S. (2019, March). "Field Hydrologic Performance of Water Balance Cover in North Texas." In Geo-Congress 2019: Geoenvironmental Engineering and Sustainability (pp. 95-104). Reston, VA: American Society of Civil Engineers.
17. Alam, M.J.B., and Hossain, M.S. (2019, March). "Evaluation of Post-Construction Changes in Soil Hydraulic Properties through Field Instrumentation and In Situ Testing." In Geo-Congress 2019: Geotechnical Materials, Modeling, and Testing (pp. 722-732). Reston, VA: American Society of Civil Engineers.
18. Alam, M.J.B., Hossain, M.S., Sarkar, L., and Rahman, N. (2019, March). "Evaluation of Field Scale Unsaturated Soil Behavior of Landfill Cover through Geophysical Testing and Instrumentation." In Geo-Congress 2019: Geoenvironmental Engineering and Sustainability (pp. 1-11). Reston, VA: American Society of Civil Engineers.
19. Hoyos, L., Alam, M.J.B., Hossain, M.S., and Haney, B. (2019, March). "Monitoring Seasonal Variation of Soil Hydraulic Conductivity of Evapotranspiration (ET) Cover." In Geo-Congress 2019: Geoenvironmental Engineering and Sustainability (pp. 72-81). Reston, VA: American Society of Civil Engineers.

20. Bhandari, P., Timsina, S., Ahmed, A., Hossain, M.S. and Thian, B. (2019). "Development of Strength Prediction Model for Recycled Base Materials with Soil Intrusion." In *Geo-Congress 2019: Geotechnical Materials, Modeling, and Testing* (pp. 204-213). Reston, VA: American Society of Civil Engineers.
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22. 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." In *Geo-Congress 2019: Embankments, Dams, and Slopes* (pp. 237-246). Reston, VA: American Society of Civil Engineers.
23. 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." In *Geo-Congress 2019: Geotechnical Materials, Modeling, and Testing* (pp. 347-356). Reston, VA: American Society of Civil Engineers.
24. 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.*
25. 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.*
26. Ahmed, A., Hossain, M. S., Khan, M. S., Greenwood, K. and Shishani, A. (2017, July). "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.
27. Mahedi, M., Hossain, S., Faysal, M., Khan, M. S. and Ahmed, A. (2017, July). "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.
28. Khan, M. S., Hossain, M. S., Khan, M. A. and Faysal, M. (2017, July). "Performance of Recycled Plastic Pin (RPP) for Slope Stabilization." In *International Congress and Exhibition Sustainable Civil Infrastructures: Innovative Infrastructure Geotechnology*" (pp. 136-148). Springer, Cham.
29. Salah, S. B., Hossain, S., Faysal, M., Khan, M. S. and Flores, C. M. (2017, July). "Effect of Wet-Dry Cycle on Durability of Cement-Stabilized Recycled Pavement Base Aggregates." In *International Congress and Exhibition Sustainable Civil Infrastructures: Innovative Infrastructure Geotechnology*" (pp. 98-114). Springer, Cham.
30. Ahmed, A., Hossain, M.S., Khan, M.S., and Alam J. (2017). "Moisture Distribution in Unsaturated Subgrade through Field Instrumentation and Numerical Modeling." *Second Pan-American Conference on Unsaturated Soils. November 12-15, Dallas, Texas. Paper accepted.*
31. Alam J. Hossain, M.S., Khan, M.S., and Ahmed A. (2017). "Comparison of Percolation of Flat and Slope Section Vegetated Lysimeters Using Field Soil Water Characteristic Curve." *Second Pan-American Conference on Unsaturated Soils. November 12-15, Dallas, Texas. Paper accepted.*
32. Alam, M.Z., Samir, S., Hossain, M.S., and Ahmed, A. (2017) "Frequency of Leachate Recirculation for Successful Bioreactor Landfill Operation", *Geofrontier*, 2017.



33. Khan, M.A., Hossain, M.S., Khan, M.S, Samir, S. and Aramoon Al (2017), "Stress-Strain Characteristics of High PI Clay with the Variation of Wetting and Drying Cycle", Geotechnical Frontiers, Orlando, Florida, USA.
34. Faysal, M., Hossain, M.S., Bhattecharjee, S., Salah, S.B. (2017), "Characterization of Geo-environmental Properties of Using Untreated or Cement Treated Recycled Base Materials in Pavement Base Layer Applications", Geotechnical Frontiers, Orlando, Florida, USA.
35. Khan, M.A., Hossain, M.S., Faysal, M., Samir, S., Aramoon, Al and Khan, M.S (2017), "Determination of Fully Softened Strength of High PI Clay for Shallow Slope Failure Occurred within DFW Area", Geotechnical Frontiers, Orlando, Florida, USA.
36. 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.
37. Faysal, M., Mahedi, M., Aramoon, A., Thian, B., Hossain, M. S., & Khan, M. S. (2016). Strength Characterization of Untreated and Cement-Treated Recycled Flex-Base Materials. In Geotechnical and Structural Engineering Congress 2016 (pp. 1233-1244).
38. Faysal, M., Mahedi, M., Hossain, M.S., Aramoon, A., and Thian, B., Khan, M.A. and Khan, M.S. (2016). Determination of Structural Coefficient of Different Combinations of Cement Treated / Untreated Recycled Base Materials. Geotechnical and Structural Engineering Congress, February 14-17, Phoenix, Arizona.
39. Hossain, M.S. and Kibria, G. (2014). "A Statistical Model to Correlate Geotechnical Properties with Electrical Resistivity of Clayey Soil" GeoHubei, 2014, July 20-22, Hubei, China.
40. Hossain, M.S. and Kibria, G. (2014). "A Study on the Electrical Resistivity Responses of Different Clay Minerals" GeoHubei, 2014, July 20-22, Hubei, China.
41. Hossain, M.S. and Samir, S. (2014). "Evaluation and Applicability of Flame Ionization Detector (FID) for Fugitive Emission" GeoCongress, 2014, February 22-25, Atlanta, Georgia.
42. Hedayati, M., Hossain, M.S., Mehdibeigi, A. and Thian, B. (2014). "Modeling of Moisture Distribution for Sustainable Pavement Design." GeoCongress, 2014, February 22-25, Atlanta, Georgia.
43. Khan, M.S., Hossain, M.S., Lozano, N. and Kibria, G. (2014) "Temporary Lateral Support of a Concrete Retaining Wall Footing using Recycled Plastic Pin", GeoCongress, 2014, February 22-25, Atlanta, Georgia.
44. Khan, M.S., Hossain, M.S. and Lozano, N. (2014) "A Numerical Study on Slope Stabilization using Recycled Plastic Pin", GeoCongress, 2014, February 22-25, Atlanta, Georgia.
45. Kibria, G, Hossain, M.S. and Ali, A. (2014). "An Innovative Approach of Soil Characterization using X-Ray Computed Tomography (CT)" GeoCongress, 2014, February 22-25, Atlanta, Georgia.
46. Hossain, M.S., Kibria, G. and Lozano, N. (2014). "Determination of Depth and Discontinuity of Hard Limestone Stratum using Resistivity Imaging (RI)." GeoCongress, 2014, February 22-25, Atlanta, Georgia.
47. Kibria, G. and Hossain, M.S. (2014). "Effects of Bentonite Contents on Electrical Resistivity of Soils" GeoCongress, 2014, February 22-25, Atlanta, Georgia.
48. Hossain, J., Hossain, M.S., and Hoyos, L.R. (2013). "Effect of Rainfall on Stability of Unsaturated Earth Slopes Constructed on Expansive Clay." Geo Congress 2013, San Diego, California, March 3 - 6, 2013.
49. Hossain, M.S., Khan, M.S., Hossain, J., Kibria, G. and Lozano, N (2013). "Performance Evaluation of a Slope Reinforced with Recycled Plastic Pin." Geo Congress 2013, San Diego, California, March 3 - 6, 2013.

