Sangchul S. Hwang, PhD, PE

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EDUCATION

Ph.D.	Civil Engineering (Environmental), University of Akron, OH (2002)
Graduate study	Civil Engineering (Environmental), University of Kansas, KS (1996 – 1998)
Master	Civil Engineering (Environmental), Kyungpook National University, Korea (1994)
Bachelor	Civil Engineering, Kyungpook National University, Korea (1990)
Post Doc	US National Research Council worked at US EPA National Risk Management Research Laboratory, OK (2003 – 2004)
Post Doc	Johns Hopkins University worked at US Army Engineers Engineering and Research Development Center, MS (2002 - 2003)

CORE QUALIFICATIONS FOR ADMINISTRATIVE & LEADERSHIP POSITION

- Demonstrated leadership in building partnerships with national labs and government agencies
- Evidence of building and leading research teams with faculty across the campus
- A nationally and internationally recognized research agenda and publication record
- A strong record of project management and administrative experience
- A proven record of supervising and mentoring junior faculty and postdoctoral associates
- Expertise in building research capabilities and acquiring research assets

RESEARCH INTEREST Fate, Transport, and Remediation of Contaminants (PFAS, Chlorinated Solvents, 6PPD-q)
Nature-inspired Green Stormwater Infrastructure

TEACHING INTEREST Water Quality Waste Management Green Stormwater Infrastructure
Fluid Mechanics Hydraulics

RESEARCH

Sep. 2025 – present *Full Professor*, Civil Engineering Program
Ingram School of Engineering, Texas State University

- In-Reservoir Water Quality Management with Floating Wetlands (PI, $457K, City of Kyle, 2026-2028)
- Multidisciplinary Research and Workforce Development on Fate and Transport of PFAS (PI, $3.52M, DOE, 2024-2027)
- VOC Remediation by Permeable Reactive Barrier and VOC Sensor Development for Site Safety (PI, $350K, DOE, 2025-2026)
- Performance of the Existing Best Management Practices for PFAS Control in Stormwater Runoff in San Marcos, TX (PI, $80K, TXST, 2025-2026)
- PFAS Monitoring in the Upper San Marcos River (PI, $30K, TXST, 2025-2026)
- PFAS Removal by Nanobiochar-Catalyzed Advanced Oxidation and Reduction Processes (PI, $8K, TXST, 2025-2026)
- Biologically Active Pervious Structure for Stormwater Management (PI, $50K, NSF, 2024-2026)
- Professional Services and Studies on Green and Technology-Enhanced Infrastructure Management and Firefighter's Health (PI, $167.5K, Hays County Emergency Service District No. 5, 2023-2026)
- Nutrition for Underserved Elderly via Application (NUEVA) (Senior Personnel, $2.76M, Department of Health and Human Services, 2022 – 2027)

Sep. 2020 – Aug. 2025 *Associate Professor (tenured in Sep. 2020)*, Civil Engineering Program
Ingram School of Engineering, Texas State University

- Wilson Historic District Energy and Water Conservation Study (co-PI, $150K, 2024-2025)
- Climate impact on resiliency and safety of in-situ remediation for recalcitrant contaminants (PI, $350K, DOE, 2024-2025)
- Biologically Active Pervious Structure (BAPS): A sustainable technology for runoff water quality improvement with micro- and nano-plastics (PI, $15K, Formosa Innovation Award, 2024-2025)
- HappyHoof Bedding (PI, $1K, TXST FIAP, 2025)
- Aqua Sip Water (co-PI, $11K, TXST FIAP, 2024)
- *E. coli* and nutrient reduction with Biologically Active Float (PI, $250K, The City of Kyle, 2023-2025)
- Sustainable, Safe, and Climate Resilient Attenuation-Based Remediation (PI, $320K, DOE, 2023-2024)
- Exposure to Per- and Polyfluoroalkyl Substances (PFAS) on Cognitive Function in Firefighters in Central Texas (co-PI, $30K, TXST ORSP, 2023-2024)

- Biologically Active Pervious Structure (BAPS): A sustainable technology for runoff water quality improvement (PI, $11K, TXST FIAP, 2023)
- Gua gum for biomedical and agricultural purposes (co-PI, $10K, Translational Health Research Center, 2023-2024)
- Making Extreme-event-stable Shorelines with Hyacinth (MESH) (co-PI, $25K, EPA, 2022-2023)
- Our Planet Engineering (OPEN) (PI, $8K, TXST Regional NSF I-Corps, Spring 2022 Cohort)
- Health Education, Awareness, and Literacy Through Older Adults Support with Incontinence Supplies (HEALTH OASIS) (co-PI, $7.8K, TXST Regional NSF I-Corps, September 2022 Cohort)
- Development of IoT-Based Snow Removal System for Preemptive Response to Heavy Snow and Black Ice (co-PI, $326.6K, Korea Evaluation Institute of Industrial Technology (KEIT), 2021-2023)

Jul. 2014 – Jun. 2020 *Full Professor*, Department of Civil Engineering and Surveying (INCI)
University of Puerto Rico at Mayagüez (UPR-Mayagüez)

- Structural and Reactive Pervious Composite for Urban Storm Water Management (PI, $710K, AES PR, 2012-2018)
- Pervious Rooftop Layer for Rain Harvesting and Inactivation of *E. coli* (PI, $50K, USGS, 2014-2016)
- Solar-Powered Drum Filtration and Disinfection for Rural Community (PI, $65.7K, USGS, 2012-2015)
- Nanotechnology Based Remediation (a sub-project of NSF-funded Nanotechnology from Basic Science to Emerging Applications: Institute for Functional Nanomaterials (IFN, $20M), UPRM Senior Personnel, 2010-2015)
- Engineered Nanoparticles in Biological Wastewater Treatment (a sub-project of NSF-funded Wisconsin–Puerto Rico Partnership for Research and Education in Materials ($Wi(PR)_2EM$, $3.25M), UPRM Senior Personnel, 2009-2014)
- Biological Fate and Degradation of Phthalates in Landfill Settings (a sub-project of NIEHS-funded Puerto Rico Testbed for Exploring Contaminant Threat (PRoTECT, $9.9M), UPRM Co-PI, UPRM Budget $1.1M, 2010-2014)

Jul. 2008 – Jun. 2014 Associate Professor (*tenured in Jan. 2010*), INCI, UPRM

- Water Quality Assessment for Application of Ash Aggregates to Soils (PI, $206.7K, AES PR, 2011-2013)
- Bioutilization of Coffee Wastes & Wastewater (Co-PI, $50K, USDA, 2010-2012)
- Tight-Zone DNAPL Remediation; Polymer-Aided Alcohol Flushing (Co-PI, $900K, US DoE, 2007-2012)
- Biomethanation of Chicken Manure (PI, $6K, QMS, Inc., 2009-2010)
- Development of Point-of-Entry Cistern Rainwater Purification Units (PI, $40K, USGS, 2009-2011)
- Open Pit Restoration to Bio-viable Land (PI, $171.1K, USGS / AES PR, 2008-2011)
- Telemetry Monitoring of Small Water Treatment Systems (PI, $87.2K, Shaw Environmental, 2007-2010)
- Enhanced Landfill Biodecomposition and Settlement (PI, $109.3K, AES PR, 2007-2011)
- Plant Catchment of Evaporated Explosives (Co-PI, $75K, US DoD, 2008-2009)

Jan. 2005 – Jun. 2008 Assistant Professor, INCI, UPRM

- Rural Community Water and Wastewater (PI, $18.6K, Chancellor's Office, UPRM, 2007-2008)
- Effect of Surface Vegetation on Explosives Fate and Transport (Co-PI, $204K, US DoD, 2006-2007)
- Treatment of Explosives-Containing Water and Wastewater (PI, $5K, R&D Center, UPRM, 2006-2007)
- Alternative Landfill Daily Cover (PI, $12K, AES PR, 2006-2007)
- In situ Sediment Capping Amendments (PI, $17.6K, UPR Sea Grant / AES PR, 2006-2007)
- In situ Fenton Oxidation (PI, $5K, College of Engineering, UPRM, 2005-2006)

Oct. 2003 – Dec. 2004 National Research Council Post-Doctoral Researcher

- Acquired US National Research Council's Postdoctoral Fellowship Award
- Worked at U.S. EPA National Risk Management Research Laboratory, Ground Water & Ecosystems Restoration Division, Ada, OK
- In-situ chemical oxidation (ISCO) – Process optimization

Feb. 2002 – Sep. 2003 Johns Hopkins University Post-Doctoral Researcher

- Worked at US Army ERDC, Environmental Laboratory, Vicksburg, MS (Mar. 2002 – Sep. 2003)
- ISCO for remediation of dense non-aqueous phase liquids in soil & groundwater
- Alkaline hydrolysis and advanced oxidation (UV/H_2O_2) for remediation of TNT- and RDX-contaminated groundwater
- Innovative polymer clarification for confined disposal facilities effluent treatment

Jan. 1999 – Jan. 2002 Doctoral Research Assistant, Civil Engineering Department, University of Akron, OH

- Worked on sorption, desorption, and biodegradation of polycyclic aromatic hydrocarbons and waste oil

Aug. 1992 – Aug. 1994 Graduate Research Assistant, Civil Engineering, Kyungpook National University, Korea

- Assisted in the projects on wastewater treatment plant design, sludge treatment, solid waste management

TEACHING

Sep. 2020 – present Full Professor (Sep. 2025 – present), Ingram School of Engineering, Texas State University
Associate Professor (Sep. 2020 – Aug. 2025)
Tenure (Sep. 2020)

- Graduate classes
  - ENGR 5322 / CE 7322 Low Impact Development & Green Infrastructure
  - ENGR 5323 / CE 7323 Soil & Groundwater Remediation

		CE 5370	Urban Stormwater Management
		CE 5390	Infrastructure Systems Analysis
•	Undergraduate classes	CE 3320	Environmental Engineering
		CE 4321	Hazardous Waste Management
		CE 4370	Hydraulics

Jan. 2005 – Jun. 2020 Full Professor (Jul. 2014 – Jun. 2020), INCI, UPR-Mayagüez
Associate Professor (Jul. 2008 – Jun. 2014)
Tenure (Jan. 2010)
Assistant Professor (Jan. 2005 – Jun. 2008)

•	Graduate classes	INCI 6005	Biological Wastewater Treatment
		INCI 6015	Environmental Engineering Microbiology
		INCI 6076	Physicochemical Water Treatment
		INCI 6118	Bioremediation
•	Undergraduate classes	INCI 5007	Solid Waste Management
		INCI 4008	Introduction to Environmental Engineering
		INGE 4015	Fluid Mechanics

Sep. 1994 – Jun. 1996 Part-time Lecturer, Daegu Engineering Institute, Korea
- Lectures on Environmental Engineering, Hydraulics, Water Resources Engineering, Soil Mechanics, and Statics

SERVICE

Professional Service

Dec. 2022 – present Associate Editor, AQUA – Water Infrastructure, Ecosystems & Society

Sep. 2020 – present Editorial Board, International Journal of Natural Disasters, Accidents and Civil Infrastructure

