

Mohammed Baalousha, Curriculum Vitae

Residence Address

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Work Address

University of South Carolina
Department of Environmental Health Sciences
Public Health Research Center (PHRC), 413a
921 Assembly Street, Columbia, SC, 29208
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Appointments

- 2023-Present:** Professor of Environmental Nanoscience, Department of Environmental Health Sciences, University of South Carolina
- 2026-Present:** PhD program director, Department of Environmental Health Sciences, University of South Carolina
- 2023-present:** Adjunct professor in Civil and Environmental Engineering, Department of Civil and Environmental Engineering, University of South Carolina
- 2018-2022:** Associate Professor of Environmental Nanoscience, Department of Environmental Health Sciences, University of South Carolina
- 2014-2017:** Assistant Professor of Environmental Nanoscience, Department of Environmental Health Sciences, University of South Carolina
- 2014-Present:** Director of the Environmental Nanoscience and Engineering Laboratory
- 2006-2013:** Postdoctoral Fellow: University of Birmingham, College of Life and Environmental Sciences, United Kingdom
- Summer 2023:** Invited Professor, Khon Kaen University, Thailand
- Summer 2013:** Invited Professor, University of Bordeaux 1, France
- Summer 2004:** Invited Research Assistant, UFZ Environmental Research Centre, Germany.
- Summer 2003:** Invited Research Assistant, Hambourg-Harbour Technical University, Germany.
- Fall 2002:** Invited Research Assistant, Birmingham University, Birmingham, United Kingdom.

Education

- 2002-2006:** PhD in Environmental Biogeochemistry (Distinction with European accreditation) University Bordeaux 1, Bordeaux, France
Title: Environmental role of natural colloids as carriers of trace Elements
- 2001-2002** MSc. Applied mechanics, University Bordeaux1. Grade: AB. 2nd out of 20 students
Dissertation project: Transport of Cd in sand column.
- 1996-2001:** BSc. Civil engineering, Islamic University of Gaza, Gaza, Palestine.
Grade: Excellent. Average: 91.8%. 1st out of 80 students

Awards

- 2018:** Breakthrough Star, University of South Carolina
- 2017:** NSF-EPSCoR Fellowship
- 2016:** CAREER: National Science Foundation
- 2014:** Emerging Investigator. Journal of Environmental Science: Processes and Impacts

- 2008:** Chemodynamics Outstanding Young Scientist Award
2002-2005: French Foreign Ministry PhD Scholarship. Full funding: fees and maintenance (€40,000)
2001-2002: French Foreign Ministry MSc Scholarship. Full funding: fees and maintenance (€10,000)
1996-2001: UNESCO BSc Scholarship for Undergraduate Studies. Full fees and maintenance (\$5,000)

Affiliations

- 2026-Present:** International Editorial Committee of the *Revista Ibero-americana de Ciências Ambientais*.
2024-Present: Member of the Editorial Board of Journal of Environmental Science and Health, Part C
2022-Present: Member of the Editorial Board of Contributions to Environmental Sciences and Innovative Business Technology series (CESIBT)
2020-Present: Member of the Steering Board for Field Flow Fractionation International Symposium
2020-Present: Member of the Editorial Board of Molecules
2020-Present: Member of the Association of Environmental Engineering and Science Professors
2019-2020: President of the Carolinas Society of Environmental Toxicology and Chemistry (CSETAC)
2018-2019: Vice President of the Carolinas Society of Environmental Toxicology and Chemistry (CSETAC)
2016-2022: Board Member of the Carolinas Society of Environmental Toxicology and Chemistry
2012-Present: Member of the Geochemical Society
2010-Present: Member of the Society of Environmental Toxicology and Chemistry (SETAC)
2010-2014: Member of the NORMAN Network; WG4 - Engineered Nanomaterials in the Environment

Profiles

- ORCID ID: <http://orcid.org/0000-0001-7491-4954>
Research ID: <http://www.researcherid.com/rid/F-6494-2011>
SCOPUS: <https://www.scopus.com/authid/detail.uri?authorId=8941790200>
Google Scholar: <https://scholar.google.com/citations?user=DPT8ChMAAAAJ&hl=en>
Research Gate: https://www.researchgate.net/profile/Mohammed_Baalousha2

Supervision and Mentoring

Current Students and postdoctoral researchers

- | | | | |
|-------------------|-----|--------------|------------------------------|
| 1. Ellison Nabi | PhD | 2026-present | University of South Carolina |
| 2. Tayyip Kanber | PhD | 2026-present | University of South Carolina |
| 3. Saleh Almasudi | PhD | 2023-present | University of South Carolina |

