

Hamidreza Sharifan

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Citizen of the USA

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EDUCATION

- Mar. 2020 Colorado State University, Fort Collins, Colorado, USA
Post-Doctoral Research on Forensic and source tracking of Per- and Polyfluoroalkyl Substances (PFASs) using Q-TOF and FT-ICR at the Department of Civil and Environmental Engineering, Center for Hydrology Contaminant.
Research on source tracking and environmental fate of PFAS compounds in contaminated soils and water. Research funded by the Department of Defence.
- Nov. 2019-
Jan 2020 Texas A&M University, College Station, Texas, USA
Post-Doctoral Research on phytoremediation of the poly- and perfluoroalkyl substances from subsurface agricultural soils using LC-MS under the supervisory of Dr. Xingmao Ma, Zackary Department of Civil Engineering. Application of Nanotechnology in Food Safety. Department of Biological and Agricultural Engineering.
- Oct. 2019 Texas A&M University, College Station, Texas, USA
Doctor of Philosophy in Biological and Agricultural Engineering (Environmental Engineering), Dissertation Title: Environmental fate of metallic oxide nanoparticles (ZnO & CeO₂) and coexistence of heavy metal(oids) (Cd, Pb & As) and their phytotoxicity, A Food Safety Perspective.
- Dec. 2016 Texas Tech University, Lubbock, Texas, USA
Master's Degree in Civil and Environmental Engineering
Thesis Title: Chemical interaction, distribution and environmental fate of organic UV filters (sunscreen)
- Apr. 2013 University of Stuttgart, Stuttgart, Germany
Master's Degree in Environmental and Process Engineering
Thesis Title: Solute transfer mechanisms of organic contaminants in Polar Organic Chemical Integrative Sampler (POCIS).
- Sep. 2007 **Bachelor of Science in Environmental Science and Engineering**, University of Birjand, Iran
Thesis Title: Bioaccumulation, and Distribution of Heavy Metals in Gray Mangrove (*Avicennia marina*): Case Study of the Tropical Areas of Persian Gulf

GRANTS and FELLOWSHIPS

- 2019 **National Institute of Health (NIH), Travel Grant**
To attend the 16th International Phytotechnologies Conference, Changsha, China
Hosted by American Phytoscholar Grant Program.
- 2019 **German Academic Exchange Service (DAAD), Scholarship Award** of RISE Professional
Research Area: Characterizing and calibrating of LC-SPE-NMR for analyzing the biological samples of animal and plant metabolites at BASF Chemical Company, Ludwigshafen, Germany.
- 2019 **National Science Foundation (NSF)-PIRE (#1545837 P), Awarded the Extended Proposal**
Research Area: Sustainable agriculture under risk of contaminated coastal flood using the nanotechnology a collaboration between the Delft University (Netherlands) and Texas A & M University (USA) **PI: Hamidreza Sharifan.**
- 2017 **National Institute of Health (NIH), Travel Grant**
To attend the 14th International Phytotechnologies Conference, Montreal, Canada
Hosted by American Phytoscholar Grant Program.
- 2017 **National Science Foundation (NSF), Travel Grant**
To attend the 1st Pan American Congress of Nanotechnology, Guarujá, Brazil

Hosted by Sustainable Nanotechnology Organization.

- 2017 **Rollins Family Fellowship, Texas A &M University**
In recognition of excellent performance and dedication in research.
- 2017 **Harold J. "Bill" Haynes Fellowship, Texas A &M University**
In recognition of excellent performance and dedication in research.
- 2016 **Oklahoma State University, Travel Grant**, funded by Buchanan Family Trust
To attend the student water conference at Oklahoma State University.
- 2016 **Small Research Grant for Graduate Students at Texas Tech University**
To provide the supplemental material for the project of UV filters interaction with the chlorinated water, PI: Hamidreza Sharifan.