50. Kibria, G., Hossain, M.S., Hossain, J., Khan, M.S., (2012) "Determination of Moisture Content and Unit Weight of Clayey Soil from Resistivity Imaging (RI)." Geotechnical Special Publication – 225, pg. 3398-3407, GeoCongress 2012, Oakland, California, March 25-29, 2012.
51. Kibria, G., Hossain, M.S., Hossain, J., Khan, M.S., (2012) "Investigation of Moisture Variation of Backfill Soil in MSE wall." Geotechnical Special Publication – 225, pg. 2629- 2638, GeoCongress 2012, Oakland, California, March 25-29, 2012.
52. Hossain, M.S., Hossain, J., Khan, M.S., Kibria, G., (2012) "Determining Unknown Bridge Foundation depth by resistivity imaging method." Geotechnical Special Publication – 225, pg. 275-284, GeoCongress 2012, Oakland, California, March 25-29, 2012.
53. Hossain, M.S., Hossain, J., Lozano, N., Khan, M.S., and Kibria, G. (2012). "Investigation of Geohazard Potential of Highway Embankment Slopes on Expansive Clay by using Geophysical Method." Geotechnical Special Publication – 225, pg. 634-642, GeoCongress 2012, Oakland, California, March 25-29, 2012.
54. Hossain, J. and Hossain, M.S., (2012). "Numerical Modeling for Remedial Measures of Shallow Slope Failure using Recycled Plastic Pins." Geotechnical Special Publication – 225, pg. 3739-3746, GeoCongress 2012, Oakland, California, March 25-29, 2012.
55. Hossain, M.S., Manzur, S.R., Kemler, V., and Dugger, D. (2012). "Field Evaluation of Permeable Blanket for Leachate Recirculation in an ELR Landfills." Geotechnical Special Publication – 225, GeoCongress 2012, pg. 3603-3612, Oakland, California, March 25-29, 2012.
56. Manzur, S.R., Hossain, M.S., Kemler, V., and Dugger, D. (2012). "The Performance Evaluation of Horizontal Gas Collection System in an ELR Landfill." Geotechnical Special Publication – 225, pg. 3613-3623, GeoCongress 2012, Oakland, California, March 25-29, 2012.
57. Hoyos, L.R., Velosa, C., Puppala, A.J., and Hossain, S. (2010). "A Novel Suction-Controlled Ring Shear Apparatus for Modeling Unsaturated Soil Response Under Large Deformations," GeoShanghai 2010 International Conference, June 3-5, 2010, Shanghai, China.
58. Hoyos, L.R., Velosa, C., Puppala, A.J., and Hossain, S. (2010). "Modeling Unsaturated Soil Response Under Large Deformations Using A Novel Suction-Controlled Ring Shear Device," UNSAT 2010: Fifth International Conference on Unsaturated Soils, September 6-8, 2010, Barcelona, Spain.
59. Hossain, M.S., Gabr, M.A. and Haque, M.A. (2008). "Deformation and Stability of MSW Bioreactor Landfills: Properties and Analysis Approach" Geotechnical Special Conference, GeoCongress 2008, March 9 – 12, 2008, New Orleans, Louisiana.
60. Hossain, M.S., Hoyos, L.R. and Penmethsa, K. (2008). "Permeability of Municipal Solid Waste in Bioreactor Landfill with Degradation" Geotechnical Special Conference, GeoCongress 2008, March 9 – 12, 2008, New Orleans, Louisiana.
61. Hoyos, L.R., Puppala, A and Hossain, M.S. (2008). "Engineering Characterization of Cement-Fiber Treated RAP Aggregates" Geotechnical Special Conference, GeoCongress 2008, March 9 – 12, 2008, New Orleans, Louisiana.
62. Hoyos, L.R., Takkabutr, P., Puppala, A.J., and Hossain, M.S. (2008). "Dynamic response of unsaturated soils using resonant column and bender element techniques". GEESD IV: 4th Geotechnical Earthquake Engineering and Soil Dynamics Conference, May 18-22, 2008, Sacramento, California.
63. Hossain, M.S., Omelchenko, V. and Haque, M.A. (2007). "Capacity of Rock Socketed Drilled Shafts in Mid-Atlantic Region" Geotechnical Special Conference, GeoDenver, February 18-21, 2007, Denver, Colorado.

64. Branch, A. and Hossain, M.S. (2007). "Seepage Analyses of Soil-Bentonite Slurry Cutoff Wall through Landfill" Geotechnical Special Conference, GeoDenver, February 18-21, 1007, Denver, Colorado.
65. Hossain, M.S., Rao, K.N., and Haque, M.A. (2006). "Embankment over Soft Soil Improved with Chemico Pile – A Numerical Study" Geo Shanghai, in Shanghai, China, June 2-4, 2006.
66. Hossain, M.S., and Gabr, M.A (2005). "Prediction of Municipal Solid Waste Landfill Settlement with Leachate Recirculation", Geotechnical Special Publication - 142, Waste Containment and Remediation, Geo-frontiers 2005 at Austin, Texas, January 24-26, 2005.
67. Kim, K.J., Rahman, M.S., Gabr, M.A., Sarica, R.Z. and Hossain, M.S. (2005). "Reliability Based Calibration of Resistance Factors for Axial Capacity of Driven Piles", Geotechnical Special Publication - 132, Advances in Deep Foundations, Geo-frontiers 2005 at Austin, Texas, January 24-26, 2005.

### **Peer Reviewed Conference Publications**

1. Sapkota, A., Hossain, M.S., Ahmed, A., and Pandey, P. (2019). "Effect of Modified Moisture Barrier on the Slope Stabilized with Recycled Plastic Pins." 98<sup>th</sup> Annual Meeting of Transportation Research Board, Washington D.C.
2. Ahmed, R., Kataria, A., Alam, M.J., and Hossain, M.S. (2018). "Energy Potential of Landfill Mined Solid Waste." 7<sup>th</sup> international symposium on energy from biomass and waste. October 15-18, Venice, Italy.
3. 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. 97<sup>th</sup> Annual Meeting of Transportation Research Board, Washington D.C.
4. Ahmed A., Hossain M.S., and Khan M.S. (2018). Unsaturated Hydraulic Properties and Suction Variation on a Pavement Subgrade over Expansive Soil. Proc. 97<sup>th</sup> Annual Meeting of Transportation Research Board, Washington D.C.
5. Hedayati, M., Ahmed A., Hossain M.S. and Hossain J. (2018). Measurement of In-Situ Soil Water Characteristics Curve Using Data Analysis. Proc. 97<sup>th</sup> Annual Meeting of Transportation Research Board, Washington D.C.
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7. 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.
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### **Research Reports**

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13. Hossain, M.S. (2021) "Monitoring Performance of Modified Moisture Barrier to Enhance the Serviceability of Pavement". - Interim Report Submitted to Texas Department of Transportation (TxDOT), Dallas District. February 2021. Number of Pages: 36.
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41. Hossain, M.S., Ahmed, A., Sapkota, A. and Pandey, P. (2018) "Stabilization of Rainfall-Induced Slope Failure using Recycled Plastic Pins and Modified Moisture Barrier". - Final Report Submitted to Texas Department of Transportation (TxDOT), Dallas District. September 2018. Number of Pages: 152.
42. Hossain, M.S., Ahmed, A., Khan, M.A., Zaman, M.N.B, McCollough, M., Rauss, C. and Sapkota, A. (2017) "Monitoring Stabilized Slope at West Highway 287, US 183 and I-35 (near Mockingbird Road)". - Interim Report Submitted to Texas Department of Transportation (TxDOT), Dallas District. August 2017. Number of Pages: 36.
43. Hossain, M.S., Zaman, M.N.B, Timsina, S., Rauss, C., Wallace, E and Asif, A. (2017) "Evaluation of the effect of soil intrusion in untreated and cement - treated granular bases for Pavement Section at Horseshoe Project and I35 (Lab Testing on Recycled Base Materials)". - Interim Report Submitted to Texas Department of Transportation (TxDOT), Dallas District. August 2017. Number of Pages: 29.
44. Hossain, M.S., Ahmed, A., Khan, M.A., Zaman, M.N.B, McCollough, M., Rauss, C. and Sapkota, A. (2017) "Slope Stabilization Using Recycled Plastic Pin at US 287, South near to the Old Fort Worth Road". - Interim Report Submitted to Texas Department of Transportation (TxDOT), Dallas District. August 2017. Number of Pages: 30.
45. Hossain, M.S., Ahmed, A., Khan, M.A., Zaman, M.N.B, McCollough, M., Rauss, C. and Sapkota, A. (2017) "Monitoring Stabilized Slope at West Highway 287 Near Davis Road and SH 360". - Interim Report Submitted to Texas Department of Transportation (TxDOT), Dallas District. August 2017. Number of Pages: 20.
46. Hossain, M.S., Ahmed, A., Khan, M.A., Zaman, M.N.B, McCollough, M., Rauss, C. and Sapkota, A. (2017) "Utilization of Recycled Plastic Pins for (a) Increasing the Bearing Capacity of Foundation Soil and (b) Increasing Shearing Resistance of MSE Wall Base under". - Interim Report Submitted to Texas Department of Transportation (TxDOT), Dallas District. August 2017. Number of Pages: 50.
47. Hossain, M.S., Ahmed, A., Khan, M.A., McCollough, M., Rauss, C. and Greenwood, K. (2017) "Monitoring Performance of Modified Moisture Barrier to Enhance the Serviceability of Pavement". - Interim Report Submitted to Texas Department of Transportation (TxDOT), Dallas District. August 2017. Number of Pages: 34.
48. Hossain, M.S., Alam, M. J. B., Hossain, M.I., Hoyos, L. and Rauss, C. (2017) "Performance Monitoring and Evaluation of Evapotranspiration (ET) Cover System, City of Denton Landfill, Texas". - Draft Final Report Submitted to Solid Waste Department, City of Denton, Texas. May 2017. Number of Pages: 137.
49. Hossain, M.S. and Rahman, N. (2017) "Sustainable Waste Management – Biocell Installation and Monitoring,

City of Denton Landfill, Texas”. - Annual Report Submitted to Solid Waste Department, City of Denton, Texas. June 2017. Number of Pages: 62.