Former Students and postdoctoral researchers

- | | | | |
|----------------------|----------------|-----------|------------------------------|
| 4. Mahbub Alam | PhD | 2021-2026 | University of South Carolina |
| 5. Swasmi Purwajanti | Fulbright | 2023-2024 | University of South Carolina |
| 6. Jingjing Wang | postdoc | 2017-2022 | University of South Carolina |
| 7. Madeleine Meyer | Research Assis | 2018-2020 | University of South Carolina |
| 8. Frederic Loosli | postdoc | 2016-2018 | University of South Carolina |
| 9. Yusuf Nur | postdoc | 2013-2014 | University of Birmingham, UK |
| 10. Samantha McNeal | Research Assis | 2015-2016 | University of South Carolina |
| 11. Talal Alshehri | PhD | 2020-2025 | University of South Carolina |
| 12. Md Mohammed Nabi | PhD | 2018-2022 | University of South Carolina |

13. Ammar Al Rishm	PhD	2016-2021	University of South Carolina
14. Mithun Sikder	PhD	2015-2019	University of South Carolina
15. Kamelia Afshinnia	PhD	2014-2018	University of South Carolina
16. Salahaddin Kamrani	PhD	2015-2018	Kharazmi University, Iran
17. Zebang Yi	PhD	2017-2018	Sun Yat-Sen University, China
18. Raza Ghulam	PhD	2010- 2015	University of Birmingham
19. Ashwini Prasad	PhD	2010- 2015	University of Birmingham
20. Laura-Jayne Ellis	PhD	2010-2014	University of Birmingham
21. Juliette Le Hec	MS	2024	University of South Carolina
22. Ambroise Delisee	MS	2023	University of South Carolina
23. Adam Davis	MS	2011-2012	University of Birmingham
24. Carson T Bowen	BSc	2020-2021	University of South Carolina
25. Braden Schar	BSc	2019-2020	University of South Carolina
26. Madeleine Terpilowski	BSc	2017-2019	University of South Carolina
27. Josette Gauthier	BSc	2017-2018	University of South Carolina
28. Katlin Thomas	BSc	Fall 2017	University of South Carolina
29. Madeline Pearce	BSc	Fall 2016	University of South Carolina
30. Nicholas M Gray	BSc	Fall 2015	University of South Carolina
31. Ross F Lordo	BSc	Fall 2015	University of South Carolina
32. Brittany Haynes	BSc	Summer 2015	University of South Carolina
33. Imani Gibson	BSc	Summer 2014	University of South Carolina
34. Jisoo Lee	High School	Summer 2023	University of South Carolina
35. Anne Mcelvenny	High School	Summer 2017	University of South Carolina
36. Brandon Marrone	High School	Summer 2016	University of South Carolina
37. Avery Graham	High school	Summer 2015	University of South Carolina
38. Jack Runge	High school	Summer 2014	University of South Carolina

University Wide Training

2025-2027: Propel Mentor: Mentoring junior faculty to develop extramural funding grants to National Science Foundation. https://sc.edu/about/offices_and_divisions/research-training-education/faculty-research-trainings/propel/

2019-2025: Entering Mentoring Training: train faculty across the University of South Carolina on mentoring graduate students. https://sc.edu/about/offices_and_divisions/cte/programs/certificate_completion/entering_mentoring/

Conference Organization

1. Scientific organizing committee. 21st International Symposium on Field- and Flow-Based Separations (FFF 2022), CA, USA, May 2022
2. Conference Chair. Carolinas Society of Environmental Chemistry and Toxicology. Columbia, SC, USA, May 17 and 18th, 2021.
3. Chairing a session at the International Symposium on Field- and Flow-Based Separations (FFF2020). Vienna, Austria, February 2020

4. Session co-organizer. 257th American Chemical Society National Meeting, Orlando, March 31 to April 4th 2019
5. Conference Chair. 19th International Symposium on Field- and Flow-Based Separations (FFF2018). Columbia, SC, USA, May 2018. <http://web.asph.sc.edu/fff2018/>
6. Scientific organizing committee. 18th International Symposium on Field- and Flow-Based Separations (FFF 2016), Dresden, Germany, May 2016
7. Local organizing committee. International Conference on the Environmental Effects of Nanoparticles and Nanomaterials (ICENN 2014), Columbia, SC, USA, August 2014.