Sep. 2020 – present A Friend of the Committee, Transportation Research Board (TRB) AMS20 Committee on Resource Conservation and Recovery

May 2015 Judge, 2015 Intel International Science and Engineering Fair (ISEF), Pittsburgh, PA

Jan. 2005 – present Journal Reviewer
- Construction & Building Materials, Journal of Environmental Management, Journal of Cleaner Production, Journal of Building Engineering, Water Research, Journal of Hazardous Materials, Chemosphere, Environmental Science & Technology, Journal of Contaminant Hydrology, Soil Biology and Biochemistry, Case Studies in Construction Materials

Community Service

Dec. 2021 – present Steering Committee, Plum Creek Watershed Partnership

Jul. 2021 – present Planning Committee, Plum Creek Wetland Preserve, Guadalupe Blanco River Trust

2013 – 2019 Judge, Regional Science Fair, Southwestern Educational Society, Puerto Rico

Institutional Service

Sep. 2022 – *Jul. 2023* Graduate Studies Lead, Civil Engineering Program, Texas State University

Sep. 2022 – May 2023 Faculty Search Committee Chair, Civil Engineering Program, Texas State University
- Water Resources Assistant Professor Search

Sep. 2022 – present Annual Review Committee, Ingram School of Engineering, Texas State University

Jan. 2022 – Jul. 2022 Faculty Advisor, Student Chapter of Engineers for a Sustainable World at Texas State University

Sep. 2021 – present Personnel Committee, Ingram School of Engineering, Texas State University

Sep. 2021 – May 2022 Faculty Search Committee Chair, Civil Engineering Program, Texas State University
- Water Resources Associate or Full Professor Search

Oct. 2020 – May 2021 Scholarship Committee, Ingram School of Engineering, Texas State University
- Review and nomination of the best thesis to College of Science and Engineering
- Various reviews of students' application for scholarship

Sep. 2020 – May 2021 Faculty Search Committee, Civil Engineering Program, Texas State University
- Water Resources Full Professor Search
- Structures Assistant Professor Search

Sep. 2020 – May 2021 Faculty Co-Advisor, Student Team for 2021 EPA's Campus RainWorks Challenge

Sep. 2020 – present Water Wizard, The Meadows Center for Water and the Environment

Sep. 2018 – May 2020 Faculty Advisor, Student Chapter of Sociedad Ambientalista Eco Suficiente at UPR-Mayagüez

Sep. 2005 – May 2012 Faculty Advisor, Student Chapter of Puerto Rico Water and Environment Association at UPR-Mayagüez

TRAINING / OUTREACH

Jan. 2006 – present Seminar Lecturer, Puerto Rico Transportation Technology Transfer Center

- Pervious Concrete Pavement
- Introduction to NEPA and Transportation Decision-Making
- Environmental Impacts and Considerations in Transportation Practices and Projects
- Practical Guidelines of Solid Waste Disposal
- Engineering Fundamentals in Municipal Projects of Transportation and Water Resources

Dec. 4-7, 2007 Short Course Instructor, Puerto Rico Water Resources and Environmental Research Institute

- Sampling and Testing for Indicator Organisms in Fresh and Sea Waters

CONSULTING

- Identification of Application Potentials of Coal Combustion Byproducts in Civil, Agricultural, and Environmental Engineering Fields – for AES, LLP (2006)
- Evaluation of Water Disinfection by Sodium Hypochlorite Generator - for PR Aqueduct & Sewer Authority (2005)

CONFERENCE CHAIRING / HOSTING

- Chair: 2025 DOE EM Symposium, TXST, Feb 28, 2025
- Chair: 2024 DOE EM Symposium, TXST, Nov 8, 2024
- Chair: 2023 DOE EM Symposium, TXST, Nov 17, 2023
- Technical Chair: 1st Rural (non-PRASA) Community Water Supply and Sanitation, UPRM, Feb 25, 2008
- Technical Chair: 7th Caribbean Islands Water Resources Congress, St. Croix, USVI, Oct 25-26, 2007
- Session co-Convener: AGU Joint Assembly, Acapulco, Mexico, May 22-25, 2007

MEDIA RECOGNITION

Environmental Health Engineering

- The Dallas Express, "Texas Professor Leads Groundbreaking PFAS Study" (Aug. 4, 2024). https://dallasexpress.com/state/texas-professor-leads-groundbreaking-pfas-study/
- Texas State Newsroom, "Graduate student Wren Vogel challenges common perceptions on how we can use invasive plants to make good things" (Feb. 11, 2022). https://news.txstate.edu/student-achievements/2022/wren-vogel.html
- University Star, "Students turn invasive river species into menstrual pads" (Jan. 27, 2022). https://www.universitystar.com/life_and_arts/students-turn-invasive-river-species-into-menstrual-pads/article_0359415e-7f6e-11ec-966a-33e17623e9ca.html?mc_cid=e56e80ee82&mc_eid=f912b43f43
- San Antonio Express-News, "Texas State students fight invasive plant and 'period poverty' with production of low-cost menstrual pad" (Dec. 23, 2021). https://www.expressnews.com/hill-country/article/Texas-State-students-fight-invasive-plant-and-16723575.php
- Texas Public Radio, "These Texas State students are turning invasive plants from the San Marcos River into menstrual pads" (Dec. 21, 2021). https://www.tpr.org/environment/2021-12-12/these-texas-state-students-are-turning-invasive-plants-from-the-san-marcos-river-into-menstrual-pads
- KUT-Austin's NPR Studio, "These Texas State students are turning invasive plants from the San Marcos River into menstrual pads" (Dec. 10, 2021). https://www.kut.org/energy-environment/2021-12-10/these-texas-state-students-are-turning-invasive-plants-from-the-san-marcos-river-into-menstrual-pads

Green Infrastructure

- Texas State Newsroom, "TXST engineers team with Kyle Fire Department to deploy tech-enhanced infrastructure in a new fire station" (Apr. 24, 2023). https://news.txst.edu/research-and-innovation/2023/tech-enhanced-kyle-fire-department.html
- WOLE 12, "RUM inaugura plaza de concreto permeable" (Nov. 29, 2016) https://youtu.be/ycGxrYiDM54
- Ciencia Puerto Rico, "INICIO DE PROYECTO DE CONSTRUCCIÓN DE ESTACIONAMIENTO DE BICICLETAS EN EL RUM CON HORMIGÓN PERMEABLE" (Mar. 24, 2016) http://www.cienciapr.org/es/external-news/inicio-de-proyecto-de-construccion-de-estacionamiento-de-bicicletas-en-el-rum-con
- El Nuevo Dia, "Desarrollan hormigón permeable en la UPR de Mayagüez" (Feb. 16, 2016) http://www.elnuevodia.com/tecnologia/tecnologia/nota/desarrollanhormigonpermeableenlauprdemayaguez-2163010/

HONORS, RECOGNITION & LICENSES

Oct 2025	Research Grant Millionaire ($4.53M) Award, FY2023-2025, College of Science and Engineering, TXST
Oct 2025	Research Big Spenders (>$1M) Award, FY2025, College of Science and Engineering, TXST
Oct 2024	Research Grant Millionaire ($4.18M) Award, FY2022-2024, College of Science and Engineering, TXST
Dec 2022 – present	Associate Editor, AQUA – Water Infrastructure, Ecosystems & Society
Sep 2020 – present	Editorial Board, International Journal of Natural Disasters, Accidents and Civil Infrastructure

Sep 2020 - present	Water Wizard, The Meadows Center for Water and the Environment, TXST
July 2018	Texas PE
Dec 2017	Texas EIT
Mar 2016	Certified Pervious Concrete Technician, NRMCA (PCC 309678)
May 2014	Outstanding Professor of Civil Engineering, 2012-2013, UPRM
May 2013	Distinguished Researcher, College of Engineering, UPRM
2012	2011 Scientific and Technological Achievement Award (STAA), US EPA
May 2011	Outstanding Professor of Civil Engineering, 2009-2010, UPRM
May 2009	Outstanding Professor of Civil Engineering, 2007-2008, UPRM
May 2007	Outstanding Professor of Civil Engineering, 2005-2006, UPRM
May 2007	Best Technical Poster Presentation at the 2007 World of Coal Ash Conference
Oct 2006	Coal Combustion Products Partnership (C2P2) Award, US EPA
Oct 2003	Research Associateship Award, National Research Council, USA
Dec 2001 - present	Tau Beta Pi, The Engineering Honor Society
May 14-18, 2001	40-hr Hazardous Materials Incident Response Operations, U.S. EPA
Sep 2000	Scholarship for Academic Excellence, NAFSA: Association of International Educators
Mar 1990 – Jun 1992	Korean Army ROTC Officer, 1113 Army Corps of Engineers, Korea (Rank: First Lieutenant)
1991	Korean Environmental Engineer License (similar to US Engineer-In-Training Certificate)
Mar 1989	Best Performance Award, 109 ROTC Headquarters, Korea
1989	Korean Civil Engineer License (similar to US Engineer-In-Training Certificate)

SCHOLARLY PUBLICATIONS & PRESENTATIONS

A. Refereed Journal Publications (*Graduate Mentee, **Undergraduate Mentee, ***Postdoc Mentee)

2025

1. Bhattarai*, P., Annamalai***, S., Kim, N., Hwang, S. Sustainable PFAS Remediation: PFOA Adsorption onto Biochar Derived from Invasive Water Hyacinth. (In preparation)
2. Mandal, S., Babatunde*, E., Jha**, A., Quinto**, C., Morales**, D., Smart, K., Shi, S., Hwang, S. Biochar from Fruit Processing Waste for Trichloroethylene Remediation: Toward Toxicological Risk Reduction and Circular Waste Utilization. (In preparation)
3. Atikune, A., Lee, S., Dangol**, P., Hwang, S. UV/Sulfite Advanced Photochemical Reduction for Aqueous PFOA and PFOS Removal. *Journal of Emerging Contaminants* (under review)
4. Annamalai***, S., Kim, N., Hwang, S. Performance of a 3D-particle electrode for PFOA degradation by persulfate-activated electrochemical advanced oxidation processes. *Journal of Hazardous Materials: Organics* (under review)
5. Mandal, S., Babatunde*, E., Gurav, R., Bhatia, S.K., Jha**, A., Hwang, S. Magnetic Nano Biochar-Based Composites for Trichloroethylene (TCE): An Integrated Review of Sources, Environmental Toxicity, and Advanced Remediation Strategies. *Groundwater for Sustainable Development* (under review)
6. Agyemang*, P., Mandal, S., Hwang, S. Performance–Sustainability Paradox of Biodegradable Superabsorbent Hydrogels in Agriculture: A Review. *Agronomy for Sustainable Development* (under review)
7. Agyemang*, P., Biediger-Friedman, L., Hwang, S. The Impact of Rising Climate-Induced Temperatures on Nutrition Security in Older Populations: A Review. *Journal of Population Ageing* (under review)
8. Agyemang*, P., Hwang, S. Synergistic Integration of Smart Irrigation and LID: A Paradigm Shift for Residential Water Sustainability and LEED Certification in Arid U.S. Regions. *Urban Water Journal* (under review)
9. Babatunde*, E., Gurav, R., Hwang, S. Biochar Derived from Giant Reed and Water Lettuce for Adsorptive and Oxidative Remediation of Crystal Violet Dye in Water. *Water Practice & Technology* (under review)
10. Annamalai***, S., Kim, N., Hwang, S. 2025. Enhanced PFOA degradation via persulfate-assisted electrochemical oxidation: Performance, mechanistic insights, and toxicity analysis. *Journal of Environmental Chemical Engineering* **13**, 119424. https://doi.org/10.1016/j.jece.2025.119424
11. Tandian, K., Samiyappan, K., Rangasamy, A., Raju, I., Dhanuskodi, K., Bose, J., Annamalai***, S., Hwang, S. 2025. Bacillus-Enriched Organophosphorus Biochar Formulations Increase Soil Microbial Diversity and Pigeon Pea Yield. *Land Degradation & Development*. https://doi.org/10.1002/ldr.5557