PUBLICATIONS

1. 2020, **H Sharifan**, **Alarming the Impacts of the Organic and Inorganic UV blockers on Endangered Coral's Species in the Persian Gulf; A Scientific Concern for Coral Protection**, Sustainable Futures, in Press.
2. 2020, **H Sharifan**, X. Ma, J. Moore., **Zinc oxide (ZnO) nanoparticles elevated iron and copper contents and mitigated the bioavailability of lead and cadmium in different leafy greens.**, Ecotoxicology and Environmental Safety. [10.1016/j.ecoenv.2020.110177](https://doi.org/10.1016/j.ecoenv.2020.110177)
3. 2020, X Ma, **H Sharifan**, F Dou, W Sun., **Simultaneous Reduction of Arsenic (As) and Cadmium (Cd) Accumulation in Rice (*Oryza sativa* L.) by Zinc Oxide Nanoparticles**, Chemical Engineering. [10.1016/j.cej.2019.123802](https://doi.org/10.1016/j.cej.2019.123802)
4. 2019, **H Sharifan**, X Ma, j Moore, M Ruzlan, C Evans., **Zinc oxide nanoparticles alleviated the bioavailability of cadmium and lead and changed the uptake of iron in hydroponically grown lettuce (*Lactuca sativa* L. var. *Longifolia*)**, ACS Sustainable Chemistry & Engineering. [10.1021/acssuschemeng.9b03531](https://doi.org/10.1021/acssuschemeng.9b03531)
5. 2019, **H Sharifan**, X Wang, X Ma., **Impact of nanoparticle surface charge and phosphate on the uptake of coexisting cerium oxide nanoparticles and cadmium by soybean (*Glycine max* (L.) Merr.)**, International Journal of Phytoremediation,1-8. [10.1080/15226514.2019.1658713](https://doi.org/10.1080/15226514.2019.1658713)
6. 2019, L Rossi, L N Fedenia; **H Sharifan**, X Ma, L Lombardini. **Effects of foliar application of zinc sulfate and zinc nanoparticles in coffee (*Coffea arabica* L.) plants**, Plant Physiology and Biochemistry,135, 160-166. [10.1016/J.PLAPHY.2018.12.005](https://doi.org/10.1016/J.PLAPHY.2018.12.005)
7. 2018, **H Sharifan**, X Wang, G Binglin, X Ma., **Investigation on the Modification of Physicochemical Properties of Cerium Oxide Nanoparticles through Adsorption of Cd and As(III)/As(V)**, ACS Sustainable Chemistry & Engineering, 6 (10), 13454-13461. [10.1021/acssuschemeng.8b03355](https://doi.org/10.1021/acssuschemeng.8b03355)
8. 2018, X.Wang, W.Sun, S. Zhang, **H. Sharifan**, X. Ma, **Elucidating the Effects of Cerium Oxide Nanoparticles and Zinc Oxide Nanoparticles on Arsenic Uptake and Speciation in Rice (*Oryza sativa*) in a Hydroponic System**, ACS Environmental Science & Technology. [0.1021/acs.est.8b01664](https://doi.org/10.1021/acs.est.8b01664)
9. 2018, **L Rossi, H Sharifan**, W Zhang, S Arthur P, X Ma., **Mutual effects and in-planta speciation of co-existing cerium oxide nanoparticles and cadmium in hydroponically grown soybean (*Glycine max* (L.) Merr.)**, Environmental Science: Nano 2018, 5 (1), 150-157. [10.1039/C7EN00931C](https://doi.org/10.1039/C7EN00931C)
10. 2017, **H Sharifan.**, **Commentary on Characteristics of cadmium uptake and membrane transport in roots of intact wheat (*Triticum aestivum* L.) seedlings.** Environmental Pollution. 231, 1213-1214. [10.1016/j.envpol.2017.06.018](https://doi.org/10.1016/j.envpol.2017.06.018)
11. 2017, **H Sharifan**, X Ma., **Potential photochemical interaction of UV Filter Molecules with the multi-chlorinated structure of Prymnesins in a Harmful Algal Bloom event**, Mini-Reviews in Organic Chemistry, 14, 5, 391-399. [10.2174/1570193X14666170518124658](https://doi.org/10.2174/1570193X14666170518124658)
12. 2017, **H Sharifan**, A Morse, H Madsen., **High Performance in Power Generation by Pressure-Retarded Osmosis (PRO) from Hyper-Salinity Gradient: Case Study of Hypersaline Lake of Urmia, Iran**, Desalination and Water Treatment, 72, 302-311. [10.5004/dwt.2017.20555](https://doi.org/10.5004/dwt.2017.20555)