Reviewer

- Panelist for NSF, 2015, 2021, 2022, and 2025
- Expert on the EPA/CESER Technical Qualification Board (TQB), 2020
- Reviewer, AEESP SSC Academic Job Application Review 2020
- Ad hoc reviewer for several national and international funding agencies including National Science Foundation (USA) and cost action proposal (EU), UK National Research Council, and others.
- Peer reviewer for several scientific journals such as Nature Nanotechnology, Environmental Science and Technology, Water Research, Journal of Hazardous Materials, Environmental Toxicology and Chemistry, Environmental Chemistry, Fibre and Particle Toxicology, Journal of Chromatography
- Member of the United Kingdom natural environmental research council Peer Review College

Funded Research Grants (Total funding \$ 5,988,021; Baalousha group share \$ 3,693,800)

2026 Title: Comprehensive assessment of organic and inorganic chemicals in wildland-urban interface fires

Role: PI

Dates: September 2026 to August 2029

Funder: UL Research Institutes

Award: \$200,000

2025 Title: Transformation of metal oxide nanomaterials in wildland-urban interface fires causes congenital heart disease

Role: Co-I (PI: Mohammed Azhar, School of Medicine Columbia)

Dates: January 2025 to January 2027

Funder: National Institute of Health

Award: \$409,750 (share \$110,499)

Title: Impact of Moderate and High Severity Forest Fires on Metal Transformations and the Formation of Disinfection By-Products

Role: PI

Dates: January 2025 to January 2028

Funder: National Science Foundation

Award: \$420,000

Title: Spatial Variability and Physicochemical Characterization of Wildland-Urban Interface Ash

Role: Co-PI (PI: Jose Cedeno Laurent, Rutgers University)

Dates: July 2025 to June 2027

Funder: UL Chemical Insights

Award: \$200,000 (share \$ 45,000)

Title: Characterization of Ni and Pb speciation in Los Angeles wildland-urban interface fire ash

Role: PI

Dates: March 2026 to September 2026

Funder: Diamond Lightsource

Award: \$0 (Access to Synchrotron light Source)

Title: Speciation of metal(loid)s in residual and transported ash and indoor dust from the Los Angeles wildland-urban interface fire

Role: PI

Dates: Sep 2025 to August 2027

Funder: Stanford Synchrotron Radiation Lightsource

Award: \$0 (Access to Synchrotron light Source)

Title: Characterizing metal(loid) speciation and redox transformations in wildfire ash: from bulk to nanometric scales

Role: PI

Dates: March 2025 to Feb 2027

Funder: Advanced Light Source

Award: \$0 (Access to Synchrotron light Source)

Title: Characterizing metal(loid) speciation and redox transformations in wildfire ash: from bulk to nanometric scales

Role: PI

Dates: May 2025 to May 2026

Funder: National Synchrotron Lightsource II

Award: \$0 (Access to Synchrotron light Source)

Title: eBERlight: impact of iron and manganese on arsenic transformations in sediments during wildfires

Role: PI

Dates: June 2025 to May 2027

Funder: Advanced Light Source

Award: \$0 (Access to Synchrotron light Source)

2024 Title: Collaborative Research: Rapid: Transformation and mobilization of redox-sensitive metal(loid)s due to the Park Fire

Role: PI

Dates: November 2024 to October 2025

Funder: National Science Foundation

Award: \$52,706

Title: Explicit insights into hetero-aggregation of natural, incidental and engineered nanoparticles with applications for tackling climate change and environmental contaminants

Role: Co-PI

Dates: October 2024 to September 2026

Funder: Diamond Light Source

Award: \$0 (Access to Synchrotron light Source)

2023 Title: RAPID: Concentration and Form of Metal and Metal-Baring Nanomaterial Contamination in Maui Fire Ash and Soil

Role: PI

Dates: November 2023 to October 2025

Funder: National Science Foundation

Award: \$200,000

Title: NSF Convergence Accelerator Track K: COMPASS: Comprehensive Prediction, Assessment, and Equitable Solutions for Storm-Induced Contamination of Freshwater Systems

Role: Co-PI (PI, Dr. Jasim Imran, Department of Civil and Environmental Engineering, UofSC)

Dates: January 2024 to Decemeber 2025

Funder: National Science Foundation

Award: \$650,000

Title: Forest Fire Research

Role: PI

Dates: November 2023 to October 2025

Funder: Deans and VPR for research

Award: \$200,000

Title: Speciation of Mn, Cr, Cu, and As in wildland-urban interface fire ashes

Role: PI

Dates: July 2023 to July 2025

Funder: Stanford Synchrotron Radiation Lightsource

Award: \$0 (Access to Synchrotron light Source)

Title: Rapid: Time-resolved Wildfire Induced Arsenic Transformations in Soils

Role: PI

Dates: August 2023 to February 2024

Funder: Canadian Light Source

Award: \$0 (Access to Synchrotron light Source)

Title: Transformations of Arsenic in Wildfire Impacted Soils

Role: PI

Dates: January 2024 to December 2025

Funder: Canadian Light Source

Award: \$0 (Access to Synchrotron light Source)

2022 Title: ASPIREIII: Upgrade and relocation of the Bruker EMX plus Electron Paramagnetic Resonance Spectrometer to the UofSC Nuclear Magnetic Resonance Core Facility.