2024

12. Gurav, R., Ji, C., Hwang, S. 2024. Investigating the Potential of River Sediment Bacteria for Trichloroethylene Bioremediation. *Water* **16**, 2941. https://doi.org/10.3390/w16202941
13. Swathy, R., Geethalakshmi, V., Pazhanivelan, S., Kannan, P., Annamalai***, S., Hwang, S. 2024. Real-time nitrogen monitoring and management to augment N use efficiency and ecosystem sustainability – A review. *Journal of Hazardous Materials Advances* **16**, 100466. https://doi.org/10.1016/j.hazadv.2024.100466

14. Hwang, S., Johnson, C.M., Charles, J., Biediger-Friedman, L. 2024. Food Delivery Apps and Their Potential to Address Food Insecurity in Older Adults: A Review. *International Journal of Environmental Research and Public Health* **21**, 1197. https://doi.org/10.3390/ijerph21091197
15. Babatunde*, E., Gurav***, R., Hwang, S. 2024. *Pistia stratiotes* L. Biochar for Sorptive Removal of Aqueous Inorganic Nitrogen. *Materials* **17**, 3858. https://doi.org/10.3390/ma17153858
16. Mandal*, S., Gurav***, R., Hwang, S. 2024. Seed gum-based polysaccharides hydrogels for sustainable agriculture: A review. *International Journal of Biological Macromolecules* **263**, 130339. https://doi.org/10.1016/j.ijbiomac.2024.130339
17. Khondoker*, M., Gurav***, R., Hwang, S. 2024. Utilization of Water Hyacinth (*Eichhornia crassipes*) Biomass as Eco-friendly Sorbent for Petroleum Oil Spill Cleanup. *AQUA - Water Infrastructure, Ecosystems and Society* **73(2)**, 183-199. https://doi.org/10.2166/aqua.2024.243

2023

18. Gurav***, R., Hwang, S., Bhatia, S.K., Mandal, S., Yang, Y.-H. 2023. Exopolysaccharide production using pinewood hydrolysate-based substrates for psychrophilic bacterium isolated from Svalbard glacier. *Biomass Conversion and Biorefinery* https://doi.org/10.1007/s13399-023-05039-2
19. Gurav***, R., Mandal, S., Smith, L., Shi, S.Q., Hwang, S. 2023. The potential of self-activated carbon for adsorptive removal of toxic phenoxyacetic acid herbicide from water. *Chemosphere* **339**, 139715. https://doi.org/10.1016/j.chemosphere.2023.139715
20. Mandal, S., Hwang, S., Marpu, S.B., Omary, M.A., Prybutok, V., Shi, S.Q. 2023. Bioinspired synthesis of silver nanoparticles for the remediation of toxic pollutants and enhanced antibacterial activity. *Biomolecules* **13**, 1054. http://doi.org/10.3390/biom13071054
21. Babatunde*, E., Gurav***, R., Hwang, S. 2023. Recent Advances in Invasive Aquatic Plant Biomass Pretreatments for Value Addition. *Waste and Biomass Valorization*. https://doi.org/10.1007/s12649-023-02186-5
22. Khondoker*, M., Mandal, S., Gurav***, R., Hwang, S. 2023. Freshwater Shortage, Salinity Increase, and Global Food Production: A Need for Sustainable Irrigation Water Desalination—A Scoping Review. *Earth* **4**, 223-240. https://doi.org/10.3390/earth4020012
23. Hand**, J., Hwang, C., Vogel*, W., Lopez, C., Hwang, S. 2023. An Exploration of Market Organic Sanitary Products for Improving Menstrual Health and Environmental Impact. *Journal of Water, Sanitation and Hygiene for Development* **13(2)**, 63-77. https://doi.org/10.2166/washdev.2023.020

2022

24. Mandal, S., Hwang, S., Shi, S. 2022. Guar gum, a low-cost sustainable biopolymer, for wastewater treatment: A review. *International Journal of Biological Macromolecules* **226**, 368-382. https://doi.org/10.1016/j.ijbiomac.2022.12.039
25. Hwang, S., Yeon, J.H. 2022. Fly ash-added, sea water-mixed pervious concrete: Compressive strength, permeability, and phosphorus removal. *Materials* **15**, 1407. https://doi.org/10.3390/ma15041407
26. Vogel*, W., Hwang, C.D., Hwang, S. 2022. Gender and Sanitation: Women's Experiences in Rural Regions and Urban Slums in India. *Societies* **12**, 18. https://doi.org/10.3390/soc12010018
27. Hwang, S., Ozbakkaloglu, T., Kazmi***, S.M.S., Munir***, M.J. 2022. Influence of Off-Spec Fly Ash and Surfactant-Coated Nano-Iron-Oxide on the Fresh and Hardened Properties of Cement Pastes: An Exploratory Study. *Journal of Building Engineering* **48**, 103976. https://doi.org/10.1016/j.jobe.2021.103976

2021

28. Hwang, S., Moreno Cortes*, C. 2021. Properties of mortar and pervious concrete with co-utilization of coal fly ash and waste glass powder as partial cement replacements. *Construction & Building Materials* **270**, 121415. https://doi.org/10.1016/j.conbuildmat.2020.121415

2019

29. Hwang, S., Terán-Rondón*, R., Morales-Vélez, A., Segarra-Montelala, R., Somoza, López J., Ruiz-Vale, I. Daleccio, E. 2019. Pervious Concrete Pavement to Make a Public Plaza More Handicap Accessible and Environmentally Friendly. *Revista Dimensión CIAPR* **33**, 27-36.

2018

30. Arocho-Irizarry*, M., Segarra, R., Diaz, V., Hwang, S. 2018. Eco-friendly pervious concrete infrastructure for stormwater management and bicycle parking: A case study. *Urban Water Journal* **15**, 713-721. https://doi.org/10.1080/1573062X.2018.1536760

2017

31. López-Carrasquillo*, V., Hwang, S. 2017. Comparative assessment of pervious concrete mixtures containing fly ash and nanomaterials for compressive strength, physical durability, permeability, water quality performance and production cost. *Construction & Building Material*, **139**, 148-158. https://doi.org/10.1016/j.conbuildmat.2017.02.052
32. Hwang, V., Masters**, A., Arocho*, M., Hwang, S. 2017. Fly ash-amended pervious concrete pavement followed by bamboo bioretention basin with *Dracaena sanderiana* for urban stormwater runoff control. *Construction & Building Materials* **132**, 161-169. https://doi.org/10.1016/j.conbuildmat.2016.11.134

2016

33. Soto-Pérez*, L., Hwang, S. 2016. Mix design and pollution control potential of pervious concrete with non-compliant waste fly ash. *Journal of Environmental Management* **176**, 112-118. https://doi.org/10.1016/j.jenvman.2016.03.014

2015

34. Soto-Pérez*, L., Lopez*, V., Hwang, S. 2015. Response Surface Methodology to optimize the cement paste mix design: Time-dependent contribution of fly ash and nano-iron oxide as admixtures. *Materials & Design* **86**, 22-29. https://doi.org/10.1016/j.matdes.2015.07.049
35. Jo*, M., Soto*, L., Arocho*, M., St John*, J., Hwang, S. 2015. Optimum mix design of fly ash geopolymer paste and its use in pervious concrete for removal of fecal coliforms and phosphorus in water. *Construction & Building Materials **93**, 1097-1104.* https://doi.org/10.1016/j.conbuildmat.2015.05.034
36. Vázquez-Rivera*, N., Soto-Pérez*, L., St John*, J., Molina-Bas, O., Hwang, S. 2015. Optimization of pervious concrete containing fly ash and iron oxide nanoparticles and its application for phosphorus removal. *Construction & Building Materials* **93**, 22-28. https://doi.org/10.1016/j.conbuildmat.2015.05.110

2014

37. Hossain***, F., Perales-Perez, O.J., Hwang, S., Román, F. 2014. Antimicrobial nanomaterials as water disinfectant: Applications, limitations and future perspectives. *Science of the Total Environment* **466-467**, 1047-1059. https://doi.org/10.1016/j.scitotenv.2013.08.009

2012

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40. Latorre*, I., Hwang, S., Sevillano**, M. Montalvo, R. 2012. PVC Biodeterioration and DEHP Leaching by DEHP-degrading Bacteria. *International Biodeterioration & Biodegradation* **69**, 73-81. https://doi.org/10.1016/j.ibiod.2011.12.011

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41. Hwang, S., Martinez*, D., Perez, P., Rinaldi, C. 2011. Effect of surfactant-coated iron oxide nanoparticles on the effluent water quality from a simulated sequencing batch reactor treating domestic wastewater. *Environmental Pollution* **159**, 3411-3415. https://doi.org/10.1016/j.envpol.2011.08.032
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46. Hwang S., Hernandez* V. 2010. Manufactured Coal Ash Aggregates for Aqueous TNT Sorption. *Coal Combustion and Gasification Products* **2**, 35-37. https://doi.org/10.4177/CCGP-D-09-00022.1
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49. Hwang S., Ruff T.J., Bouwer E.J., Larson S.L., Davis J.L. 2005. Applicability of alkaline hydrolysis for remediation of TNT-contaminated water. *Water Research* **39**, 4503 -4511. https://doi.org/10.1016/j.watres.2005.09.008
50. Hwang S., Batchelor C.J., Davis J.L., MacMillan D.K. 2005. Sorption of 2,4,6-trinitrotoluene to natural soils before and after hydrogen peroxide application. *Journal of Environmental Science and Health, Part A-Toxic/Hazardous Substances & Environmental Engineering* **40(3)**, 581-592. https://doi.org/10.1081/ESE-200046604

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59. Hwang S., Min K.-S. 2003. Improved sludge dewatering by addition of electro-osmosis to belt filter press. *Journal of Environmental Engineering and Science* **2(2)**, 149-153. https://doi.org/10.1139/s03-013
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61. Hwang S., Cutright T.J. 2002. Biodegradability of aged pyrene and phenanthrene in a natural soil. *Chemosphere* **47(9)**, 891-899. https://doi.org/10.1016/S0045-6535(02)00016-4
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63. Hwang S., Cutright T.J. 2002. The impact of contact time on pyrene sorptive behavior by a sandy-loam soil. *Environmental Pollution* **117(3)**, 371-378. https://doi.org/10.1016/S0269-7491(01)00202-0
64. Hwang S., Cutright T.J. 2002. Statistical impacts of the extent of desorption, compound aging and bacteria inoculation on PAH biodegradation. *Polycyclic Aromatic Compounds* **22(5)**, 1057-1074. http://dx.doi.org/10.1080/10406630214287

1995

65. Min K.-S., Kim H.-T., Hwang S., Ahn Y.-H., Nam K.-H, Seo K.-H. 1995. A study on sludge dewatering using electroosmotic belt press filter. *Journal of Korean Solid Wastes Engineering Society* **12(5)**, 544-551.