13. 2016, **H Sharifan**, A Morse, D Klein., **UV Filters an Environmental Threat for the Gulf of Mexico; Case Study of Texas Coastal Zones**, *Oceaologia*, 58 (4), 327–335. [10.1016/j.oceano.2016.07.002](https://doi.org/10.1016/j.oceano.2016.07.002)
14. 2016, **H Sharifan**, A Morse, D Klein., **UV Filters Interaction in the Chlorinated Swimming Pool, , a new challenge for urbanization, a need for community-scale investigations**, *Environmental Research*, 148, 273–276. [10.1016/j.envres.2016.04.002](https://doi.org/10.1016/j.envres.2016.04.002)

EXTENSION PAPERS & ELECTRONIC ARTICLES

- May. 2020. **Sharifan.**, The flood risk associated with shifting from conventual agriculture towards greenhouse production; A need for sustainable agricultural practice, NSF-PIRE Annual report (in press)
- June. 2016. **Sharifan.**, **Nutrient recovery from municipal wastewater treatment plants: status and prospects**, *Florida Journal of Water Resources*, June. 36-37
- Sep. 2016. **Sharifan.**, What happens to sunscreens in swimming pools?, *Atlas of Science*

SELECTED PRESENTATIONS

- 2019, Sharifan., Moore, Ma, ***Effects of zinc oxide nanoparticles on the bioavailability of co-contaminant cadmium and lead and the iron content in spinach (Spinaciae oleracea)***, in 16th International Phytotechnologies Conference, September 23-29, 2019, China.
- 2017, Sharifan., Ma, ***mutual effects of cerium oxide nanoparticles and cadmium on their uptake and accumulation by soybeans in a hydroponic system***, in 14th International Phytotechnologies Conference, September 25-29, 2017, Canada.
- 2017, Sharifan., Mal, ***Characterizing the molecular mechanisms for the uptake of cerium oxide nanoparticles by soybean (Glycine max. (L.) Merr.)***, in Pan American Congress of Nanotechnology (PanNano-2017), November 27-29, 2017, Brazil.
- 2016, Sharifan., Morse, ***Solute Transfer behavior of Polar Organic Chemical Compounds through Polyethersulfone Membrane (PES) in Passive Sampling Device***, Annual Student Water Conference,. 24-25 March, Stillwater campus of Oklahoma State University. USA
- 2016, Sharifan., Morse, ***Transfer Rate of Water Contaminants through a Polyethersulfone (PES) Membrane***, Texas Water Conference, 19-22 April, Fort Worth, Texas, USA
- 2010, Sharifan., ***Passive air sampler as a tool for long-term air pollution monitoring in tropical industrial and urban air (Case study evaluation of an SO₂ passive sampler in the industrial city of Iran)***, International Conference on Urban Environmental Pollution,.123-25th June, Boston USA
- 2010, Sharifan., Davari., ***Bioaccumulation, and Distribution of Heavy Metals in Gray Mangrove (Avicennia marina): Case Study of the Tropical Areas of Persian Gulf***, International Research on Food Security, Natural Resource Management and Rural Development, September 14 - 16, Zurich, Switzerland

AWARDS

- 2019 **Appreciation Award for serving as Judge for Annual Departmental Capstone** Event for Undergraduate Students of the Department of Biological and Agricultural Engineering, Texas A & M University, College Station, Texas.
- 2018 **Peer Review Awards by Publons supported by Web of Science Group**
Top 1% in the Field Environment and Ecology
Reviewer for five peer-reviewed journals
- 2017 **Outstanding contribution in Reviewing for the Journal of Science of Total Environment**
Reviewing 15 articles in the field of environmental science and engineering, ecology and biotechnology
- 2017 **Top Reviewer for the Water Environment Federation, Journal of Water Environment Research**

Giving critical reviews for more than three years of volunteer service
Indexed in Scopus

2017 **Outstanding contribution in Reviewing for the Journal of Science of Total Environment**
Reviewing 12 articles in the field of environmental science and engineering, ecology and
biotechnology