Role: Co-PI (PI, Dr. Linda Shimizu, Department of Chemistry and Biochemistry, UofSC)

Dates: July 2022 to December 2023

Funder: VPR for research

Award: \$18,508

2021 Title: NanoManu-Specially manufactured metal doped nanoplastics for water technology applications using Electrohydrodynamic Atomization (EHDA)

Role: Co-PI (PI, Dr. Luewton Agostinho, Wetsus, Netherlands)

Dates: December 2021 to November 2022

Funder: Wetsus

Award: €40,000 (share €5,000)

Title: International Emerging Action: Environmental exposure, fate, and effects of anthropogenic nanoparticles

Role: Co-PI (Julien Gigault, CNRS, France)

Dates: December 2021 to November 2023

Funder: CNRS

Award: €40,000 (share €7,000)

Title: ASPIRE II: A Rapid Response System for the Assessment and Prediction of Contaminant Dispersion in Wet-Weather Emergencies.

Role: Co-PI (PI, Dr. Susan Richardson, Department of Chemistry and Biochemistry, UofSC)

Dates: July 2021 to December 2023

Funder: VPR for research

Award: \$100,000 (share \$20,000)

2020 Title: Rapid Collaborative Proposal: Characterization, Quantification, and Transport of Incidental Nanoparticles from Wildland-Urban Fires in Surface Waters.

Role: PI

Dates: December 2020 to November 2024

Funder: NSF

Award: \$ 200,000 (share \$180,016)

2019 Title: CC* Networking Infrastructure: Building a Science DMZ for Data-intensive Research and Computation at the University of South Carolina

Role: SP

Dates: July 2019 to June 2022

Funder: NSF

Award: \$498,525

Title: Extremely durable graphene oxide nanoribbon reinforced concrete

Role: Co-PI

Dates: Dec 2019 to Nov 2021

Funder: Savannah River National Laboratory/DOE

Award: \$160,000

Title: ASPIRE - III- Acquisition of a Microwave System to Support Multidisciplinary Research in Material, Environmental, and Geological Sciences

Role: PI

Dates: July 2019 to June 2021

Funder: VPR for research

Award: \$68,779

Title: ASPIRE - II- Impact of Sewer Overflows on Environmental and Human Health: Columbia, SC as a Model for the United States

Role: Co-PI

Dates: July 2019 to December 2022

Funder: VPR for research

Award: \$100,000

2018 Title: MRI: Acquisition of Time of Flight-Inductively Coupled Plasma-Mass Spectrometer to Support Multi-disciplinary Research and Training in South Carolina and Nationwide

Role: PI

Dates: July 2018 to June 2022

Funder: NSF

Award: \$909,128

Title: Fate and Transport of Silver Nanoparticles in Treatment Wetlands

Role: Co-PI

Dates: Oct 2018 to September 2022

Funder: USGS

Award: \$248,201 (share \$38,601)

Title: ASPIR I-Cement Composites with Advanced Graphitic Nano-amendments for Nuclear Waste Storage

Role: Co-PI (PI: Fabio Matta, Department of Civil Engineering)

Dates: July 2018 to September 2019

Funder: USC VPR Office of Research

Award: \$15,000

Title: Rapid Access: Molecular understanding of salt-induced selective aggregation and selective sorption of dissolved organic matter to natural and engineered particles

Role: PI

Dates: May 2018 to September 2018

Funder: Environmental Molecular Science Laboratory (DOE/National Laboratory)

Award: \$60,000

2017 Title: RII Track-4: Molecular understanding of salt-induced selective aggregation and selective sorption of dissolved organic matter to natural particles

Role: PI

Dates: Sep 2017 to August 2021

Funder: NSF

Award: \$286,370

Title: 19th International Symposium on Field- and Flow-based Separations (FFF2018)

Role: PI

Dates: Feb 2017 to Feb 2019

Funder: NSF

Award: \$4,000

2016 Title: CAREER: Detection and quantification of metal-based engineered nanoparticles in surface waters

Role: PI

Dates: Aug 2016 to July 2022

Funder: NSF (CBET 1553909)

Award: \$510,000

Title: A rotating annular flume to perform interdisciplinary research on transport, erosion and resuspension of fine sediment, natural tracers and contaminants

Role: Co-PI

Dates: July 2016 to October 2017

Funder: VPR for research, University of South Carolina

Award: \$97,125

2015 Title: Non-point source contamination in stormwater system in South Carolina

Role: PI

Dates: March 2015 to November 2016

Funder: SC Sea Grant Consortium

Award: \$24,999

Title: REU supplement for "Evaluation of the role of size dispersity on nanoparticle uptake and ecotoxicity"

Role: PI

Dates: Aug 2015 to July 2016

Funder: NSF

Award: \$5,000

Title: Sewage overflows from the 1000-year event and their impacts on the cycling of carbon and toxic metals in the Congaree River watershed

Role: Co-PI

Dates: November 2015 to May 2016

Funder: SC Sea Grant Consortium

Award: \$30,000

2014 Title: Evaluation of the role of size dispersity on nanoparticle uptake and ecotoxicity

Role: PI

Dates: July 2014 to July 2018

Funder: NSF (CBET 1437307)