1994

66. Min K.-S., Ahn Y.-H., Hwang S., Um W.-T., Lee S.-H. 1994. The characteristics and heating values analysis of municipal solid wastes. *Journal of Korean Solid Wastes Engineering Society* **11(4)**, 75-87.

B. Books and Technical Reports (*Graduate Mentee, **Undergraduate Mentee, * Postdoc Mentee)**

2023

1. Patil, P.M., Parthasarathy, A.K., Matkar, A.R., Muhamuni-Badiger, P., Hwang, S., Gurav***, R., Dhanavade, M.J. (2023). Nitrite-oxidizing Bacteria: Cultivation, Growth Physiology, and Chemotaxonomy. In: Ammonia Oxidizing Bacteria. Applications in Industrial Wastewater Treatment (Ed. Shah, M.P.). Royal Society of Chemistry. (ISBN-13: 9781839166877). Pp. 174-197. https://doi.org/10.1039/BK9781837671960-00174

2. Shaheen, F., Ravinder, P., Jadhav, R., Valekar, N., Hwang, S., Gurav***, R., Jadhav, J. (2023). Oleaginous microbes for biodiesel production using lignocellulosic biomass as feedstock. In: Green Approach to Alternative Fuel for a Sustainable Future (Ed. Shah, M.). Elsevier. (ISBN: 978-0-12-824318-3). Pp. 271-296. https://doi.org/10.1016/B978-0-12-824318-3.00020-5

3. Patil, P.M., Ingavale, R.R., Matkar, A.R., Hwang, S., Gurav***, R., Dhanavade, M.J. (2023). An Innovative and Effective Industrial Wastewater Treatments: A Brief History and Present Scenario. In: Advanced and Innovative Approaches of Environmental Biotechnology in Industrial Wastewater Treatment (Ed. Shah, M.). Springer. (ISBN: 978-981-99-2597-1), pp. 191-219. https://doi.org/10.1007/978-981-99-2598-8_10

4. Mahamuni-Badiger, P., Patel, P.R., Patil, P.M., Gurav***, R., Hwang, S., Dhanavade, M.J. (2023). Bioremediation of Industrial Wastewater: An Overview with Recent Developments. In: Advanced and Innovative Approaches of Environmental Biotechnology in Industrial Wastewater Treatment (Ed. Shah, M.). Springer. (ISBN: 978-981-99-2597-1), pp. 333-359. https://doi.org/10.1007/978-981-99-2598-8_15

2006

5. Bailey S.E., Hwang S., Brooks M.C., Schroeder P.R. (2006). "Evaluation of chemical clarification polymers and methods for removal of dissolved metals from CDF effluent". DOER Technical Notes (ERDC TN-DOER-R10), U.S. Army Engineer Research and Development Center, Vicksburg, MS
6. Pando M., Hwang S. (2006) "Possible Applications for Circulating Fluidized Bed Coal Combustion By-products from the Guayama AES Power Plant". Technical Report. Civil Infrastructure Research Center, University of Puerto Rico at Mayagüez, PR
7. Cutright T.J., Hwang S. (2006) "Polycyclic Aromatic Hydrocarbons (PAHs)." Pp. 2291-2299. In: Encyclopedia of Chemical Processing (Ed. Lee, S.). Marcel Dekker, Inc. New York, NY.
8. Hwang S. (2006) "Advanced Oxidation." Pp. 41-49. In: Encyclopedia of Chemical Processing (Ed. Lee, S.). Marcel Dekker, Inc. New York, NY.

2002

9. Hwang S. (2002) "Effect of soil properties, compound aging, and presence of cosolute on sorption, desorption, and biodegradation of polycyclic aromatic hydrocarbons in natural soils." Ph.D. Dissertation. University of Akron, OH.

1994

10. Hwang S. (1994) "Sludge dewatering using electroosmotic belt press filter." Master Thesis. Kyungpook National University, Korea.

C. Oral Presentations (*Graduate Mentee, **Undergraduate Mentee, * Postdoc Mentee)**

2025

11. Hwang, S., Annamalai***, S. "Resilience and Adaptability in PFAS Research and Workforce Development against Project Surprises and Left Turns." The 16th Annual TAAW/WEAT Summer Seminar, San Antonio, TX, September 5, 2025 (**Invited Talk**)

2024

12. Hwang, S. "Research on PFAS and Other Contaminants of Concern." BK21 Seminar, Hanyang University, South Korea, Dec. 18, 2024 (**Invited talk**)
13. Hwang, S. "Contaminants of Emerging Concern and Environmental Health Engineering under Climate Change." Research Exchange Seminar, Kyoto University, Japan, July 19, 2024 (**Invited talk**)
14. Hwang, S. "Nature-inspired Green Stormwater Infrastructure." Blue Bag Lunch & Learn, The Meadows Center, Texas State University, March 19, 2024. (**Invited talk**)

2022

15. Hwang, S. "Sustainability Innovation & Upcycling." Sustainability Symposium, Texas State University, April 21, 2022. (**Invited talk**)

2021

16. Hwang, S. "Improvement of Walkability and Stormwater Runoff Management with Pervious Concrete Pavement." Texas Regional Stormwater Conference (virtual), Jan 14, 2021

2018

17. Hwang V., Acevedo** Y., Román** A., Moreno* C., Terán* R., Hwang S. "Aqueous Phosphorus Removal and Recovery by Pervious Concrete." International Conference on Environmental Science and Technology, Houston, TX, Jun 25-29, 2018.

2017

18. Moreno-Cortés* C., Morales-Vélez A., González-Vélez** E., Hwang S. "Integrating Solid Waste Management and Transportation Safety with Pervious Concrete Bicycle Path." The 32nd International Conference on Solid Waste Technology and Management, Philadelphia, PA, Mar 19-22, 2017.
19. Arocho-Irizarry* M., Hwang S. "Pervious Concrete Pavement: An Ecofriendly Solution." The 32nd International Conference on Solid Waste Technology and Management, Philadelphia, PA, Mar 19-22, 2017.
20. Hwang V., Hwang S. "Phosphorus Recovery from Storm Water Runoff with Fly Ash-Added Pervious Concrete." The 32nd International Conference on Solid Waste Technology and Management, Philadelphia, PA, Mar 19-22, 2017.

2016

21. Hwang S., Jo* M. "Pollutant removal by pervious geopolymer concrete pavement placed on roadway shoulders." AWRA Annual Water Resources Conference, Orlando, FL, Nov 13-17, 2016.
22. Arocho* M., Hwang S. "Functional pervious concrete pavement for improvement of livability, safety and water sustainability." AWRA Annual Water Resources Conference, Orlando, FL, Nov 13-17, 2016.
23. Hwang S. "Pervious concrete pavement design, experiments and results." Puerto Rico Institute of Transportation Engineers Annual Technical Conference, San Juan, PR, Oct 21, 2016. (**Invited talk**)
24. Hwang V., Masters** A., Montalvo E., Hwang S. "Contaminant reduction by pervious concrete pavement and bamboo bioretention basin". International Conference on Environmental Science and Technology, Houston, TX, Jun 6-10, 2016.
25. Arocho* M., Hwang S. "Going green on campus with pervious concrete pavement." International Sustainable Concrete Conference, Washington DC, May 15-18, 2016.

26. Colucci B., Hwang S. "Pervious Concrete Pavement (PCP): An Innovative Approach to Enhance Safety, Livability and the Environment in Puerto Rico." Seminario de la Beca Ramón L. Carrasquillo 2016, San Juan, PR, Apr 8, 2016. (**Invited talk**)

27. Masters** A., Hwang S. "Stormwater BMP: Pervious concrete pavement and bamboo biofilter." Junior Technical Meeting (JTM) and the Puerto Rico Interdisciplinary Meeting (PRISM), Ponce, Puerto Rico, Mar 5, 2016.

2015

28. Hwang S. "Chemical Durability of Pervious Fly Ash Concrete under Acidic Environments." Pacifichem 2015, Honolulu, HI, Dec 15-20, 2015.

29. López-Carrasquillo* V., Soto-Pérez* L., Jo* M., St John* J., Arocho* M., Hwang S. "Comparative quality of water infiltrating through pervious concrete pavements." AWRA Annual Water Resources Conference, Denver, CO, Nov 16-19, 2015.

30. Hwang S., Soto* L. "Pervious concrete for agricultural runoff controls." StormCon 2015, Austin, TX, Aug 2-6, 2015.

31. Jo* M., Lopez* V., Soto* L., Hwang S. "Delayed Role of Fly ash and Alkali Activation in the Development of Compressive Strength of Geopolymer Paste cured at Ambient Temperature." World Engineers Summit, Singapore, Jul 21-24, 2015.

32. Jo* M., Soto-Pérez* L., Hwang S. "Optimization of fly ash geopolymer for early age strength development." 10th Asia Pacific Conference on Sustainable Energy & Environmental Technologies, Seoul, Korea, Jun 2-5, 2015.

33. Soto-Pérez* L., Vázquez* N., Molina O., Jo* M., Hwang S. "Effect of Iron-Oxide Nanoparticles on the Durability of Fly Ash Cement Paste." 5th International Symposium on Nanotechnology in Construction, Chicago, IL, May 24-26, 2015.

2014

34. Soto* L., St John* J., Suarez** C., Jo* M., Smith H., Hwang S. "Inactivation of fecal coliforms during rain harvesting with engineered pervious layer." 23rd Caribbean Water & Wastewater Association Annual Conference, Paradise Island, The Bahamas, Oct 6-9, 2014.

35. Hwang S. "Flask-to-field toward Non-PRASA water sustainability", EPA Region 2 Caribbean Science Workshop, San Juan, PR, Sep. 11, 2014. (**Invited talk**)

36. Vazquez* N., Soto* L., Santiago** R., Hwang S. "Optimization by Response Surface Methodology of pervious concrete containing fly ash and engineered iron oxide nanoparticles." International Concrete Sustainability Conference, Boston, MA, May 12-15, 2014.

37. Soto* L., Vazquez* N., Santiago** R., Hwang S. "Characterization of cement paste containing coal fly ash and engineered iron-oxide nanoparticles." 247th ACS National Meeting, Dallas, TX, Mar 16-20, 2014.

38. Rodriguez* J.M., Hernandez B., Tarafa P.J., Papadopoulos C., Hwang S. "Development of a Procedure and Apparatus to Quantify Pathogen Reduction throughout an Intermittent Biosand Filter" International Perspective on Water Resources & The Environment, Quito, Ecuador, Jan 8-10, 2014.