INVITED TALKS

Feb.2020 , **Title: Application of nanotechnology in Food Safety,**

Department of Civil and Environmental Engineering, Colorado State University

June.2019, **Title: Ph.D., A Decision for Future, Challenges, and Successes,**

Department of Environment and Process Engineering, WASTE Program, Stuttgart, Germany

July.2019, **Title: Interaction of Nanoparticles with Dietary Plants, A Food Safety Perspective**

Rise Professional-DAAD Program (German Academic Exchange Service), Heidelberg, Germany

CERTIFICATIONS

Jul. 2015 **Certificate in Advanced Energy System Engineering,** Old Dominion University, Virginia

- 15 credit hours of graduate-level courses in Energy Engineering and Science

Feb. 2019 **Social and Behavioral Research Investigators and Key Personnel,** Collaborative Institutional
Training Initiative (CITI Program)

- Research prerequisite to work with human data for the project of engineering education of minorities
under supervisory of Dr. Janie Moore

Oct. 2019 **Certificate in Future Faculty Preparation,** Texas A&M University, Texas, College Station

- Learning Outcomes & the Course Development Cycle
- Philosophy of Teaching Statement
- Syllabus Design
- Curriculum Vitae

SUMMER INTERNSHIP

June-Aug 2019 Internship in the Department of the **Crop Protection, Global Metabolism and Structure,**
Research and Development of Agricultural solution of BASF Chemical company

- Identified the secondary metabolites in tissues of a variety of crops species after exposure to
different organic pesticides
- Classified the organic metabolites into polar, semi-polar and non-polar compounds

WORK AND RESEARCH EXPERIENCE

Jan. 2017-
Dec.2019 **Research Assistant at Nanotechnology Lab, Zachary Department of Civil Engineering, Texas A & M
University, College Station, Texas**

Characterized different metallic oxide nanoparticle by DLS, TEM, and XPS
Investigated the adsorption of the organic/ inorganic pollutant by DLS, TEM & ICP-MS
Analyzed the elemental composition of the growth media and living tissue by ICP-MS
Cultivated different crops species and investigated their physiological responses
Cultivated the bacterial communities and characterized their responses
Monitored and classified hazardous material in the Nano-Lab according to the policy of EHS center.
Prepared several technical reports, documents, and protocols
Managed the Lab facilities and processed the related business works of supplies

Jul.2015-
Dec.2016 **Research Assistant at the Department of Civil and Environmental Engineering, Texas Tech University,
Lubbock, Texas**

Prepared extensive literature review on organic UV filters and published two articles

- Analyzed and modeled the data of potential application of pressure retarded osmosis (PRO) using hypersaline water
- Jan. 2015-
Aug. 2015 **Environmental Engineer-Intern in the Department of Public Utilities, Urban Water Center of the municipality of Virginia Beach city, Virginia**
 Researched and interpreted the construction drawing and specifications of the water facilities
 Updated the field records of technicians into the GIS-based distribution system
 Mapped the urban sewer systems and water utilities of the city by Arc Map
- Nov. 2010-
Feb. 2012 **Research Assistant at the Institute for Sanitary Engineering, Water Quality and Solid Waste Management, Stuttgart, Germany**
 Installed and maintained stationary ambient gas analyzers (NO_x, CO, O₃, PM)
 Apr. 2013-
Dec. 2013 Measured the ambient air quality at different sites by mobile instruments
 Controlled the quality of wastewater treatment process (BOD, COD, NO_x, PO₄)
 Investigated the feasibility of organic UV filter biodegradation (Benzophenone, Octocrylene)
- Mar. 2012-
Mar.2013 **Research Assistant-Intern at Two Joint Marine Research Institutes**
Alfred Wegener Institute for Polar and Marine Researches, Germany (Six months)
Royal Netherlands Institute for Sea Research, Netherlands (Six months)
 Extracted different biotoxins from sampled algae, prepared samples for GC-MS and HPLC analysis
 Analyzed data and identified different types of biotoxins based on molecular spectrum
 Calibrated the GC-MS and quantified multiple pharmaceuticals and pesticides from water samples
 Characterized performance of the PES membrane in POCIS (passive sampling) under different conditions
- Mar. 2008-
Aug.2009 **Environmental Planning and Air Pollution Control Expert, South Pars Gas Complex-HSE Center**
Weekly monitored gas emissions and solid waste management
 Measured ambient air quality by portable devices and passive diffusive samplers
 Supervised the safety rules on the onshore sites
 Reviewed plans & specifications for new machinery and equipment to ensure safety requirements
 Identified and corrected potential hazards by inspecting facilities, machinery, and safety equipment