Award: \$299,929

2012 Title: The transfer of engineered nanomaterials from wastewater and stormwater to rivers

Role: Co-I (PI: Lars Duester)

Dates: July 2012 to June 2017

Funder: ESSEM COST Action ES1205, EU

Award: £151,960 = \$179,000

2008 Title: Quantifying the structure of very small natural aquatic colloids

Role: Co-I (PI: Jamie Lead)

Dates: July 2008 to July 2013

Funder: Natural Environmental Research Council, UK

Award: £561,965 = \$750,000

Research Impact

Peer reviewed journal publications (* corresponding author, student)

	ID/link	Citations	h-index
Google Scholar		> 13000	59
SCOPUS	8941790200	> 9300	50
Web of Science	Researcher ID: F-6494-2011	> 8200	47

Publications

In press/In print Peer-reviewed journal articles

1. **Baalousha M***, Desmau M, and Foster A. Evolution of arsenic speciation during thermal treatment simulating wildfire heating in arsenic-rich sediments. J.Hazard.Mater. **(2026)** 143271.
2. **Baalousha M***, Desmau M, Colina-Ruiz R A, Lanzirotti A, Singerling S A, Stern M A, and Alpers C N. Widespread occurrence of Magnéli phases in wildland-urban interface fire ashes. Environ.Sci.Technol. 60 (2026) 10982-10990.
3. Kamanmalek S, MacDonald P, Hutton H, Sheikh N, Croteau M-N, Alam A, **Baalousha M**, Ismail N. Impact of Polystyrene Microplastics on the Bioaccumulation of Silver Nanoparticles in *Daphnia magna*. **(2026)** EN26029.
4. Webster J, **Baalousha M**, Plumlee G S, and Saikawa E. Lead Fate and Transport following Wildland and

- WUI Fires. *Rev.Mineral.Geochem.* (2026, In Press).
5. Cedeño-Laurent J G, Calderón L, Pradeep S, Tsiodra I, Davy H, Rahmati R, Bazina L, Fu X, Batbaatar N, Tsai C S J, Mihalopoulos N, Sarkar D, Jia C, **Baalousha M**, and Demokritou P. Chemical Complexity and Enrichment in Wildland–Urban Interface Fire Emissions: A Case Study of Particulate Matter, Gas-Phase Pollutants, and Ash from the 2025 Los Angeles Fires. *J.Hazard.Mater.* 512 (2026) 142357.
 6. Moore, C R, Gingerich G A M, Childress W A, LeCompte M A, West A, **Baalousha M**, Bizimis M, Ferguson T A, Mitra S, Lane C S, Them II T R, Harris M S, Adedeji V, Langworthy C A, Alam M, Schroeder P A, Thompson A, and Jeffreys J. A 12.8 ka microspherule and nanoparticle marker horizon in stratified Paleoamerican deposits at Smith Mountain Lake (44PY152), USA. *ScienceOpen Preprints.* (2026, submitted).
 7. Moore, C R, Larsson S A, **Baalousha M**, Bizimis M, Alam M, West A, LeCompte M A, Kennett J P, Kletetschka G, Chouinard J, Adedeji A V, and Witwer T. Stratigraphic Separation of Laacher See Tephra and a Discrete Younger Dryas Boundary Fallout Layer in Southernmost Sweden. *ScienceOpen Preprints.* (2026, submitted)
 8. Moore, C R, Gingerich J A M, Childress W A, LeCompte M A, West A, **Baalousha M**, Bizimis M, Ferguson T A, Mitra S, Lane C S, Them II T R, Harris M S, Adedeji V, Langworthy K A, Alam M, Schroeder P A, Thompson A, Jeffreys J, and Defant M J. A 12.8 ka Microspherule and Nanoparticle Marker Horizon in Stratified Paleoamerican Deposits at Smith Mountain Lake (44PY152), USA. *Science Open Research.* (2026).
 9. Kennett J P, Mayewski P A, Kurbatov A V, Wolbach W S, Introne D C, Handley M, LeCompte M A, Moore C R, Kletetschka G, Adedeji A V, Razink J J, Chouinard J E, Perez J P, van Devener B, Polson R C, Witwer T, Eaton T M, Valente M J, Lanning, Jr. D B, Rapoport Y, Ellison K, Reyes A, Holladay R, Madrigal M, Albanil J, Sanchez C, Abbott D H, West A, Alam M, and **Baalousha M**. Platinum-group elements, shocked quartz, and nanodiamonds in Greenland ice-margin sequence the Younger Dryas Onset. *Airburst and Cratering Impacts 4* (2026) 20260007.
 10. Moore, C R, West A, Kennett J P, **Baalousha M**, Wolbach W S, Alam M, LeCompte M A, Lane C S, Them II T R, Ferguson T A, Adedeji A V, Young M D, Raznik J J, van Devener B, Perez J P, Polson R, Witwer T. Impact-Related Proxies, Environmental Change, and Faunal Extinctions across the Younger Dryas Boundary in Hall’s Cave, Texas. *Airburst and Cratering Impacts.* (2026)
 11. Moore C R, Tselmovich V A, LeCompte M A, West A, Culver S J, Mallinson D J, **Baalousha M**, Kennett J P, Napier W M, Bizimis M, Adedeji V, Sutton S R, Kletetschka G, Langworthy K A, Perez J P, Witwer T, Young M D, Alam M, Jeffreys J, Greenwood R C, Malley J A, and Defant M J. A 12,800-year-old layer with cometary dust, microspherules, and platinum anomaly recorded in multiple cores from Baffin Bay (expanded). *Airburst and Cratering Impacts.* 4 (2026) 20260004
 12. Moore C R, LeCompte M A, West A, **Baalousha M**, Bizimis M, Mallinson D J, Brooks M J, Goodyear A C, Ferguson T A, Mitra S, Lane C S, Them T R, Pyne-O’Donnell S, Wolbach W S, Adedeji V, Harris M S, Alam M, Kletetschka G, Defant M J, Martínez-Colón M, Taylor S G, Stone P A, Abbott D H, and Witwer T. Microspherules, meltglass, and nanoparticles from the Younger Dryas boundary layer at White Pond, USA. *Airburst and Cratering Impacts.* 4 (2026) 20260003.
 13. Justen P T, Jaynes E K, Beavers C A, **Baalousha M**, and Richardson S D. Increased drinking water toxicity after wildfire at the wildland-urban interface; more and new disinfection byproducts formed from urban ash organic matter. *Wat. Res.* 59 (2025) 14030-14040.
 14. Xie Q, Chen Q, Liu P, Qin Z, Zhu R, **Baalousha M***, and Hochella Jr M F. Divergent roles of clay versus iron (hydr)oxides minerals in preserving soil organic matters during wildfire heating. *Environ.Sci.Technol.* 59 (2025) 15803-15815.
 15. Alam M, Downey A R J, Cai B, Baalousha M. Elemental composition of magnetic nanoparticles in wildland-urban interface fire ashes revealed by single particle-inductively coupled plasma-time of