2012

39. Hwang, S. "Impact of engineered magnetic nanoparticles on effluent quality from biological wastewater treatment." Brain Korea 21 Climate Change Environmental Energy Research Center, Daegu, Korea, Dec 20, 2012. (**Invited talk**)

40. Hwang S., Martinez* D., Perez** P., Rinaldi C. "Resilience of SBR Activated Sludge System against the Presence of Engineered Iron-Oxide Nanoparticles" International Conference of Environmental and Agricultural Engineering, Jeju Islands, South Korea, Jun 29-30, 2012.

2011

41. Hwang S., Martinez D., Perez P., Rinaldi C. "Presence of iron oxide nanoparticles in wastewater disinfection" IUPAC, San Juan, PR, Jul 30-Aug 5, 2011.

42. Torres* P., Hwang S. "Waste-To-Resource: Applicability of coal ash concrete for freshwater quality enhancement" IUPAC, San Juan, PR, Jul 30-Aug 5, 2011.

43. Escobar* Z., Hwang S. "Waste-To-Resource: Characteristics of landfill leachate in different hydrological sequences with coal combustion byproducts aggregates as an alternative reactive daily cover" IUPAC, San Juan, PR, Jul 30-Aug 5, 2011.

44. Hwang S., Anaya* N., Serrano** N. "Natural Polymer-Aided Alcohol Flushing for Enhancement of TCE Remediation: Effects of Soil Property and Permeability" Air & Waste Management Conference, Orlando, FL, Jun 21-24, 2011.

45. Hwang S., Torres* P., Colon** C. "Coal Ash Concrete Blocks for Reduction of Algal Growth and Ammonia Toxicity" World Of Coal Ash, Denver, CO, May 9-12, 2011.

46. Hwang S., Latorre* I. "Topical Application of Manufactured Aggregates to *Cordyline fruticosa* and *Phaselous vulgaris*" World Of Coal Ash, Denver, CO, May 9-12, 2011.

2010

47. Sevillano** M., Hwang S., Rosado** S., Concepcion* D., Latorre* I., Montijo** L. "Isolation and enrichment of DEHP-degraders from landfill leachate and DEHP biodegradation" SERMACS, New Orleans, LA, Nov 30-Dec 4, 2010.

48. Sevillano** M., Hwang S., Rosado** S., Concepcion* D., Latorre* I. "Di(2-ethylhexyl) Phthalate Ester (DEHP)-Degraders Isolated from Landfill Leachate", 34th ACS Senior Technical Meeting, Mayaguez, PR, Nov 5, 2010.

49. Concepcion* D., Hwang S., Falcon* J., Sinha R., Impellitteri C. "Field Testing of a Small Water Purification System for Non-PRASA Communities", World Environmental & Water Resources Congress, Providence, RI, May 16-20, 2010.

2009

50. Hwang S., Concepcion* D., Falcon* J. "Small Filtration and Disinfection Unit for a Point-of-Entry Cistern Water Purification", Caribbean Water and Wastewater Association Annual Conference, St. Thomas, USVI, Oct 4-9, 2009.

51. Hwang S., Concepcion* D., Fonseca** A., Falcon* J., Sinha R. "Evaluation of Small Drum Filtration and Disinfection Units for Small, Rural Communities", American Water Works Association Annual Convention, San Diego, CA, June 14-18, 2009.

52. Escobar* Z., Lugo** Y., Hwang S. "Biochemical Response of Landfill with Manufactured Aggregates as a Daily Cover", World of Coal Ash Conference, Lexington, KY, May 4-7, 2009.

53. Hwang S., Padilla I., Feliciano** I., Falcon* J. "Transport and Distribution of TNT and DNT in the Presence of Surface Vegetation with *Fimbristylis cymosa*", SPIE, Orlando, FL, April 13-17, 2009.

54. Lugo** Y., Escobar* Z., Hwang S. "Landfills with Coal Combustion Byproducts as an Alternative Daily Cover", Puerto Rico Interdisciplinary Scientific Meeting (PRISM), Rio Piedras, PR, Mar 14, 2009.

2008

55. Hwang S., Escobar* Z., Hernandez* V., Latorre* I., Hernandez* I., Fonseca** A., Del Moral** A. "Environmental Engineering Applications of Coal Combustion Byproducts Aggregates", International Conference on Environmental Science and Technology (ICEST), Houston, TX, Jul 28-31, 2008.

56. Fonseca** A., Concepcion* D., Sanchez** S., Lugo** Y., Hwang S., Sinha R. "Development of a Water Purification System for Rural Community Sustainability", CoHemis International Conference on Green Communities, Mayaguez, PR, June 18-20, 2008.

57. Herrera* M., Concepcion* D., Hwang S., Pagan-Trinidad I. "Environmental Engineering Approach for Rural Community Water Sustainability", CoHemis International Conference on Green Communities, Mayaguez, PR, June 18-20, 2008.

58. Hwang S. "Current Engineering Approaches to Enhance PR Rural Community Water Quality", 1st Rural (Non-PRASA) Community Water Supply and Sanitation Workshop, Mayaguez, PR, Feb. 25, 2008. (invited talk)

2007

59. Fonseca** A., Hwang S., Escobar* Z. "Hydraulic and Biochemical characteristics of Coal Combustion Byproducts Aggregates as Alternative Daily Cover for Landfills", 7th Caribbean Islands Water Resources Congress, St. Croix, US Virgin Islands, Oct. 25 – 26, 2007.

60. Sanchez** S., Hwang S., Concepcion* D. "Telemetry Monitoring of Small Water Supply", 7th Caribbean Islands Water Resources Congress, St. Croix, US Virgin Islands, Oct. 25 – 26, 2007.

61. Padilla I., Hwang S. "Development of Physical Systems for Fate and Transport Measurements of TNT and DNT in Variably-Saturated Soils", AGU Joint Assembly, Acapulco, Mexico, May 23 – 25, 2007.

62. Padilla I., De Lourdes* M., Gutierrez* J., Torres* A., Hwang S. "Transport of Explosives Related Chemicals from Point Sources", SPIE, Orlando, FL, April 9-13, 2007.

63. Rodriguez** S., Padilla I., Hwang S. "Development of a multi-scale parking methodology for evaluating fate and transport processes of explosives-related chemicals in clayey soils", SPIE, Orlando, FL, April 9-13, 2007.

64. Del Moral** A., Hwang S. "The Use of Coal Combustion Byproducts for In-Situ Capping Amendment in the Sequestration of Heavy Metals", COINAR, Bayamon, Puerto Rico, March 17, 2007.

65. Fonseca** A., Hwang S. "Agremax as an alternative Landfill Daily Cover", COINAR, Bayamon, PR, Mar 17, 2007.

2006

66. Hwang S., Davis J.L. "High Explosives Alkaline Hydrolysis in Continuous Stirred Tank Reactor." 4th Latin American and Caribbean Consortium of Engineering Institution (LACCEI). Mayagüez, PR. June 21-23, 2006

2005

67. Hwang S., Davis J.L. "Remediation of TNT-Contaminated Water with Coupled Alkaline Hydrolysis and UV/H_2O_2 Oxidation." World Federation of Engineering Organizations (WFEO). San Juan, PR. October 16-22, 2005

2003

68. Hwang S., Felt D.R., Bouwer E.J., Larson S.L., Davis J.L. "Kinetics and treatability of aqueous alkaline hydrolysis for hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)." Air & Waste Management Association's 96th Annual Conference & Exhibition. San Diego, CA. June 22-26, 2003.

2001

69. Hwang S., Cutright T.J. "Bioavailability of phenanthrene and pyrene aged for 0 and 200-d in a silty-sand soil." Division of Industrial and Engineering Chemistry, 222nd American Chemical Society National Meeting. Chicago, IL. August 26-30. 2001.

70. Hwang S., Cutright T.J. "Effect of aging, bacterial source and desorption on PAH biodegradation." 6th International In-Situ and On-site Bioremediation Symposium. San Diego, CA. June 4-7, 2001.

2000

71. Hwang S., Cutright T.J. "The effect of desorbability on biodegradation of pyrene in a natural soil." 1st Great Lakes Civil Engineering Graduate Student Research Symposium. Case Western Reserve University, OH. May 31, 2000.

B. Poster Presentations (*Graduate Mentee, **Undergraduate Mentee, * Postdoc Mentee)**

2025

1. Bhattarai*, P., Annamalai, S., Hwang, S. A treatment Train of Biochar Adsorption and UV Photodegradation for PFOA Remediation in Groundwater. Groundwater Week 2025, New Orleans, December 9-11, 2025.
2. Babatunde*, E., Song, I.-H., Kim, N., Hwang, S. Coupled Adsorption and Dechlorination of TCE Vapors on Fe-Loaded Biochar. Groundwater Week 2025, New Orleans, December 9-11, 2025.
3. Irizarry Chico**, A., Annamalai***, S., Hwang, S. Efficient and Sustainable Removal of Perfluorocarboxylic Acids in Water Using UV-Activated nZVI-N-WH Biochar. SETAC North America 46th Annual Meeting, Portland, WA, November 16-20, 2025.
4. Babatunde*, E., Mandal, S., Song, I.-H., Kim, N., Hwang, S. Soil Vapor Extraction and Biochar Adsorption for TCE Remediation under Varying Hydrogeochemical Conditions. 2025 RemPlex Global Summit, Richland, WA, November 4-6, 2025.
5. Agyemang*, P., Speed, J., Hwang, S. Hydrologic Modeling and Low-Impact Development Assessment for Smart Irrigation in Wilson Historic District. 2025 Graduate Student Research Conference, San Marcos, TX, April 8, 2025.
6. Bhattarai*, P., Hwang, S. Adsorptive PFAS Removal by Water Hyacinth Biochar. 2025 Graduate Student Research Conference, San Marcos, TX, April 8, 2025.

2024

7. Dhital**, P., Dangol**, P., Kim**, Y., Hwang, S., Mandal, S. Sustainable low-cost adsorbent for efficient removal of toxic dye. 2024 TXST Honors College Undergraduate Conference, San Marcos, TX, April 18, 2024.
8. Moss**, R., Kim**, Y., Gurav***, R., Hwang, S., Mandal, S. Application of biochar in protecting human health and environment. 2024 TXST Honors College Undergraduate Conference, San Marcos, TX, April 18, 2024.
9. Gurav***, R., Ji, C., Song, I.-H., Hwang, S. "Trichloroethylene (TCE) bioremediation with newly isolated microbes from a local river sediment." Waste Management Symposia, Phoenix, AZ, March 10 – 14, 2024.
10. Babatunde*, E., Gurav***, R., Ji, C., Song, I.-H., Hwang, S. "Treatment train of trichloroethylene: Adsorptive and oxidative remediation." Waste Management Symposia, Phoenix, AZ, March 10 – 14, 2024.
11. Ball*, J., Gurav***, R., Ji, C., Kumar, M., Song, I.-H., Hwang, S. "Isolated aerobic soil bacteria grown with TCE as the sole substrate." Waste Management Symposia, Phoenix, AZ, March 10 – 14, 2024.
12. Mandal, S., Hwang, S., Sen, K. "Latest innovations in natural gum-based polymer." Health Scholar Showcase, Translational Health Research Center, San Marcos, TX, March 1, 2024.