50. Hossain, M.S., Alam, M. J. B., Ahmed, R., Oyshi, F. H, Hoyos, L. and Rauss, C. (2017) “Evapotranspiration (ET) Cover Study for City of Irving, Texas”. - Draft Final Report Submitted to Solid Waste Department, City of Irving, Texas. April 2017. Number of Pages: 61.
51. Hossain, M.S., Alam, M. Z., Rahman, N., Ahmed, R., Nezhad, E.H. and Zakira, U. (2016) “Sustainable Waste Management – Landfill Mining Operation and Monitoring”. - Annual Report Submitted to Solid Waste Department, City of Denton, Texas. October 2016. Number of Pages: 61.
52. 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.
53. 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.
54. 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.
55. 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.
56. Hossain, M.S., Sonia, S., Alam, Z., Tiwari, D., Hossain, M.I., Rahman, N., Dhar, A., Alam, M.J.B., Joy, D.M., Tiwary, A.R. and Zaman, M.N.B (2015) “Efficiency of Leachate Recirculation and Gas Collection Systems for the City of Denton Landfill, Texas”. Draft Final Report Submitted to Solid Waste Department, City of Denton, Texas. September 2015. Number of Pages: 301.
57. Hossain, M.S., Sonia, S., Rahman, N., Dhar, A., Tiwary, A.R., Zaman, M.N.B, Hossain, D. Z., Anjum, Z and Koganti, K. (2015) “Characteristics of Landfilled Municipal Solid Waste for Landfill Mining, City of Denton Landfill, Texas”. Summary Report Submitted to Solid Waste Department, City of Denton, Texas. April 2015. Number of Pages: 35.
58. Hossain, M.S., Sonia, S., Rahman, N., Dhar, A., Tiwary, A.R., Anjum, Z and Mitra. D. (2014) “Characteristics of Landfilled Municipal Solid Waste, City of Denton Landfill, Texas”. Summary Report Submitted to Solid Waste Department, City of Denton, Texas. December 2014. Number of Pages: 37.
59. Hossain, M.S., and Sonia, S. (2013) “Fugitive Emission Study for the City of Grand Prairie Landfill, Texas”. Report Submitted to Solid Waste Department, City of Denton and City of Grand Prairie, Texas. May 2013. Number of Pages: 10.
60. Hossain, M.S., Khan, S., Kibria, G., Sonia, S., Tiwari, D., and Alam, Z. (2013) “Investigation of Moisture Profile within the MSW at Cefe Valenzuela Landfill using Resistivity Imaging”. Report Submitted to Solid Waste Department, City of Corpus Christi, Texas. April 2013. Number of Pages: 39.
61. Hossain, M.S., Hossain, J., Kibria, G., Khan, M.S. (2013) “Slope Stability Analysis of the Failed Slope along Highway US 287 S near St. Paul Overpass and Proposed Remedial Measure” Interim Report 3: Monitoring -

- Submitted to Texas Department of Transportation (TxDOT), Dallas District. Number of Pages: 21. February 2013.
62. Hossain, M.S., Khan, M.S., Hossain, J., and Kibria, G. (2013) "Implementation of Slope Stabilization in Highway Loop 12 and US 287 slope using Recycled Plastic Pin" Interim Report 3: - Submitted to Texas Department of Transportation (TxDOT), Dallas District. Number of Pages: 33. February 2013.
  63. Hossain, M.S., Hedayati, M., Khan, M.S., and Kibria, G. (2013) "Monitoring Moisture Variation below Pavement and Determining the Performance of Pavements" Interim Report 3: - Submitted to Texas Department of Transportation (TxDOT), Dallas District. Number of Pages: 43. February 2013.
  64. Hossain, M.S., Hossain, J., Kibria, G., Khan, M.S. (2012) "Slope Stability Analysis of the Failed Slope along Highway US 287 S near St. Paul Overpass and Proposed Remedial Measure" Interim Report 2: Monitoring - Submitted to Texas Department of Transportation (TxDOT), Dallas District. Number of Pages: 29. September 2012.
  65. Hossain, M.S., Khan, M.S., Hossain, J., and Kibria, G. (2012) "Implementation of Slope Stabilization in Highway Loop 12 and US 287 slope using Recycled Plastic Pin" Interim Report 2: - Submitted to Texas Department of Transportation (TxDOT), Dallas District. Number of Pages: 23. September 2012.
  66. Hossain, M.S., Hedayati, M., Khan, M.S., and Kibria, G. (2012) "Monitoring Moisture Variation below Pavement and Determining the Performance of Pavements" Interim Report 2: - Submitted to Texas Department of Transportation (TxDOT), Dallas District. Number of Pages: 36. September 2012.
  67. Hossain, M.S., Hossain, J., Kibria, G., Khan, M.S. (2012) "Slope Stability Analysis of the Failed Slope along Highway US 287 S near St. Paul Overpass and Proposed Remedial Measure" Interim Report 1: Monitoring - Submitted to Texas Department of Transportation (TxDOT), Dallas District. Number of Pages: 40. May 2012.
  68. Hossain, M.S., Khan, M.S., Hossain, J., and Kibria, G. (2012) "Implementation of Slope Stabilization in Highway Loop 12 and US 287 slope using Recycled Plastic Pin" Interim Report 1: - Submitted to Texas Department of Transportation (TxDOT), Dallas District. Number of Pages: 85. May 2012.
  69. Hossain, M.S., Hedayati, M., Khan, M.S., and Kibria, G. (2012) "Monitoring Moisture Variation below Pavement and Determining the Performance of Pavements" Interim Report 1: - Submitted to Texas Department of Transportation (TxDOT), Dallas District. Number of Pages: 24. May 2012.
  70. Hossain, M.S., Sonia, S., Manzur, S., Tiwari, D., and Ahmed, F.S. (2012) "Efficiency of Leachate Recirculation System for the City of Denton Landfill, Texas". 12th Quarterly Report Submitted to Solid Waste Department, City of Denton, Texas. April 2012. Number of Pages: 58.
  71. Hossain, M.S., Sonia, S., Manzur, S., Tiwari, D., and Ahmed, F.S. (2012) "Efficiency of Leachate Recirculation System for the City of Denton Landfill, Texas". 11th Quarterly Report Submitted to Solid Waste Department, City of Denton, Texas. February 2012. Number of Pages: 57.
  72. Hossain, M.S., Manzur, S., Sonia, S., and Ahmed, F.S. (2011) "Efficiency of Leachate Recirculation System for the City of Denton Landfill, Texas". 10th Quarterly Report Submitted to Solid Waste Department, City of Denton, Texas. December 2011. Number of Pages: 55.
  73. Hossain, M.S., Manzur, S., Sonia, S., and Ahmed, F.S. (2011) "Efficiency of Leachate Recirculation System for the City of Denton Landfill, Texas". 9th Quarterly Report Submitted to Solid Waste Department, City of Denton, Texas. August 2011. Number of Pages: 64.
  74. Hossain, M.S., Taufiq, T., Manzur, S., Sonia, S., and Khan, S. (2011) "Efficiency of Leachate Recirculation System for the City of Denton Landfill, Texas". 8th Quarterly Report Submitted to Solid Waste Department, City

of Denton, Texas. June 2011. Number of Pages: 64.