- flight-mass spectrometer. *Nanomaterials*. 15 (2025) 1420.
16. Gleasman G, Mo X, Atkins J W, Hagan D, Campbell B, Patabandige D, Bourbonnais A, **Baalousha M**, Brooks S, Ku P, Santos F, Richardson S, Du P, and Chow A. Post-Fire biogeochemical processes – implications to source water quality in fire-influenced watersheds. *Environ. Sci. Technol.* 59 (2025) 14767-14779.
 17. Alam M, Singerling S A, Erfani M, Alpers C N, and **Baalousha M***. Metallic incidental nanomaterials in wildland-urban interface ashes. *Environ. Sci. Nano.* 12 (2025) 3218-3230.
 18. Alshehri T, Jassim A Y, Richardson T L, and Baalousha M. Comparative assessment of the impacts of wildland-urban interface fire ash on growth of the diatom *Thalassiosira weissflogii*. *Nanomaterials*. 15 (2025) 422.
 19. Boivin G, Wang J, Baalousha M, Gigault J, Landry V, and Ritcey A. Silver Nanoparticles as Antifungal Agents in Acrylic Latexes: Influence of Initiator on Nanoparticle Encapsulation Efficiency and Leaching. *Colloid.Polym.Sci.* 303 (2025) 857-865.
 20. Hancock D, Wamai D P, Khan Md A, Winford J, Downey A R J, Baalousha M, and Crawford T M. Continuous water quality monitoring using field deployable NMR and explainable AI. *Proceedings of SPIE – Int. Soc. Opt. Eng.* 13482 (2025) 134820I.
 21. Ahmad Mir I, Ghosh P, Bhattacharaya A, and **Baalousha M***. Origin, distribution, fate, and risks of potentially toxic elements in the aquatic environment of Bengaluru Metropolis, India. *J.Hazard.Mater.* 480 (2024) 135962.
 22. Gigault J, Gibaud M, Cai H, Guilmette C, Decaulne A, Cron D, Alam M, and **Baalousha M***. Waste Combustion Releases Anthropogenic Nanomaterials in Indigenous Arctic Communities. *Environ.Sci.Technol.* 24 (2024) 15170-15180.
 23. Cedeño L J G, Parhizkar H, Calderon L, Lizonova D, Mihalopoulos N, Tsiodra I, Kavouras I, Alam M, **Baalousha M**, Bazina L, Kelesidis G A, and Demokritou P. Physicochemical characterization of the particulate matter in New Jersey, USA resulting from the Canadian Quebec wildfires in June 2023. *Environ.Sci.Technol.* 58 (2024) 14753-14763.
 24. Alam M, Sitter J, Vannucci A, Webster J P, Matiassek S J, Alpers C N, and **Baalousha M***. Environmentally persistent free radicals and other paramagnetic species in wildland-urban interface fire ashes. *Chemosphere* 363 (2024) 142950.
 25. Correa Velez K E, Alam M, **Baalousha M**, and Norman R S. Wildfire ashes from the Wildland Urban Interface alter *Vibrio vulnificus* growth and gene expression. *Environ.Sci.Technol.* 58 (2024) 8169-8181
 26. **Baalousha M***, Wang J, Nabi M M, Alam M, Erfani M, Gigault J, Blanche F, Davranche M, Al-Abed S R, Potter P. Elemental fingerprint as a potential tool for tracking the fate of real-life model nanoplastics generated from plastic consumer products in environmental systems. *Environ.Sci.Nano.* 11 (2024) 373-388.
 27. Martin J S, Downey A R J, Baalousha M, and Won S H. Rapid Measurement of Magnetic Particle Concentrations in Wildland-Urban Interface Fire Ashes and Runoff Using Compact NMR. *IEEE Sensors Journal* 24 (2024) 7355.
 28. Ditta Z M, Laohana P, Tanapongpisit N, Saenrang W, Boonlue S, Sata V, **Baalousha M**, and Ekprasert J. Microbially induced carbonate precipitation by *Lysinibacillus* sp. WH enhances the mechanical and self-healing properties of cementitious composite containing incinerated sugarcane filter cake. *Sci.Rep.* 14 (2024) 6716.
 29. Corrigendum to “Yan C, Liu H, Huang X, Sheng Y, Nie M, **Baalousha M***. Fluorescence characterization of fractionated colloidal organic matter in the five tributaries of Poyang Lake, China. *Sci.Tot.Environ.* 637-638 (2018) 1311-1320”. 906 (2024) 167468.
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140. Martin J, Downey A, **Baalousha M**, and Won S H. Measurement of Magnetic Particle Concentrations in Wildfire Ash via Compact NMR. 2022 IEEE SENSORS conference, Oct 30 - Nov 2, 2022, Dallas, Texas United States.
141. Iffat S, Matta F, Gaillard J, Levington M, Sikder M, **Baalousha M**, and Tinkey S. Partially Unzipped Multiwalled Carbon Nanotubes as Low-Concentration Amendment of Cement Paste. *7th Int. Symposium on Nanotechnology in Construction (NICOM7)*, July 11-14, 2021, Melbourne, Australia.
142. Iffat S, Matta F, Gaillard J, Levington M, Sikder M, **Baalousha M**, and Tinkey S. Feasibility Study of Partially-Unzipped Carbon Nanotube-Amended Cement Paste. *2nd International Conference on Nanotechnology of Cement and Concrete (2NCC20)*, The National Academies of Sciences, Engineering, and Medicine, May 20-22, 2020, Irvine, CA, 10 p.
143. Matta F, Cuéllar-Azcárate M C, Wylie E M, Mejia Y, Iffat S, Sikder M, Powell B, Serkiz S, Caicedo J, and **Baalousha M**. "Nano-Amended Cement Waste Forms for Nuclear Waste Storage," *Proc. 6th Int. Symposium on Nanotechnology in Construction (NICOM6)*, December 2-5, 2018, Hong Kong, China, S.P. Shah, D. Yu and C.S. Poon (Eds.), Paper N6T05057, 9 p. [invited].