2023

13. Babatunde*, E., Gurav***, R., Hwang, S. "Fenton-like Degradation of Crystal Violet Dye Catalyzed by Biochar Derived from Invasive Plant Species." AWRA 2023 Annual Water Resources Conference, Raleigh, NC., November 6-8, 2023.
14. Howard*, K., Hwang, S., You, B., Song, I.-H. "Design of Capacitive Micromachined Ultrasonic Transducers (CMUTs) for Enhanced Mass-Loading Effect Resonant Sensing." International Mechanical Engineering Conference & Exposition, New Orleans, LA, October 29 – November 2, 2023.
15. Tirado-Corbala, T., Munõz-Munõz, M., Hwang, S. "Coal fly ash and glass powder as soil amendment on acids soils of Puerto Rico." The 2023 ASA, CSSA, SSSA International Annual Meeting, St. Louis, MO, October 29 – November 1, 2023.
16. Mandal, S., Gurav***, R., Dhital** P., Quinto**, C., Chi**, H., Hwang, S. "Recent Advancement of Guar Gum based Hydrogel in Sustainable Agriculture and Water Purification." 66th Annual Convention of International Society of Wood Science and Technology, Asheville, NC, June 25-30, 2023.
17. Babatunde*, E.O., Gurav***, R., Hwang, S. "Investigating the Effect of Pyrolysis Temperature on Aqueous Nitrogen Removal Using Invasive Aquatic Plant-based Biochar." 2023 Graduate Student Research Conference, San Marcos, TX, April 4, 2023.
18. Babatunde*, E.O., Gurav***, R., Hwang, S. "Adsorption potential of water lettuce (*Pista stratiotes*) biochar for nitrogen removal in water." The 2023 TXST STEM Conference, San Marcos, TX, March 24, 2023.
19. Khondoker*, M., Gurav***, R., Hwang, S. "Adsorption of petroleum hydrocarbon using water hyacinth (*Eichhornia crassipes*) biomass." The 2023 TXST STEM Conference, San Marcos, TX, March 24, 2023.
20. Mandal, S., Hwang, S. "Guar gum, a versatile natural polymer to improve human health and water quality." Health Scholar Showcase, Translational Health Research Center, San Marcos, TX, March 3, 2023.

2022

21. Krylova** V., Hwang S. "Frugal and Sustainable Plant-Based Sorption and Filtration Media for Aqueous PAH Decontamination." 16th Annual Undergraduate Research Conference & Thesis Forum, San Marcos, TX, April 20-22, 2022.
22. Shanahan** S., Hwang S. "Feeding Three Birds with One Scone: Meeting Social, Environmental, and Economic Needs All at Once." 16th Annual Undergraduate Research Conference & Thesis Forum, San Marcos, TX, April 20-22, 2022.
23. Khondoker* M., Rahman M.M., Hwang S. "Impact of Municipal Solid Waste Landfill on Climate Change and Human Well-being: A Case Study on Aminbazar Landfill, Dhaka North City Corporation, Bangladesh." International Research Conference, San Marcos, TX, April 5-8, 2022.

2016

24. Moreno* C., Morales A., González* E., Hwang S. “Improving Transportation Safety and Environmental Sustainability with Pervious Concrete Bicycle Path.” Puerto Rico Institute of Transportation Engineers Annual Technical Conference, San Juan, PR, Oct 21, 2016.

25. Arocho* M., Hwang S. “Pervious concrete bicycle parking lot for improvement of livability and environmental safety on campus.” Puerto Rico Institute of Transportation Engineers Annual Technical Conference, San Juan, PR, Oct 21, 2016.

26. Terán* R., Morales A., Hwang S. “Pervious Concrete Pavement on a UPRM Public Plaza to Improve Safety and Livability.” Puerto Rico Institute of Transportation Engineers Annual Technical Conference, San Juan, PR, Oct 21, 2016.

2015

27. López* V., Soto-Pérez* L., St John* J., Jo* M., Arocho* M., Hwang S. "Water Quality improvement with pervious pavement.” Caribbean Water & Wastewater Association Annual Conference, Miami, FL, Aug 24-28, 2015.

28. Arocho* M., St John* J., Soto-Pérez* L., Jo* M., López* V., Hwang S. “Strength, workability and cost of fly ash geopolymer paste. Caribbean Water & Wastewater Association Annual Conference, Miami, FL, Aug 24-28, 2015.

29. Hwang S., Smith H. “Engineered pervious layer for pathogen removal during rainwater harvesting.” ACS Northeast Regional Meeting, Ithaca, NY, Jun 10-13, 2015.

2014

30. St John* J., Soto* L., Hwang S. “Fecal coliform removal by fly-ash-aided pervious concrete.” XIX Sigma Xi, University of Puerto Rico, PR, April 3, 2014.

31. Torres**, I., Santiago** R., Vazquez* N., Hwang S. “Bioclogging and Fenton regeneration of pervious concrete pavements.” XIX Sigma Xi, University of Puerto Rico, PR, April 3, 2014.

32. Pagan* K., Perez** P., Hwang S. “Wastewater effluent disinfection in the presence of engineered iron oxide nanoparticles.” 247th ACS National Meeting, Dallas, TX, Mar 16-20, 2014.

33. Hernandez* M., Illas J., Hwang S., “Inactivation of *Bacillus subtilis* by a sequential filtration and disinfection for rural community water supply.” 247th ACS National Meeting, Dallas, TX, Mar 16-20, 2014.

2013

34. Latorre* I., Hwang S. “Application of SBA-15 in adsorption-Fenton oxidation process for simultaneous remediation of DEHP and As(III).” American Geophysics Union Fall Meeting, San Francisco, CA, Dec 9-13, 2013.

35. Soto* L., Rivera* K., Conde** M., Hwang S. “Structural and hydrological properties of pervious fly ash concrete.” Puerto Rico Water & Environmental Association Annual Convention, San Juan, PR, May 22-24, 2013.

36. Soto* L., Rivera* K., Conde** M., Hwang S. “Structural properties of fly ash-aided pervious composite.” XVIII Sigma Xi, University of Puerto Rico, PR, April 25, 2013.

37. Latorre* I., Hwang S., Hernández-Maldonado A. “Statistical approach for the optimization of di-(2hexylethyl) phthalate and arsenic removal by adsorption-Fenton oxidation process.” 33rd Puerto Rico Interdisciplinary Scientific Meeting (PRISM), Caguas, PR, March 19, 2013.

2012

38. Hwang S., Concepción* D., Hernandez* M. “Solar-powered engineered experimental drum filtration and disinfection for rural community water sustainability.” IWA Asia Pacific Young Water Professionals Conference, Tokyo, Japan, Dec 7-10, 2012.

39. Hwang S., Martinez* D., Perez** P., Pagan* K. “Effect of hydraulic retention times on effluent quality and disinfection in biological wastewater treatmentwith engineered iron-oxide nanoparticles.” IWA Asia Pacific Young Water Professionals Conference, Tokyo, Japan, Dec 7-10, 2012.

40. Hwang S., Latorre* I., Caban** M., Soto** B., Montalvo-Rodríguez R., Hernández-Maldonado A. “Adsorption and Fenton regeneration of SBA-15 for di-(2-ethylhexyl) phthalate leached from PVC sheets by Gram-positive strains LHM1 and LHM2.” American Geophysics Union Fall Meeting, San Francisco, CA, Dec 3-7, 2012.

41. Martinez* D., Perez* P., Hwang S., Rinaldi C. “Stability of Iron Oxide Nanoparticles at Different Treatment Stages of a Simulated Wastewater Plant and Its Influence on Water Quality.” 32nd Puerto Rico Interdisciplinary Scientific Meeting (PRISM), Carolina, PR, March 10, 2012.

42. Latorre* I., Vazquez* N., Sevillano** M., Hwang S., Montalvo R. “Growth-linked Biodegradation and Thermogravimetric Stability of PVC by DEHP Degrading Bacteria Isolated from Landfill Leachate.” 32nd Puerto Rico Interdisciplinary Scientific Meeting (PRISM), Carolina, PR, March 10, 2012.

43. Rodriguez* L., Hwang S. “Calcium Alginate Beads (AG) for Adsorption of Heavy Metals in a Point-Of-Entry Cistern Purification Unit (CPU)”. 32nd Puerto Rico Interdisciplinary Scientific Meeting (PRISM), Carolina, PR, March 10, 2012.

2011

44. Latorre* I., Hwang S., Montalvo R. "PVC biodeterioration by landfill bacteria capable of using di-(2-ethylhexyl) phthalate as the sole carbon source" Superfund Research Program Annual Meeting, Oct. 24-25, 2011, Lexington, KY.

45. Irizarry* E., Latorre* I., Hwang S. “Interactive Effects of Soil Properties and Manufactured Coal Ash Aggregates on Groundwater Quality.” World Of Coal Ash, Denver, CO, May 9-12, 2011.

46. Escobar* Z., Hwang S. "Greater Landfill Settlement in an earlier stage with Microbial Activity Enhancement", XVI Sigma Xi, University of Puerto Rico, PR, April 12, 2011.
47. Latorre* I., Hwang S., Montalvo R., Sevillano** M., Montijo** L. "Growth-linked Biodeterioration of Plastic Materials by DEHP-Degrading Bacteria", XVI Sigma Xi, University of Puerto Rico, PR, April 12, 2011.
48. Rodriguez* L., Hwang S. "Disinfection By-products Occurrence and Escherichia-coli Removal in a Point-of-Entry Cistern Purification Unit (POE-CPU)", XVI Sigma Xi, University of Puerto Rico, PR, April 12, 2011.
49. Martinez* D., Hwang S., Rinaldi C., Perez** P. "Engineered Iron Oxide Nanoparticles in Biological Wastewater Treatment", 31st Puerto Rico Interdisciplinary Scientific Meeting (PRISM), Bayamon, PR, March 12, 2011.
50. Falcon* J., Hwang S. "Remediation of Explosives-Containing Water with Crumb Rubber", 31st Puerto Rico Interdisciplinary Scientific Meeting (PRISM), Bayamon, PR, March 12, 2011.

2010

51. Hwang S., Anaya* N., Benn** K., Padilla I. "Biopolymers to modify permeability for in-situ alcohol flushing of TCE", CeRMACS, Dayton, OH, June 16-19, 2010.
52. Lugo** Y., Hwang S., Colucci J. "Biomethanation of chicken manure", XV Sigma Xi, University of Puerto Rico, PR, April 8, 2010.
53. Benn** K., Hwang S., Anaya* N., Padilla I. "Alginic acid-aided alcohol flushing for TCE removal from tight zones", XV Sigma Xi, University of Puerto Rico, PR, April 8, 2010.
54. Rodriguez* L., Hwang S., Sevillano M., Concepcion D. "Point-of-Entry (POE) Cistern Water Purification Unit (CPU) Development", XV Sigma Xi, University of Puerto Rico, PR, April 8, 2010.
55. Hwang S., Herrera* M. "Development of a decision support tool to ensure safe drinking water in rural communities in Puerto Rico", AWRA Spring Specialty Conference, Orlando, FL, Mar 29-31, 2010.
56. Anaya* N., Hwang S., Benn** K., Padilla I. "Polymer-Aided Alcohol Flushing to Enhance TCE Remediation: Effect of Methanol Concentrations and Contact Times", 30th Puerto Rico Interdisciplinary Scientific Meeting (PRISM), Mayaguez, Mar 13, 2010.
57. Concepcion* D., Hwang S., Falcon* J. "Engagement of Diverse Student Pool to Small Community Water Sustainability", 30th Puerto Rico Interdisciplinary Scientific Meeting (PRISM), Mayaguez, Mar 13, 2010.
58. Escobar* Z., Hwang S., Lugo** Y. "Influence of Manufactured Coal Ash Aggregates used for Daily Covers on Landfill Leachate Characteristics", 30th Puerto Rico Interdisciplinary Scientific Meeting (PRISM), Mayaguez, Mar 13, 2010.