75. Hossain, M.S., Hossain, J., Kibria, G., Khan, M.S., Samir, S. (2011) "Slope Stability Analysis of the Failed Slope along Highway US 287 S near St. Paul Overpass and Proposed Remedial Measure" Report Submitted to Texas Department of Transportation (TxDOT), Dallas District. Number of Pages: 154.
76. Hossain, M.S., Hossain, J., Kibria, G., Khan, M.S., Samir, S. (2011) "Slope Stability Analysis of the Failed Slope along IH 30 WB and Proposed Remedial Measure" Report Submitted to Texas Department of Transportation (TxDOT), Dallas District. Number of Pages: 83.
77. Hossain, M.S., Khan, M.S., Hossain, J. and Kibria, G. (2011) "Effect of Remolding on Shear Strength of High Plastic Clay Soil" Report Submitted to Texas Department of Transportation (TxDOT), Dallas District. Number of Pages: 89.
78. Hossain, M.S., Kibria, G., Hossain, J., Khan, M.S., Samir, S., (2011) "Determination of Geotechnical Properties of Clayey Soil from Resistivity Imaging (RI)" Report Submitted to Texas Department of Transportation (TxDOT), Dallas District. Number of Pages: 132.
79. Hossain, M.S., Taufiq, T., Manzur, S., Sonia, S., and Khan, S. (2011) "Efficiency of Leachate Recirculation System for the City of Denton Landfill, Texas". 7th Quarterly Report Submitted to Solid Waste Department, City of Denton, Texas. April 2011. Number of Pages: 83.
80. Hossain, M.S., (2010) "Slope Stability Analyses of the Failed Slope along South Bound IH 35E and Proposed Remedial Measure" Report Submitted to Texas Department of Transportation (TxDOT), Dallas District. Number of Pages: 40
81. Hossain, M.S., Hossain, J., Kibria, G., Khan, M.S., Samir, S., (2010) "Slope Stability Analysis of the Failed Slope along IH 30 WB and Proposed Remedial Measure" Interim Report Submitted to Texas Department of Transportation (TxDOT), Dallas District. Number of Pages: 116.
82. Hossain, M.S., Hossain, J., Khan, M.S., Kibria, G., Samir, S., (2010) "Stability Analysis of the MSE Wall on State Highway 342 (Dallas Avenue) at Lancaster, Texas" Interim Report Submitted to Texas Department of Transportation (TxDOT), Dallas District. Number of Pages: 56.
83. Hossain, M.S., Taufiq, T., Manzur, S., Sonia, S., and Khan, S. (2010) "Efficiency of Leachate Recirculation System for the City of Denton Landfill, Texas". Summary – 2nd Annual Report Submitted to Solid Waste Department, City of Denton, Texas. June 2011. Number of Pages: 17.
84. Hossain, M.S., Taufiq, T., Manzur, S., Sonia, S., and Khan, S. (2010) "Efficiency of Leachate Recirculation System for the City of Denton Landfill, Texas". 6th Quarterly Report Submitted to Solid Waste Department, City of Denton, Texas. December 2010. Number of Pages: 60.
85. Hossain, M.S., Taufiq, T., Manzur, S., Sonia, S., and Khan, S. (2010) "Efficiency of Leachate Recirculation System for the City of Denton Landfill, Texas". Summary - Annual Report Submitted to Solid Waste Department, City of Denton, Texas. September 2010. Number of Pages: 11.
86. Hossain, M.S., Taufiq, T., Manzur, S., Sonia, S., and Khan, S. (2010) "Efficiency of Leachate Recirculation System for the City of Denton Landfill, Texas". 5th Quarterly Report Submitted to Solid Waste Department, City of Denton, Texas. September 2010. Number of Pages: 67.
87. Hossain, M.S., Taufiq, T., Manzur, S., Sonia, S., and Khan, S. (2010) "Efficiency of Leachate Recirculation System for the City of Denton Landfill, Texas". 4th Quarterly Report Submitted to Solid Waste Department, City of Denton, Texas. July 2010. Number of Pages: 77.
88. Hossain, M.S., Taufiq, T., Manzur, S., Penmethsa, K. (2010) "Efficiency of Leachate Recirculation System for

the City of Denton Landfill, Texas". 3rd Quarterly Report Submitted to Solid Waste Department, City of Denton, Texas. February 2010. Number of Pages: 52

89. Hossain, M.S., Taufiq, T., Manzur, S., Penmethsa, K. (2009) "Efficiency of Leachate Recirculation System for the City of Denton Landfill, Texas". 1st Quarterly Report Submitted to Solid Waste Department, City of Denton, Texas. August 2009. Number of Pages: 58
90. Hossain, M.S., Taufiq, T., Manzur, S., Penmethsa, K. (2009) "Efficiency of Leachate Recirculation System for the City of Denton Landfill, Texas". 2nd Quarterly Report Submitted to Solid Waste Department, City of Denton, Texas. December 2009. Number of Pages: 58
91. Hossain, M.S., Hossain, J., (2009) "Assessment of the Condition of the Existing Pile Foundation for the Bridge over FM 916 using Resistivity Imaging" Report Submitted to Texas Department of Transportation (TxDOT), Fort Worth District. Number of Pages: 19
92. Hossain, M.S., Hossain, J., Khan, M.S., Kibria, G., Samir, S., (2010) "Determination of Unknown Bridge Foundation on Mountain Creek over FM 2738, Fort Worth, Texas" Report Submitted to Texas Department of Transportation (TxDOT), Fort Worth District. Number of Pages: 24.
93. Hossain, M.S., Hossain, J., (2009) "Determination of Depth of Hard Limestone Stratum using Resistivity Imaging" Report Submitted to Texas Department of Transportation (TxDOT), Bridge Section, Dallas District. Number of Pages: 28
94. Hoyos, L.R., Puppala, A.J., and Hossain, M.S. (2005). "Engineering properties of cemented fiber-reinforced recycled aggregate materials for base/sub-base applications in pavement engineering". Progress Report, Project # 26 7602 91, December 2005, Submitted to: Texas Industries Inc. (TXI), Dallas, Texas, 16 pp.
95. Hossain, M.S. (2007). "Assessment of Geo-hazard Potential and Site Investigations using High Resolution Resistivity (HRR) Equipment." Final Report, Submitted to the City of Duncanville, TX.

### **Presentations (Invited and Conference Presentations)**

1. Hossain, M.S. (2014). "Implementation of Enhanced Leachate Recirculation (ELR) Landfill in Texas" MSW Advisory Council of Texas Council of Environmental Quality (TCEQ), Austin, Texas, January 2014 - Invited Presentation.
2. Hossain, M.S. (2013). "Sustainable Waste Management" Le Tourneau University, Texas, March 2013 – Invited Presentation.
3. Hossain, M.S. (2013), "Site Investigations using Resistivity Imaging". Transportation Research Board's Soil and Rock Properties Committee - TRB 92nd Annual Meeting, January 14, 2013, Washington DC – Invited Presentation.
4. Hossain, M.S. (2013), "Site Investigations using Resistivity Imaging". Transportation Research Board's Geophysics Sub-Committee - TRB 92nd Annual Meeting, January 14, 2013, Washington DC – Invited Presentation.
5. \*Khan, S. and Hossain, M.S. (2013), "A Comparative Study on Compressive Strength of Recycled Plastic Pin, Wood Lumber and Bamboo at Different Environmental Conditions". TRB 92nd Annual Meeting, January 14, 2013, Washington DC.
6. Hossain, M.S. (2013), "Geophysical Investigation of Clay Properties using Resistivity Imaging". Transportation Research Board's Physicochemical and Biological Processes in Soils Committee - TRB 92nd Annual Meeting, January 14, 2013, Washington DC – Invited