TEACHING EXPERIENCE

- Aug. 2019-
Dec.2019 **Teaching Assistant for the Agricultural Systems Management (AGSM) 315 at the Department of Biological and Agricultural Engineering, Texas A & M University, College Station TX.**
Major teaching modules: Elementary mechanics, physical and thermal properties of food and processing materials, heat transfer, mass and energy balances, psychrometrics (properties of air), insulation.
- Sep. 2018-
Dec.2018 **Lab Instructor and Mentor for Undergraduate International Exchange students, Texas A & M University, College Station, TX.**
 Taught the adsorption principles and applicable isotherms
 Explained and trained the analytical approach for nanoparticles hydrodynamic size distribution
 Elucidate the mechanism of protein synthesis inhibitors to students
 Assigned tasks and trained the acid digestions of organic tissue and sample preparation for ICP-MS analysis
- Sep. 2016-
Oct.2016 **Certificate in Teaching Techniques (ASCE). Texas Tech University, Lubbock, Texas. Understanding teaching techniques through critical reflection and application. Three Days Workshops attended:**
 (i) Introduction to Teaching; (ii) Learning Styles; (iii) Classroom Assessment Techniques; (iv) Effective Teaching with Technology; (v) Classroom Management; (vi) Writing Learning Outcomes; (vii) Establishing Credibility and Authority in the Classroom; (viii) Evaluation and Grading.
- Sep. 2014-
Jun.2015 **Teaching Assistant, Old Dominion University**
 Evaluated and graded mid-term Exams
 Evaluated undergraduate homework and communicated the challenging issues
- Jul. 2010-
Aug. 2010 **Volunteer Teaching assistant in research fieldwork, British Company of the Operation Wallacea, Indonesia**

Assessed the student research progress of the international project of the rain forest diversity through an educational framework
Analyzed and directed the fieldwork data collected by high school students
Taught different ecological concepts to British high school students
Mar. 2008- **Professional Trainer and Presenter of Analytical Instruments, Mehrkanaz Sanat, Tehran, Iran**
Sep.2009 Taught the concepts and outcomes of the Marpol Convention, GHG gases impacts to all HSE centers of all Persian ports along the Persian Gulf and the Caspian Sea
Trained the operation and maintenance of different portable gas analyzers of TESTO Company to employees of all shipyards companies, and oil & gas refineries in Iran

LEADERSHIP EXPERIENCE

Sep. 2017 **Grad Camp Consultant for new graduate students in Texas A & M University**
Organized group meetings with a diverse group of students
Designed ice-breaking games for students with different background
Provided valuable information and shared experience with new grad students
Dec. 2015- **Founder and President of Student Chapter of the American Society of Engineering Education,**
Dec.2016 **Texas Tech University, Lubbock, Texas**
Organized weekly meetings
Presented the society at different events
Managed the time availability between officers
Sep. 2013 **Selected as youth chair for the International conference of YOUMARES 2013,** driven by the young spirit in marine science and technology, Germany
Apr. 2012 **Student reporter for an international conference of TROPENTAG-Resilience of Agricultural Systems against Crises, Universities of Göttingen and Kassel, Germany**
Interviewed keynote speakers
Recorded videos, edited and uploaded to the YouTube channel of the conference

LAB SKILLS

GC-MS, LC-MS, HPLC, Solid Phase Extraction (SPE), ICP-MS, FTIR, DLS Analyzing, TEM imaging, LC-SPE, EZ-PREP

COMPUTER SOFTWARE

GIS software (ArcGIS, Arc info Arc Map 10.4), Minteq3.0, Lab View, MinTab18, JMP, AutoCAD, Python

INVITED REVIEWER

Journal of Total Science of Environment
Journal of Environmental Science and Pollution Research
Journal of Water Environment Research
Journal of Environmental Chemistry Letters