Edited Books

144. Guéguen C, **Baalousha M**, and Williams K R. Field Flow Fractionation: Principles and Applications. Wiley. **2026**.
145. **Baalousha M** and Lead J R. Characterization of nanomaterials in complex environmental and biological media. Elsevier, Frontiers of Nanoscience. 2015.

Peer Reviewed Book Chapters

146. Dou H, Williams K R, **Baalousha M**, and Guéguen C. Field flow fractionation user guide. In Guéguen C, **Baalousha M**, and Williams K R. Field Flow Fractionation: Principles and Applications. Wiley. **2026**.
147. Palchoudhury S, **Baalousha M** and Lead J R. Methods for measuring concentration (mass, surface area and number) of nanoparticles. In Baalousha M and Lead J R. Characterization of nanomaterials in complex environmental and biological media. Elsevier, Frontiers of Nanoscience. 2015.
148. **Baalousha, M.**, W. How, E. Valsami-Jones, and J. R. Lead. Overview of environmental nanoscience, in E Valsami-Jones and JR Lead eds., Nanoscience and the Environment: Elsevier, Frontiers of Nanoscience. 2014
149. **Baalousha M**, Ju-Nam Y and Lead J R. Natural colloids and engineered nanoparticles. In Frimmel F. Treatise on Water Science, Volume III, Aquatic Chemistry and Microbiology. 2011.
150. **Baalousha M**, Lead J R, Von der Kammer, F and Hofmann, Th. Natural colloids and nanoparticles in aquatic and terrestrial environments. In Lead, J.R, Environmental and human health effects of nanoparticles. Blackwell publisher, 2009.
151. **Baalousha M** and Lead J R. Introduction into environmental and human health nanoparticles. In Lead, J.R, Environmental and human health effects of nanoparticles. Blackwell publisher, 2009.