7. Hossain, M.S. and \*Khan, S. (2013). "Performance Evaluation of a Slope Reinforced with Recycled Plastic Pin" Geo-Congress 2013, March 3 - 6, 2013, San Diego, CA.
8. Hossain, M.S. (2013). "Forensic Evaluation and Condition Assessment of Geo- Structures using Non-Destructive Testing", National Foundation Performance Association, Houston, Texas, – April 2013 – Invited Presentation.
9. Hossain, M.S. (2013). "Site Investigation Approach for Landfill Mining." ISWA Beacon Conference - The 2nd International Conference on Final Sinks, 16-18 May 2013 in Espoo, Finland.
10. \*Samir, S. and Hossain, M.S. (2013) "Feasibility of Landfill Mining and Reclamation in a Closed Landfill" Annual Celebration of Excellence by students (ACES) symposium, University of Texas at Arlington, TX, 2013.
11. \*Samir, S. and Hossain, M.S. (2013). "Effect of Saline Water on Decomposition and Landfill Gas Generation of Municipal Solid Waste." TxSWANA 2013, Lubbock, Texas, April 15-17.
12. Hossain, M.S. (2013). "Effect of Nano Zero Valent Iron on Waste Processing in Bioreactor Landfills." ISWA Beacon Conference - The 2nd International Conference on Final Sinks, 16- 18 May 2013 in Espoo, Finland – Invited Presentation.
13. Hossain, M.S. (2013). "Landfill Mining – An Emerging Approach toward Sustainable Waste Management" TxSWANA Annual Meeting in Lubbock, Texas April 2013 — Invited Presentation.
14. Hossain, MS (2012). "Load Testing of Drilled Shaft in Mid-Atlantic Region, USA." DFI Conference, Dubai, March 13-14, 2012
15. Hossain, M.S. and \*Khan, S. (2012). "Determining Unknown Bridge Foundation depth by Resistivity Imaging (RI) method" Geo-Congress 2012, March 25 - 29, 2012, Oakland, CA.
16. \*Kibria, G, and Hossain, M.S. (2012) "Determination of Moisture content and Unit weight of Clayey Soils from Resistivity Imaging (RI)." Geo-Congress 2012, March 25 - 29, 2012, Oakland, CA.
17. \*Kibria, G, and Hossain, M.S. (2012) "Investigation of Moisture Variation of Backfill Soil in MSE wall." Geo-Congress 2012, March 25 - 29, 2012, Oakland, CA.
18. Hossain, M.S. and \*Khan, S. (2012). "Investigation of Geohazard Potential of Highway Embankment Slopes on Expansive Clay by using Geophysical Method." GeoCongress 2012, Oakland, California, March 25-29, 2012.
19. \*Hossain, J. and Hossain, M.S., (2012). "Numerical Modeling for Remedial Measures of Shallow Slope Failure using Recycled Plastic Pins." GeoCongress 2012, Oakland, California, March 25-29, 2012.
20. Hossain, M.S. and \*Manzur, S.R. (2012). "Field Evaluation of Permeable Blanket for Leachate Recirculation in an ELR Landfills." GeoCongress 2012, Oakland, California, March 25-29, 2012.
21. \*Manzur, S.R. and Hossain, M.S. (2012). "The Performance Evaluation of Horizontal Gas Collection System in an ELR Landfill." GeoCongress 2012, Oakland, California, March 25- 29, 2012.
22. \*Samir, S and Hossain, M.S. (2012). "Evaluation of Methane Generation Potential of MSW in a Closed Landfill." 27th International Conference on Solid Waste technology & Management, March 11-14, Philadelphia, PA, USA.
23. \*Samir, S. and Hossain, M.S. (2012). "Landfill Mining: Characteristics of Landfilled Solid Waste." TxSWANA 2012, Garland, Texas, June 12-15.
24. \*Baig, S. and Hossain, M.S. (2012). "Modeling of ET Cover in Texas." TxSWANA 2012, Garland, Texas, June 12-15.



25. Hossain, M.S. and \*Samir, S. (2012) "Effect of Saline Water on Decomposition and Landfill Gas Generation of Municipal Solid Waste". Global Waste Management Symposium, Phoenix, AZ, 2012.
26. Hossain, M.S. (2012). "Resistivity Imaging for Seepage Analyses and Site Investigations" US Army Corps of Engineers, Fort Worth, May, 2012 – Invited Presentation.
27. Hossain, M.S. (2012). "MSW Characteristics and Landfill Gas to Energy Project" City of Garland, Solid Waste Services, Garland, Texas June 2012 – Invited Presentation.
28. Hossain, M.S. (2012). "Implementation of Enhanced Leachate Recirculation (ELR) Landfill in Texas" TCEQ, December 2012 – Invited Presentation.
29. \*Karanjekar, R, Sattler, M., Hossain, S., Chen, V., Bhatt, A. and Altouqi, S. (2012) "An Improved Model to Predict Gas Generation from Landfills Based on Waste Composition, Rainfall and Ambient Temperature," Solid Waste Association of North America (SWANA) 35th Annual Landfill Gas Symposium, March 2012, Orlando, Florida.
30. \*Bhatt, A., Karanjekar, R., Altouqi, S., Sattler, M., Hossain, M.S., and Chen, V. (2012) "Development of Regression Equations for Predicting Leachate Parameters from Landfills." 105th Annual Conference of the Air & Waste Management Association, San Antonio, Texas, June 2012.
31. \*Karanjekar, R, Gandhi, A., Sattler, M., Hossain, M.S. and Chen, V. (2011), "An Improved Model to Predict Gas Generation from Landfills based on Waste Composition, Rainfall and Ambient Temperatures", 26th International Conference on Solid Waste Management & Technology, March 27-30, pg. 640-651.
32. \*Manzur, S.R. and Hossain, M.S. (2011). "Application of Shredder Tires as Drainage Material in Enhanced Leachate Recirculation (ELR) Landfill". 26th International Conference on Solid Waste technology & Management, March 27-30, Philadelphia, PA, USA.
33. Hossain, M.S. (2011). "Resistivity Imaging for Site Investigations" Bangladesh University of Engineering and Technology, Dhaka, Bangladesh, Jan 10, 2011– Invited Presentation.
34. Hossain, M.S. (2011). "Landfill gas to Energy Perspective – Operating Landfills as Bioreactor Landfills" Bangladesh University of Engineering and Technology, Dhaka, Bangladesh, Jan 12, 2011– Invited Presentation.
35. Hossain, M.S. (2011). "Resistivity Imaging for Underground Infrastructure and Site Investigations" US Army Corps of Engineers, Fort Worth, March 2011– Invited Presentation.
36. Hossain, M.S. (2011). "Unknown Foundation Depth Investigations using Non Destructive Testing" TxDOT Fort Worth District, February 2011– Invited Presentation.
37. Hossain, M.S. and \*Khan, S. (2011). "Determination of Unknown foundation depth using NDT methods" Geo-Frontier 2011, March 13 - 16, 2011, Dallas, TX.
38. \*Shihada, H. and Hossain, M.S. (2011). "Estimating Moisture Content of Landfilled Municipal Solid Waste without Drilling." TxSWANA 2011, Irving, Texas, April 17-20.
39. Hossain, M.S. (2010). "Effects of Leachate Recirculation on Methane Generation in landfills" SWANA Webinar, November 2010 – Attended by more than 50 Cities, Consultants and Solid Waste Entities from USA and Canada – Invited Presentation.
40. Hossain, M.S. (2010). "Leachate Recirculation Study for City of Denton" TCEQ, February 28, 2010
41. Hossain, M.S. (2010). "Progress Report - Leachate Recirculation Study for City of Denton" TCEQ, November 10, 2010 – Invited Presentation.

42. Hossain, M.S. (2010). "Monitoring Moisture Movement within MSW in an Enhance Leachate Recirculation (ELR) Landfill - The City of Denton Landfill" TxSWANA Annual Meeting in Corpus Christi, Texas April 2010
43. Hossain, M.S. (2010). "Monitoring Moisture Movement within MSW in Landfill" ASCE Dallas Geo Institute, Monthly Meeting, August 2010 – Invited Presentation.
44. Hossain, M.S. and Kemler, V (2010). "Monitoring Moisture Movement within Municipal Solid Waste in Enhanced Leachate Recirculation Landfill using Resistivity Imaging" WASTECON 2010, Aug. 16-18, in Boston.
45. Hossain, M.S. (2010). "Changes in Moisture Content with Depth in Enhanced Leachate Recirculation Landfill" Global Waste Management Symposium, October 3-6, 2010, San Antonio, Texas.
46. Hossain, S. and \*Shihada, H. (2010), "Characteristics of Municipal Solid Waste using Electrical Resistivity Imaging", 1st International Conference on Final Sinks (From Sanitary to Sustainable Landfilling), 23rd – 25th September 2010, Vienna.
47. Hossain, S. and \*Shihada, H. (2010), "Monitoring Moisture Movement within Municipal Solid Waste in Enhanced Leachate Recirculation Landfill using Resistivity Imaging", 1st International Conference on Final Sinks (From Sanitary to Sustainable Landfilling), 23rd – 25th September 2010, Vienna.
48. Hossain, M.S. (2010). "Bioreactor Landfill Technology" City of Garland, Solid Waste Services, Garland, Texas June 2010 – Invited Presentation.
49. Hossain, M.S. (2009). "Resistivity Imaging for Underground Infrastructure and Site Investigations" HNTB Consultants, June 2009 – Invited Presentation.
50. Hossain, M.S. (2009). "Resistivity Imaging for Underground Infrastructure and Site Investigations" ASCE Dallas Geo Institute, Monthly Meeting, November 2009 – Invited Presentation.
51. Hossain, M.S. (2009). "Design, Monitoring and Construction Aspects of Slurry Wall Construction – Case Studies in Singapore" DFI Technical Seminar on Slurry Wall, Chicago, May 8, 2009 – Invited Presentation.
52. Hossain, M.S. (2009). "Resistivity Imaging for Site Investigations" Briggs and Mathews, Mansfield, Texas, June 24, 2009 – Invited Presentation.
53. Hossain, M.S. (2009). "Unknown Foundation Depth Investigations using Non-Destructive Testing" TxDOT Dallas District, February 2009 – Invited Presentation.
54. Hossain, M.S. (2009). "Resistivity Imaging for Underground Infrastructure and Site Investigations" TxDOT Dallas District, December 2009 – Invited Presentation.
55. Hossain, M.S. (2009). "Resistivity Imaging for Underground Infrastructure and Site Investigations" TCEQ, February 21, 2009 – Invited Presentation.
56. Hossain, M.S. (2008). "Bioreactor Landfill Technology" City of Dallas, Solid Waste Services, Dallas, Texas June 2008 – Invited Presentation.
57. Hossain, M.S. (2008). "Bioreactor Landfill Technology" City of Denton, Solid Waste Services, Denton, Texas, December 2008 – Invited Presentation.
58. Hossain, M.S. (2008). "Resistivity Imaging for Underground Infrastructure and Site Investigations" TxDOT Dallas District, June 2008– Invited Presentation.
59. Hossain, M.S. (2008). "Resistivity Imaging for Underground Infrastructure and Site Investigations" KBR Consultants, Dallas, Texas May 2008– Invited Presentation.
60. Hossain, M.S. (2008). "Resistivity Imaging for Environmental Site Investigations and Remediation."