2009

59. Hwang S., Latorre* I., Hernandez* I. "Groundwater Quality and Phyto-Viability from Restored Open Pit", American Water Works Association Annual Convention, San Diego, CA, June 14-18, 2009.
60. Hernandez* V., Hwang S. "Explosives Sorption to Coal Ash Aggregates", World of Coal Ash, Lexington, KY, May 4-7, 2009.
61. Hernandez* I., Feliciano** I., Hwang S. "Bio-viability on Restored Open Pit with Coal Ash Aggregate Amendment", World of Coal Ash, Lexington, KY, May 4-7, 2009.
62. Latorre* I., Roman** D., Hwang S. "Feasibility of Open Pit Restoration with Coal Ash Aggregates: Ground Water Quality Assessment", World of Coal Ash, Lexington, KY, May 4-7, 2009.
63. Rosado** S., Acevedo** P., Lugo** Y., Roman** D., Falcon** J., Garcia** J., Hwang S. "Research and Education Advancement through Laboratory (REAL) Experience: INCI4998_Academic Year 2008-2009", XIV Sigma Xi, University of Puerto Rico, Mayaguez, PR, April 16, 2009.
64. Escobar* Z., Lugo** Y., Hwang S. "Dual-Purpose Landfills with Coal Combustion Byproducts Aggregates as Daily Cover: Resource Recovery and Reclamation", XIV Sigma Xi, University of Puerto Rico, Mayaguez, PR, April 16, 2009.
65. Hernandez* I., Hwang S. "Plant Growth on the Land Restored with Coal Combustion Byproduct Aggregates", Puerto Rico Interdisciplinary Scientific Meeting (PRISM), Rio Piedras, PR, Mar 14, 2009.
66. Concepcion* D., Hwang S., Falcon* J. "Lessons Learned from Operation of Field-Scale Small Water Purification Systems", Puerto Rico Interdisciplinary Scientific Meeting (PRISM), Rio Piedras, PR, Mar 14, 2009.
67. Anaya* N., Hwang S., Padilla I. "Enhanced TCE Remediation with Polymer-aided Alcohol Flushing", Puerto Rico Interdisciplinary Scientific Meeting (PRISM), Rio Piedras, PR, Mar 14, 2009.
68. Falcon* J., Hwang S., Padilla I. "Spatial Distribution and Temporal Trend of Explosives in Soil with Surface Vegetation", Puerto Rico Interdisciplinary Scientific Meeting (PRISM), Rio Piedras, PR, Mar 14, 2009.
69. Torres* P., Rosado** S., Hwang S. "Effect of Aquatic Structure made of Cement and Coal Ash Byproducts on Water Quality", Puerto Rico Interdisciplinary Scientific Meeting (PRISM), Rio Piedras, PR, Mar 14, 2009.
70. Latorre* I., Roman **D., Hwang S. "A Statistical Approach for Restoration of Disturbed Land with Coal Combustion Byproduct Aggregates", Puerto Rico Interdisciplinary Scientific Meeting (PRISM), Rio Piedras, PR, Mar 14, 2009.

2008

71. Fonseca** A., Concepcion* D., Falcon* J., Hwang S. "Evaluation of Drums Filtration Units for Alternative Rural Water Sustainability", AIChE Annual Meeting, Philadelphia, PA, November 16 – 21, 2008.
72. Feliciano** I., Hwang S., Padilla I. "Distribution of Explosives TNT and DNT with Surface Vegetation *Fimbristylis Cymosa*", AIChE Annual Meeting, Philadelphia, PA, November 16 – 21, 2008.

73. Del Mora**l A., Hwang S. "Effects of Potassium Permanganate Induced In-Situ Chemical Oxidation in Trichloroethylene DNAPL Source Zones", Puerto Rico Water and Environmental Association Convention, Rio Grande, May 19-23, 2008.
74. Sanchez** S., Fonseca** A., Concepcion* D., Hwang S., Sinha R. "Water Filtration and Monitoring System for Rural, Remotely Located Communities", XIII Sigma Xi, University of Puerto Rico, Mayagüez, PR, April 10, 2008.
75. Herrera* M., Hwang S., Pagan-Trinidad, I. "Geographical Information System for Identification of Rural Communities in Need of Improved Water Quality and Sanitation", XIII Sigma Xi, University of Puerto Rico, Mayagüez, PR, April 10, 2008.
76. Escobar* Z., Fonseca** A., Concepcion* D., Hwang S. "Landfills with Coal Combustion Byproducts as an Alternative Daily Cover", XIII Sigma Xi, University of Puerto Rico, Mayagüez, PR, April 10, 2008.
77. Hernandez* I., Latorre* I., Hwang S. "Graduate Study in a Unique Interdisciplinary Research Group", XIII Sigma Xi, University of Puerto Rico, Mayagüez, PR, April 10, 2008.
78. Anaya* N., Gomez** J., Hwang S., Padilla I. "Understanding of Permeability Contrast to Advance In situ Flushing for DNAPL Remediation", XIII Sigma Xi, University of Puerto Rico, Mayagüez, PR, April 10, 2008.
79. Hernandez* V., Hwang S., Torres* P. "Remediation of Explosives-Containing Water with Advanced Oxidation and Sorption", XIII Sigma Xi, University of Puerto Rico, Mayagüez, PR, April 10, 2008.
80. Latorre* I., Hernandez* I., Fonseca** A., Hwang S. "Restoration of Open-Pit Quarry to Bio-viable Land: Resource Recovery Approach", XIII Sigma Xi, University of Puerto Rico, Mayagüez, PR, April 10, 2008.
81. Torres* P., Hwang S., Padilla I. "Environmental Engineering Laboratory at University of Puerto Rico – Mayaguez", 1st Rural (Non-PRASA) Community Water Supply and Sanitation, Mayaguez, PR, Feb. 25, 2008.
82. Herrera* M., Hwang S., Pagan-Trinidad I., Velez-Arocho J. "Rural, Non-PRASA Water Supply and Sanitation Systems", 1st Rural (Non-PRASA) Community Water Supply and Sanitation, Mayaguez, PR, Feb. 25, 2008.
83. Sanchez** S., Concepcion* D., Fonseca** A., Hwang S., Sinha R. "Water Quality Monitoring of Rural (Non-PRASA) Community Treatment System using Telemetry", 1st Rural (Non-PRASA) Community Water Supply and Sanitation, Mayaguez, PR, Feb. 25, 2008.
84. Fonseca** A., Sanchez** S., Concepcion* D., Hwang S., Sinha R. "Experimental Small Drum Filtration System with Chlorination for Rural Community Water Supply", 1st Rural (Non-PRASA) Community Water Supply and Sanitation, Mayaguez, PR, Feb. 25, 2008.

2007

85. Anaya** A., Padilla I., Hwang S. "Effect of Cyclic Precipitation and Radiation on the Fate and Transport of TNT and DNT near Soil-Atmospheric Surfaces". AGU Fall Meeting, San Francisco, CA, Dec. 10-14, 2007.
86. Padilla I., Hwang S. "GeoEnvironmental Education through Multidisciplinary Research". AGU Fall Meeting, San Francisco, CA, Dec. 10-14, 2007.
87. Feliciano** I., Hwang S., Padilla I., Torres* P. "Hydraulic Controls & Explosives Phytodegradation by Tropical Fimbry". AIChE Annual Meeting, Salt Lake City, Utah, November 4 – 9, 2007.
88. Hwang S., Pando M., Pagan I., Godoy L., Rossi** J., Ruiz A., Watlington N. "A Joint Industrial Byproducts Reutilization Initiative", World of Coal Ash, Cincinnati, OH, May 7 – 10, 2007.
89. Hwang S., Pando M., Maldonado** V., Del Moral** A. "Utilization of Coal combustion Byproducts as Capping Amendments for Heavy Metals Sequestration", World of Coal Ash, Cincinnati, OH, May 7 – 10, 2007.
90. Del Moral** A., Hwang S. "Containment of Heavy Metals in Sediments with an Industrial By-product", XII Sigma Xi, University of Puerto Rico, Mayagüez, PR, April 26, 2007.
91. Fonseca** A., Feliciano** I., Ortiz** M., Torres* P., Padilla I., Hwang S. "Research and Education Advancement through Laboratory (REAL) Experience: INCI 4998_Spring 2007 Semester", XII Sigma Xi, University of Puerto Rico, Mayagüez, PR, April 26, 2007.
92. Torres* A., Padilla I., Hwang S. "Physical Modeling of 2,4-DNT Gaseous Diffusion Through Unsaturated Soil", SPIE, Orlando, FL, April 9-13, 2007.
93. Anaya* A., Padilla I., Hwang S. "Influence of Environmental Conditions on the Fate and Transport of ERCs in a Physical 3D Model: Spatial and Temporal Assessment Effects in a Sandy Soil", SPIE, Orlando, FL, April 9-13, 2007.

2006

94. Irizarry** M., Baez** R., Benitez** L., Concepcion* D., Torres* P., Padilla I., Hwang S. "Chemistry Experiences with Environmental Engineering Projects through the Class INCI4998: Undergraduate Research Experience in Environmental Laboratory (UREEL)", Expochem, Mayagüez, PR, Nov. 9 – 11, 2006.
95. Del Moral** A., Huling S., Hwang S. "Understanding of Fenton Oxidation Pathways for Effective Remediation of VOCs in Environmental Matrix", Hispanics in Engineering National Conference (HENC), San Juan, PR, Nov. 14 – 17, 2006.
96. Vazquez** M., Padilla I., Hwang S. "Effect of Surface Vegetation on the Fate, Transport and Detection of Explosives-Related Compounds" XVII Undergraduate Research Symposium, Universidad Metropolitana, San Juan, PR, Sep. 15-16, 2006.
97. Del Moral** A. Huling S., Hwang S. "Hydrogen Peroxide – Iron Catalyzed Oxidation and Synergistic Effects" XVII Undergraduate Research Symposium, Universidad Metropolitana, San Juan, PR, Sep. 15-16, 2006

98. Maldonado** V., Del Moral** A., Roman F., Hwang S. "Coal Combustion Byproducts as Low-Cost, Active Capping Amendments for Sequestration of Heavy Metals in Sediments" XVII Undergraduate Research Symposium, Universidad Metropolitana, San Juan, PR, Sep. 15-16, 2006.