Environmental Protection Agency, Region 6 Headquarters, Dallas, May 20, 2008 – Invited Presentation.

61. Hossain, M.S. (2008). “Resistivity Imaging for Underground Infrastructure and Site Investigations” TxDOT Fort Worth District, December 2008 – Invited Presentation.
62. Hossain, M.S. (2008). “Resistivity Imaging for Underground Infrastructure and Site Investigations” Trinity River Authority, Arlington, Texas, April 25, 2008 – Invited Presentation.
63. Hossain, M.S. (2008). “Deformation and Stability of MSW Bioreactor Landfills: Properties and Analysis Approach” GeoCongress 2008, March 9 – 12, 2008, New Orleans, Louisiana.
64. Hossain, M.S. (2008). “Permeability of Municipal Solid Waste in Bioreactor Landfill with Degradation” GeoCongress 2008, March 9 – 12, 2008, New Orleans, Louisiana.
65. Hossain, M.S. (2007). “Resistivity Imaging for Site Investigations” TSPE Mid-Cities Club, Arlington, Texas, November 15, 2007 – Invited Presentation.
66. Hossain, M.S. (2007). “Resistivity Imaging for Underground Infrastructure and Site Investigations” Water and Utilities Department, City of Dallas, Texas, November 2007 – Invited Presentation.
67. Hossain, M.S. (2007). “Slope Stability using Recycled Plastic Pins” TxDOT Dallas District, June 2007 – Invited Presentation.
68. Hossain, M.S. (2007). “Resistivity Imaging for Underground Infrastructure and Site Investigations” US Army Corps of Engineers, Fort Worth, May 16, 2007 – Invited Presentation.
69. Hossain, M.S. (2007), “Failure Analysis of a Mechanically Stabilized Earth (MSE) wall in Maryland” Transportation Research Board, TRB 86th Annual Meeting, January 21-25, 2007, Washington, D.C.
70. Hossain, M.S. (2007). “Resistivity Imaging for Underground Infrastructure and Site Investigations” ASCE Fort Worth Monthly Meeting, October 15, 2007 – Invited Presentation.
71. Hossain, M.S. (2007). “Resistivity Imaging for Underground Infrastructure and Site Investigations” City of Arlington, Texas, October 03, 2007 – Invited Presentation.
72. Hossain, M.S., Omelchenko, V. and \*Haque, M.A. (2007). “Capacity of Rock Socketed Drilled Shafts in Mid-Atlantic Region” GeoDenver, February 18-21, 2007, Denver, Colorado.
73. \*Branch, A. and Hossain, M.S. (2007). “Seepage Analyses of Soil-Bentonite Slurry Cutoff Wall through Landfill” GeoDenver, February 18-21, 1007, Denver, Colorado.
74. Hossain, M.S. (2006). “Slope Stability using Recycled Plastic Pins” TxDOT Tyler District, June 2006 – Invited Presentation.
75. Hossain, M.S. (2005). “Prediction of Municipal Solid Waste Landfill Settlement with Leachate Recirculation,” Geo-frontiers 2005 at Austin, Texas, January 24-26, 2005.
76. Hossain, M.S., and Khouri, B. (2005), “Comparative Study of Different In-Situ Tests for Site Investigation” Second International Conference on the Flat Dilatometer, Washington DC, April 2-5, 2006.
77. Hossain, M.S. (2003), “Effect of Decomposition and Stress on Creep Compression Index of Municipal Solid Waste in Bioreactor Landfills”, The 12th Pan-American Conference for Soil Mechanics and Geotechnical Engineering and the 39th US Rock Mechanics Symposium, Soil and Rock America 2003, June 22-26, Cambridge, Massachusetts, USA, pg. 1435-1440.

Note: \* - Presented by Students

## Previous Research Experience

Research Assistant, *North Carolina State University, Raleigh, NC* (August 1999 to August 2002)

- Mechanics of Compressibility and Shear Strength of Municipal Solid Waste for Bioreactor Landfill (EPA Sponsored Project)
  - Investigated and characterized changes in waste compressibility and shear strength as waste decomposes in bioreactor landfills.
  - Measured and defined time dependent waste compressibility as a function of cellulose and hemicellulose-to-lignin ratio as well as gas production rate.
  - Developed a model for waste settlement considering the effect of time dependent property change of waste materials including biological degradation.
  - Developed a constitutive model describing refuse shear strength as a function of stress state and gas generation rate taking into account the waste state of waste decomposition.

Research Assistant, *North Carolina State University, Raleigh, NC* (October 2000 to July 2002) North Carolina Department of Transportation (NCDOT) Projects –

(1) Load Resistance Factor Design (LRFD) for Reliability Analysis/Design of Driven Piles Axial Capacity

- Reviewed PDA data record and static load test data for 170 projects
- Compiled analysis and design data for driven pile axial capacity (170 projects)
- Performed reliability analysis and developed resistance factors

(2) Numerical Analysis and Modeling of Embankment on Soft Ground with Pile Foundation

- Synthesized soil properties and embankment profile for analysis and numerical modeling.
- Performed numerical analysis and modeling of embankment (4m high) with reinforcement mattress.
- Performed numerical analysis and modeling of actual embankment (2m high) with reinforcement mattress and supporting timber piles by using Finite Difference Program FLAC.

Research Assistant, *Asian Institute of Technology (AIT), Bangkok, Thailand* (May 1996 to December 1996) - Laboratory Testing of Geosynthetic Materials for Engineering Properties.

- Tested different geosynthetic material (geotextile, geomembrane, and geogrid). The tests included pullout test, elongation test, and puncture test.
- Submitted and presented tests report to the client at the end of the project.

Research Assistant, *Asian Institute of Technology (AIT), Bangkok, Thailand* (August 1996 to April 1997) - Prediction versus Performance of Nong Ngu Hao Site Improved with Chemico Pile Method.

- Observed performance of Chemico Pile improved ground (full-scale field test) for Nong Ngu Hao airport site in Bangkok, Thailand.
- Analyzed and predicted the performance of the improved ground by numerical modeling using FEM program PLAXIS.
- Compared the predicted results with actual field performance.

## Professional Work Experience

Senior Engineer, Schnabel Engineering, Gaithersburg, MD, USA (September 2003 to August 2004)

*General Responsibilities:* Proposal preparation, project management, geotechnical engineering analysis, design, and report preparation, review of engineering analysis and design, and mentor junior staff engineers.

Completed subsurface investigations, geotechnical analysis, design, and recommendations of shallow and deep foundation for the following projects:

- Parking Garage for Building 10, NIH, Bethesda, Maryland.
- Mid-campus Development (Business Building) of Georgetown University, Washington DC.
- United States Embassy Building in South Africa.
- Office Building, 1015 Half Street, S.E. Washington DC.
- Redevelopment on Landfill for Hunter Property, Fairfax County, Virginia
- Forest Knolls Elementary School Additions, Montgomery County, Maryland
- Sculpture, Glenstone Residence, Maryland
- Georgetown University Alumni House, 3604 O Street, N.W. Washington, DC
- Lake Fairfax Phase I Improvements, Reston, Fairfax County, Virginia
- Joint Strike Fighter and Supplies Facilities, Patuxent River Naval Air Station, Maryland
- Auger Cast Pile Load Testing, Prince George's County Courthouse, Maryland

Slope stability analysis, design, and recommendations for:

- Retaining Wall – Northeastern Slope, Washington Estate, S.E. Washington, DC
- Blue Wing Drive, Lot 4 and 5 of Block 3, Mt. Vernon District, Fairfax County, Virginia

Subsurface investigations, damage study, repair design, and recommendations for:

- Naylor Garden, S.E. Washington DC.
- Emergency Generator Pad, Baywoods of Annapolis, Maryland
- MSE Retaining Wall, Tower Oaks Residential Development, Rockville, Maryland

Subsurface investigations for Storm Water Management (SWM) Pond design, and recommendations for:

- Martin Luther King SWM Pond, Silver Spring, Maryland
- Belcrest Center, Hyattsville, Maryland

Temporary excavation support and retaining structure design for:

- George Mason University Project Site, Fairfax, Virginia
- Glenstone Residence, Potomac, Maryland

Geotechnical investigation and recommendations for utilization of existing foundation structures:

- Verizon Bethesda Communication Center, 4533 Stanford Street, Chevy Chase, Maryland
- Numerical analysis and modeling of embankment on soft ground with pile foundation for NCDOT:
- Performed numerical analysis and modeling of actual embankment (2m high) with reinforcement mattress and supporting timber piles by using Finite Difference Program FLAC.

Reviewer Federal Emergency Management Agency (FEMA) Levee Design Projects.

Evaluated the levee for reasonableness with respect to generally accepted geotechnical engineering practice and to ensure that the design approval is acceptable and in accordance with 44CFR65.05 of the National Flood Insurance Program Regulations. This evaluation included review of slope stability, settlement and seepage analyses. Reviewed the following projects:

- Mirehaven Arroyo Levee Project, Cielo Oeste, Albuquerque, New Mexico
- Sny Island Levee and Drainage District, Mississippi River, Adams, Pike and Calhoun Counties, Illinois
- Levee System along Smoky Hill River, Shilling Road Project, Salina, Kansas
- Enhanced Hills Subdivision Master Drainage Plan, Venada Arroyo Improvements Project, City of Rio Rancho and Town of Bernalillo, New Mexico
- Detention Dam at Walnut Creek, Parmer Lane, Austin, Texas
- Fort Bend Levee Improvement, District 15, Texas

Geotechnical Engineer, *URS Corporations, Gaithersburg, MD, USA* (September 2002 to August 2003)

*General Responsibilities:* Geotechnical design, analysis and report preparation, proposal preparation, project management and mentor junior staff engineers.

Completed geotechnical analysis, design, and recommendations of shallow and deep foundation for buildings, as a Project Engineer of the following projects:

- Subsurface investigation, geotechnical analysis, design and report of hanger foundation in Elizabeth City, NC for United State Coast Guard.
- Subsurface investigation and geotechnical analysis, design and report of shallow & deep foundation, excavation support system and impact of excavation on the existing tunnel below proposed building structure for the Department of Transportation (DOT) Headquarter in Washington, DC.
- Geotechnical analysis and design of shallow and deep foundation for National Library of Medicine Facility Expansion, NIH, Bethesda, Maryland. Produced engineering analysis, recommendations and specifications for the underpinning.
- Geotechnical design and report of final cover (using geosynthetics) for Days Cove C& D waste landfill in Baltimore, MD
- Subsurface investigation, geotechnical analyses, settlement and side slope stability, of Days Cove C & D waste landfill extension in Baltimore, MD

Design Engineer, L&M Foundation Specialist Pt. Ltd., Singapore. (October 97 to August 99)

*General Responsibilities:* Design of deep foundation, retaining structure, and excavation support system for basement and cut-cover tunnels, project management, and report preparation.

Worked on numerous geotechnical and structural analysis and design of drilled shaft, deep foundation, excavation support system (retaining structure such as diaphragm wall, contiguous bored pile wall, secant pile wall) for basement, cut and cover tunnel, underpass for highway intersections, underground Mass Rapid

Transport (MRT) station.

- Performed numerical analysis and modeling for excavation support system using FEM program PLAXIS.
- Designed and Completed the following “Design and Build” projects:
  - Excavation support system (diaphragm wall) for top down two-storey basement construction and bored pile (Drilled Shaft) for the extension of shopping center “Mustafa”.
  - Diaphragm wall for circular ventilation shaft of Changi Airport MRT - Contact 503 underground tunnel
  - Excavation support system (diaphragm wall) for top down two storey basement construction for the China Square Development Project – Land Parcel G
  - Excavation support system (diaphragm wall) for bottom up two storey basement construction for the China Square Development Project – Land Parcel F
  - Drilled shafts (0.5m to 2.0 m diameter) for China Square Development–Land Parcel G and F
  - Jet grouting for ground improvement for the China Square Development Project – Land Parcel F and G.

Project Engineer, Penta-Ocean Construction Co. Ltd., Thailand (April 1997 to October 1997) Dredging and Reclamation for the Development of MapTa Phut Industrial Estate, Thailand.

*General Responsibilities:* Dredging channel slope stability analysis, project management, and report preparation.

- Checked design of dredging channel and prepared drawings for the submission and approval from the port authority.
- Attended weekly meeting with client and submitted monthly progress report.
- Coordinated with the port user for the shipping schedule and dredging schedule to avoid any accident.
- Communicated and co-ordinated with the sub-contractors from Singapore, Japan and Norway

Design Engineer, Development Design Consultants, Dhaka, Bangladesh (May 1994 to August 1995)

*General Responsibilities:* Geotechnical and structural analysis, and design of building, bridge including superstructure and substructure.

- Completed geotechnical and structural analysis and design of typical bridges (lengths of 100m, 200m, 300m, and 400m).
- Completed foundation and structural design of five storey Lalmatia College building (3 Blocks)
- Designed underground vault room for Bangladesh Bank, Barisal Branch
- Performed geotechnical and structural analysis by using Finite Element Programme STAAD III and completed design calculation by using in house software.

### Teaching

Soil Mechanics, Foundation Engineering, Theoretical Soil Mechanics, Computational Geotechnics, Geoenvironmental Engineering, Geosynthetics, Design of Earth Dam, In-situ Testing, Geotechnical Aspects of Landfill Design

### ***Courses Taught***

Theoretical Soil Mechanics – CE5365 - Fall 2004, Fall 2005, Fall 2008, Fall 2010, Fall 2011, Fall 2012, Fall 2013, Fall 2014, Fall 2015, Fall 2017, Fall 2018, Fall 2019, Fall 2020, Fall 2021, Fall 2022

Designing with Geosynthetics – CE4322/CE5372 - Spring 2005, Fall 2006.

Computational Geotechnics – CE5369 - Summer 2005, Spring 2006, Spring 2010, Spring 2011, Spring 2013.

Geotechnical Aspects of Landfill Design (CE5373)/Introduction to Geoenvironmental Engineering (CE4323) – Fall 2005, Fall 2007, Spring 2009, Fall 2010, Fall 2011, Fall 2012, Fall 2017.

Design of Earth Dam – Summer 2006.

Foundation analysis and Design (CE5364/CE4321) – Spring 2006, Spring 2007, Spring 2008, Spring 2009, Spring 2010, Spring 2012, Spring 2013, Spring 2014, Spring 2015.

Soil Mechanics (CE3343) – Fall 2006, Summer 2007, Fall 2008, Summer 2009, Spring 2016, Fall 2016.

Soil Mechanics Laboratory (CE3143) – Fall 2007, Fall 2015.

In-Situ Testing (CE6312) – Spring 2007.

### **New Course Development**

**CE 5369 (Computational Geotechnics)** was offered in Summer 2005. The main objective of the course was to provide the student with a fundamental understanding of computational geotechnics, and to improve problem-solving skills by using computer programs in geotechnical, geoenvironmental, and geostructural systems.

**CE4323/CE5375 (Introduction to Geoenvironmental Engineering/Geotechnical Aspects of Landfill Design)** was offered in Fall 2005. This course was introduced as a new senior elective also at the same time. The major objective of the course was to provide the students with an understanding of geotechnical and geo-environmental aspects of landfill design.

**CE6300 (Design of Earth Dam)** was offered in Summer 2006. The major objective of the course was to provide the students with an understanding of analyses and design aspects of earth dam design.

### **University and Department Service Activities**

#### ***Committee Membership – University Level***

- Member, Library Committee, University of Texas at Arlington, September 2007 – 2015
- Member, DE Committee, University of Texas at Arlington, September 2007 – 2015

#### ***Other Service Activities – University Level***

- Faculty Advisor, Bangladesh Student Organization (BSO), University of Texas at Arlington, September 2004 – 2015.