99. Del Moral** A., Huling S., Hwang S. "Sustaining H_2O_2 Concentrations and Synergistic Binary Effects in Fenton-like Oxidation" 4th Latin American and Caribbean Consortium of Engineering Institution (LACCEI). Mayagüez, PR, June 21-23, 2006.

100. Del Moral** A., Huling S., Hwang S. "Improved Understanding of Fenton Reaction Mechanisms" VI Sigma Xi. University of Puerto Rico ay Mayagüez, PR, April 6, 2006.

2004

101. Felt D.R., Nestler C.C., Davis J.L., Ruff T., Brooks M.L., Hwang S., Santiago-Rodriguez L.C. "Application of Alkaline Hydrolysis to Remediate Explosive- and Propellant-Contaminated Groundwater." 4th International Conference on Remediation of Chlorinated and Recalcitrant Compounds. Monterey, CA, May 24-27, 2004.

2003

102. Waisner S.A., Zappi M., MacMillan D., French T., Hwang S., Harden J., Johnson J. "Elucidation of Key Mechanistic Processes Impacting Effective Application of In-situ Chemical Oxidation." Partners in Environmental Technology, SERDP and ESTCP Symposium & Workshop. Washington, DC, December 2-4, 2003.

103. Hwang S., Felt D.R., Bouwer E.J., Brooks M.C., Larson S.L., Davis J.L. "Alkaline hydrolysis is an effective treatment technology for RDX-contaminated groundwater." Division of Environmental Chemistry, 225th American Chemical Society National Meeting. New Orleans, LA, March 23-27, 2003.

2001

104. Hwang S., Cutright T.J. "Soil characteristics and PAH biodegradation." 2nd Great Lakes Civil Engineering Graduate Student Research Symposium. Case Western Reserve University, OH, May 15, 2001.

2000

105. Hwang S., Ramirez N., Cutright T.J. "Sequestration of pyrene by clay minerals in a natural soil." Division of Environmental Chemistry, 220th American Chemical Society National Meeting. Washington DC, August 20-25, 2000.

PROFESSIONAL ORGANIZATION AFFILIATIONS

Texas Board of Professional Engineers and Land Surveyors (TBPELS)
National Ready Mixed Concrete Association (NRMCA)
Tau Beta Pi (TBP)
Transportation Research Board (TRB)

JOURNAL REVIEW

Journal of Environmental Management
Case Studies in Construction Materials
Water Research
Journal of Building Engineering
Construction & Building Materials
Journal of Cleaner Production

POSTDOC MENTEES

Dr. Sivasankar Annamalai 2024 – present
- Advising at Texas State University

Dr. Ranjit Gurav 2022 – 2024
- Advising at Texas State University

Dr. Sayed Minhaj Saleem Kazmi 2021 – 2022 (remote postdoc at RMIT, Australia)
- Co-advising with Dr. Togay Ozbakkaloglu at Texas State University

Dr. Muhammad Junaid Munir 2021 – 2022 (remote postdoc at RMIT, Australia)
- Co-advising with Dr. Togay Ozbakkaloglu at Texas State University

Dr. Fahim Hossain 2013 – 2014
- Co-advising with the late Dr. Oscar Perales at the University of Puerto Rico at Mayagüez

Dr. Joniqua Howards 2012 – 2013
- Co-advising with Dr. Ingrid Padilla at the University of Puerto Rico at Mayagüez

GRADUATE STUDENTS' THESIS & DISSERTATION

- ***Served as the Committee Chair at Texas State University***

1. Baylee Hartman, MS Student, May 2027 (expected), "Advanced PFAS Remediation"
2. Portia Agyemang, PhD student, May 2027 (expected), "Soil Conditioning with Hydrogel for Sustainable Irrigation"
3. Eunice Babatunde, PhD student, May 2026 (expected), "Advanced Water Treatment with Innovative Biochar"
4. Felipe Farias, MS student, May 2026 (expected), "Conceptual Framework to Understand Stormwater Runoff on Pervious Concrete Pavement"
5. Kindness Etu, MS student, May 2026 (expected), "Biochar-amended Pervious Concrete Pavement for Water Quality Enhancement"
6. Prajwal Bhattari, MS student, May 2026 (expected), "Biochar adsorption of PFOA"

7. Joseph Ball, MS, Aug 2024, “An Evaluation of Enriched Aerobic Bacterial Communities capable of Biodegrading TCE under Different pH and Temperature”
8. Marufa Khondoker, MS, Dec 2023, “Petroleum Hydrocarbon Removal from Waterways using Water Hyacinth (*Eichhornia crassipes*) Biomass”
9. Eunice Babatunde, MS, Aug 2023, “Nutrient Removal Using Water Lettuce (*Pistia Stratiotes L.*) Biomass as The Adsorbent”

- ***Served as a Committee Member at Texas State University***

1. Ayo Akinloye, MS candidate, “hydrogel application”, Chair: Dr. Tania Betancourt
2. Junaid ur Rehman, PhD candidate, “Electroactive Polymers for Water Purification Studies via Photocatalysis”, Chair: Dr. Tania Betancourt
3. Ashley Falk, MS, Dec 2024, “Texas Teflon: The Distribution of Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS) in the Lone Star State”, Chair: Dr. Robert Mace
4. Amlan Majumder, MS, Aug 2024, “Sustainable utilization of an agricultural waste in concrete”, Chair: Dr. Xijun Shi
5. Wasi Shadman, MS, Aug 2024, “In-Vitro Detection of tRNA Fragments (tRFs) Using a Screen-Printed Carbon Electrochemical Biosensor”, Chair: Dr. Namwon Kim
6. Muhammad Tasnim Alam, MS, Aug 2023, “Predicting Critical Shear Stress of Riverbed Soils with Plasticity”, Chair: Dr. Stacey Kulesza
7. William Radnor, MS, Dec 2022, “Fouled Ballast and Geotechnical Asset Management of Retaining Walls”, Chair: Dr. Stacey Kulesza
8. Han Gao, MS, Jun 2021, “Optimizing Photobiological Treatment of Reverse Osmosis Concentrate”, Chair: Dr. Keisuke Ikehata

- ***Served as the Committee Chair at the University of Puerto Rico at Mayagüez***

1. Carla Moreno, MS, May 2018, “Subsurface Stormwater Retention with pervious Concrete Pavement on UPRM Campus Master Plan”
2. Marleisa Arocho, MS, May 2018, “Pervious Concrete: Lab-scale Optimization and Field Application”
3. Valerie Lopez, MS, May 2016, “Water Quality Performance of Pervious Concrete Pavements”
4. Minju Jo, MS, May 2016, “Optimization of fly ash geopolymer pastes and its use in pervious concrete pavement for pollutant removal in water”
5. Linoshka Soto, MS, May 2015, “Optimization of Pervious Concrete Incorporating Coal Fly Ash, Iron-oxide Nanoparticles and Water Reducing Admixtures and its Application for the removal of nutrients and fecal coliforms”
6. Isomar Latorre, PhD, Dec 2014, “Biodeterioration of PVC Plastics, Biochemical Fate of DEHP, and Bioreactor Landfills for DEHP-containing Leachate Management”
7. Margaret Hernandez, MS, Dec 2014, “Sand Filtration and Chlorination for Removal and Inactivation of *Bacillus subtilis*”
8. Keila Pagan, MS, May 2014, “Impact Assessment of the Presence of Engineered Iron Oxide Nanoparticles on Wastewater Effluent Disinfection”
9. Natalia Vazquez, ME, May 2014, “Statistical Optimization of Pervious Concrete Pavement Containing Fly Ash and Engineered Iron Oxide Nanoparticles for Runoff Quality and Quantity Controls”
10. Juan Falcon, MS, May 2014, “Treatment Train with Tire Crumb Rubber and *Cyperus haspan*: A New Approach for Remediation of Explosives-Containing Water”
11. Diana Martinez, MS, Dec 2013, “Effect of Engineered Iron Oxide Nanoparticles on Effluent Water Quality from Biological Wastewater Treatment”
12. Eileen Irizarry, MS, Dec 2012, “Development of Ternary Relationships among Soil Characteristics, CAAs Amount, and Groundwater Quality: Column Percolation”
13. Zalleris Escobar, PhD, May 2012, “Performance of Landfills with Coal Combustion Byproducts Aggregates as an Alternative Reactive Daily Cover”
14. Laura Rodriguez, MS, May 2012, “Disinfection By-products Occurrence and *Escherichia coliform* Removal in a Point-of-Entry Cistern Purification Unit”
15. Perla Torres, ME, May 2012, “Water Quality Assessment with Aquatic Non-Structural Blocks Made of Coal Ash Aggregates Mortars”
16. Nelson Anaya, ME, May 2011, “Enhanced Trichloroethylene Remediation with a Polymer-Aided Alcohol Flushing”
17. Isomar Latorre, MS, May 2010, “Feasibility of Open Pit Restoration with Coal Ash Aggregates: Ground Water Quality Assessment”
18. Ivan Morales, MS, 2010, “Enhancement of Reactive Oxygen Species Production in Nanoparticulate Bimetallic Zero-Valent Iron and Dioxygen System”
19. Imiraily Hernandez, ME, Dec 2009, “Phyto-viability on Restored Land with Coal Ash Aggregates as Backfilling Amendment”
20. Victor Hernandez, ME, Dec 2009, “Remediation of Explosives-containing Water using Advanced Oxidation and Sorption Processes”

21. Melissa Herrera, MS, May 2009, “Development of a Decision Support Tool to Ensure Safe Drinking Water in Non-PRASA Communities in Puerto Rico”

- ***Served as a Committee Member at the University of Puerto Rico at Mayagüez***

1. Gabriel Roman, MS, 2018, “Modeling the Land-use Legacy Effect of Agricultural Practices on the Water Quality of Streams from Forest Watersheds of Puerto Rico”
2. Krisiam Ortiz, PhD., 2018, “Transition Metal Based Complexation Materials for the Selective Adsorption of Contaminants of Emerging Concern and Metabolites from Aqueous Solutions”
3. Sheila Arias, MS, 2017, “Evaluation of Different Immobilization Techniques of TiO_2 Particles in Sintered Glass Substrate (SGS) for the Degradation of Humic Acid Solutions”
4. Amarilys Aviles, MS, 2016, “Immobilization of Titanium Dioxide in Crushed Recycled Glass for Atrazine Photo-Degradation”
5. Maria Irizarry, MS, 2015, “Enhancement of TCE Volatilization and Vapor Extraction from Variably-Saturated Clay using Salt and Alcohol Solutions”
6. Marietta Marcano, PhD, 2015, “Novel Titanium Silicate Porous Materials: Synthesis using Large Structure Directing Agents, Functionalization and Evaluation for Carbon Dioxide Adsorption-Based Applications”
7. Joann Rodriguez, MS, 2015, “Treatability Study of an Intermittent Biosand Filter for Reduction of *Escherichia coli* and *Enterococcus*”
8. Monica Medina, ME, 2015, “Degradation of Caffeine in Coffee Pulp by Solid-State Fermentation”
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