#### ***Committee Membership – Departmental Level***

- Member, Undergraduate Committee, August 2009 – Present.
- Member, Scholarship Committee, August 2013 - Present

#### ***Other Service Activities – Departmental Level***

- Member, Faculty Search Committee, Structural Faculty Position, Department of Civil & Environmental Engineering, UTA, September 2006 – April 2007.
- Faculty Meeting Secretary, Department of Civil & Environmental Engr., UTA, Fall 2004 – Spring 2005.



## **Conference/Workshop Activities**

EPA organized Brownfields Conference 2004: September 20-22, 2004, St. Louis, Missouri.

EPA organized Brownfields Conference 2005: November 02-04, 2005, Denver, Colorado.

EPA organized Brownfields Conference 2006: November 13-15, 2006, Boston.

EPA organized Brownfields Conference 2008: May 5 - 7, 2008, Detroit.

82nd TRB Annual Meeting, January 12 -16, 2003, Washington, D.C.

83rd TRB Annual Meeting, January 11 -15, 2004, Washington, D.C.

84th TRB Annual Meeting, January 9 -13, 2005, Washington, D.C.

85th TRB Annual Meeting, January 22 -26, 2006, Washington, D.C.

86th TRB Annual Meeting, January 21 -25, 2007, Washington, D.C.

89th TRB Annual Meeting, January 12 -16, 2010, Washington, D.C.

91st TRB Annual Meeting, January 23 -26, 2012, Washington, D.C.

92nd TRB Annual Meeting, January 13 -17, 2013, Washington, D.C.

93rd TRB Annual Meeting, January 12 -16, 2014, Washington, D.C.

The 12th Pan-American Conference for Soil Mechanics and Geotechnical Engineering and the 39th US Rock Mechanics Symposium, Soil and Rock America 2003, June 22-26, Cambridge, Massachusetts.

Geo-frontiers 2005, January 24-26, 2005, at Austin, Texas. NSF Grant Conferences: April 4-5, 2005, Oakland, California.

TxDOT Bridge Conference, August 15-17, 2005, at Dallas, Texas.

Second International Conference on the Flat Dilatometer, April 2-5, 2006, Washington DC

GeoCongress, March 9 – 12, 2008, New Orleans, Louisiana.

33rd Annual Conference on Deep Foundation, October 15-17, 2008. New York TXSWANA 2009, Dallas, Texas, March 26-29, 2009.

TXSWANA 2010, Corpus Christi, Texas April 21-25, 2010 WASTECON, Boston, August 2010.

Global Waste Management Symposium, October 3-6, 2010, San Antonio, Texas Geo-Frontiers 2011. March 13-16, 2011, Dallas, Texas.

SWANA, Oklahoma 2011, March 8-10, 2011, Catoosa, OK.

TXSWANA 2011, Irving, Texas April 17-21, 2011.

Waste Expo 2011, Dallas, Texas, May 10-12, 2011.

TXSWANA 2012, Garland, Texas, June 13 - 15, 2012.

Global Waste Management Symposium, September 30 - October 3, 2012, Phoenix, Arizona.

DFI Annual Conference, October 16-19, 2012, Houston, Texas Geo Congress 2013, San Diego, March 3-6, 2013.

TxSWANA 2013, Lubbock, Texas, April 16-18, 2013.

ISWA BEACON 2nd International Conference on Final Sinks, Espoo, Finland, May 16- 18, 2013.

ISWA Annual Congress, October 7-11, 2013, Vienna, Austria Landfill Working Group Meeting, October 10, 2013, Vienna, Austria.

Editorial Board Member Meeting for Journal of Waste Management and Research, October 9, 2013, Vienna, Austria.

Geo Congress 2014, Atlanta, February 22-25, 2014.

TxSWANA 2014, Austin, Texas, April 6-9, 2014.

Landfill Training and Workshop, Ghana, July 6-12, 2014.

International Landfill Research Symposium, Crystal River, Florida, October 19-22, 2014.

SWANAPALOOZA 2015, New Orleans, Louisiana, March 2015.

TxSWANA 2015, El Paso, Texas, April 15-18, 2015.

ISWA Annual Congress 2015, Antwerp, Belgium, September 7-9, 2015.

TxSWANA 2016, Corpus Christi, Texas, April 11-14, 2016.

ISWA/CCAC Landfill Training Workshop in Dar Es Salaam, Tanzania, 2016.

ISWA Annual Congress 2016, Novi Sad, Serbia, September 19-21, 2016.

ISWA Annual Congress and WASTECON 2017, Baltimore, Maryland, USA, September 25-27, 2017.

ISWA Annual Congress 2018, Kuala Lumpur, Malaysia, October 22-24, 2018.

ISWA Annual Congress 2019, Bilbao, Spain, October 7-9, 2019.

TxSWANA 2022, Lubbock, Texas, April 25-27, 2022

ISWA Annual Congress 2022, Singapore, September 20-23, 2022.

## **Professional Service**

**Member, Landfill Working Group**, ISWA (International Solid Waste Association), May 2013  
– Present

### **Committee Membership – National Level**

Transportation Research Board, **National Academy of Sciences**, Washington D.C.

- Member, TRB Committee AFS50, Modeling Techniques in Geomechanics, Transportation Research Board, **National Academy of Sciences**, Washington D.C., March 2003 – 2016
- Member, TRB Committee AFP40, Physicochemical Phenomena in Soils, Transportation Research Board, National Academy of Sciences, Washington D.C., March 2003 – 2016.
- Research Coordinator for TRB Committee AFP40, Physicochemical Phenomena in Soils, Transportation Research Board, National Academy of Sciences, Washington D.C., March 2011 – 2017.
- Member, Geo-Institute, Geo Environmental Engineering Committee, American Society of Civil Engineers, Reston, Virginia, March 2013 – Present.
- Member, U.S. Universities Council on Geotechnical Education & Research, October 2004 – Present.

- Global Waste Management Symposium, March 2012 – Present
- Member, Geoenvironmental Engineering Group, ASCE, March 2013 – Present
- 2012 DFI Houston Conference Committee Member and Session Moderator
- 2014 TRB Conference Session Moderator - proposed by Committee AFP40 and co- sponsored by AFP30 entitled “The Legacy and Future of Resistivity Testing for Soils, Aggregates and Fills”.

#### **Other Service Activities – National Level**

- Invited Panelist, Oak Ridge National Lab Review Panel, Southeast Regional Research Initiative by Department of Homeland Security (DHS), Oak Ridge, Tennessee, June 24 – 25, 2007. Reviewer of 8 proposals.
- National Science Foundation

#### **Review and Editorial Activities**

##### Peer Reviewer: Journal Papers

- Journal of Geotechnical and Geoenvironmental Engineering, ASCE
- Journal of Hazardous, Toxic, and Radioactive Waste, ASCE
- Journal of Performance of Constructed Facilities, ASCE
- Geotechnical Testing Journal, ASTM.
- Canadian Geotechnical Journal, CGS.
- Journal of Engineering Mechanics, ASCE.
- Journal of the Transportation Research Board, TRB.
- International Journal of Waste Management, *Elsevier*

##### Peer Reviewer: Conference Proceedings

- Global Waste Management Symposium, September 30 - October 3, 2012, Phoenix, Arizona
- Geo-Frontiers 2011. March 13-16, 2011, Dallas, Texas
- Geo Florida 2010. February 20-24, West Palm Beach, Florida
- DFI Annual Conference, October 16-19, 2012, Houston, Texas
- Global Waste Management Symposium, October 3-6, 2010, San Antonio, Texas.
- GeoCongress 2008: Sustainability in the Geoenvironment, New Orleans, LA.
- Geo-Denver 2007: New Peaks in Geotechnics, Denver, Colorado.
- GeoShanghai 2006 International Conference, Shanghai, China.
- 2<sup>nd</sup> International Conference on the Flat Dilatometer, Washington DC, 2006
- 12<sup>th</sup> Pan-American Conf. on Soil Mechanics, Cambridge, MA.
- North American Geosynthetics Society (NAGS), 2005, Las Vegas
- Geo-Frontiers 2005 Conference, Austin, Texas

#### **Computer Skills**

Engineering Software: FLAC, PLAXIS, ct-SHORING, SIGMA-W, Geo-SLOPE, STABL, 1-D RIDO, STAAD III, MODFLOW, PILECAP, DRIVE 1.2, L-PILE, SHAFT 1.0, gINT, HELP MODEL