Patents

Matta F, Serkiz S, **Baalousha M**, Gaillard J, Iffat S. (2023). Nano-amended cement composites for nuclear waste storage. U.S. Patent Application No. 18/331,395.

Edited special issues

Gust Editor. Extraction and Adsorption of Chemicals from Wastewater. *Molecules*. 2026-2027.

Gust Editor. Environmental fate, transport, and effects of nanoplastics. *Nanomaterials*. 2024-2025.

Gust Editor. Catalytic Nanomaterials: Energy and Environment. *Molecules*. 2022-2023.

Gust Editor. Fate, Behaviors, and Environmental and Human Health Effects of Nanomaterials. *Molecules*. 2020-2021.

Guest editor. Themed issue on Modeling in Environmental Nanotechnology in *Environmental Science: Nano*. 2015

Keynote and Invited presentations

1. **Baalousha M.** Nature and transformations of metal(loid)s in wildland-urban interface fires: lessons learned from LNU Lightning Complex Fire, the North Complex Fire, and the Los Angeles Fire. Society of Toxicology. March 2026, San Diego, California, United States.
2. **Baalousha M.** Incidental nanomaterials and redox transformations of metal(loid)s in wildland-urban interface fires. University of North Carolina Wilmington. March 2026, Wilmington, North Carolina, United States.
3. **Baalousha M.** Wildfire-induced redox transformations of redox sensitive metal(loid)s. School of Earth Ocean, and Environment. February 2026, Columbia, South Carolina, United States.
4. **Baalousha M.** Nature and transformations of metal(loid)s and nanomaterials in wildland-urban interface fire ash. Moncton University. October 2025, Moncton, Canada (Virtual Conference).
5. **Baalousha M.** Redox and Phase Transformations of Metal(loid)s in Wildland Urban Interface Fire Ash and Heated Soils. Synchrotron Environmental Science. September 2025, Stony Brook, New York, United States.
6. **Baalousha M.** Analysis of environmental nanomaterials and nanoplastics using single particle-inductively coupled plasma-time of flight-mass spectrometry. 4th TofCON. December 2023, Berlin, Germany (Virtual Conference).
7. **Baalousha M.** Anthropogenic nanomaterials in environmental systems: impact of urbanization and wildfires. Chulalongkorn University. Thailand. May 2023.
8. **Baalousha M.** Anthropogenic nanomaterials in environmental systems: impact of urbanization and wildfires. Khon Kaen University. Thailand. May 2023.
9. **Baalousha M.** Application of carbon nanomaterials for cement reinforcement and analysis of nanomaterials in environmental systems. Khon Kaen University. Thailand. May 2023.
10. **Baalousha M.** Discovery of incidental nanomaterials in wildland-urban interface fire ashes. College of Charleston. September 2022.
11. **Baalousha M.** Properties and transformations of nanomaterials in fires at the wildland-urban interface. United States Geological Survey. April 2022 (Virtual presentation).
12. **Baalousha M.** Analysis of anthropogenic nanomaterials in urban rainfall and runoff using single particle-inductively coupled plasma-time of flight-mass spectrometry. 2nd TofCON. November 2021, Berlin, Germany (Virtual Conference).
13. **Baalousha M.** Metallic fingerprint in micro-nano-plastics (MNPs) generated from real-life plastic materials. Wetsus Congress 2021. European Center of Excellence for Sustainable Water Technology.

October 2021, Leeuwarden, Netherlands.

14. **Baalousha M.** Analysis of natural and engineered nanomaterials in environmental systems by AF4-ICP-MS. 20th International Symposium on Field- and Flow-Based Separations. February 2020, Vienna, Austria (Oral presentation).
15. **Baalousha M.** Analysis of engineered nanomaterials in environmental systems. 14th International Conference on the Environmental Effects of Nanoparticles and Nanomaterials. September 2019, Vienna, Austria (Oral presentation).
16. **Baalousha M**, Loosli F, Yi Z. Widespread occurrence of titanium dioxide engineered nanoparticles in the environment. American Chemical Society. Boston, MA, USA. August. 2018.
17. **Baalousha M**, Loosli F, Yi Z, and Yang J. Detection and quantification of engineered nanomaterials in surface waters in South Carolina. International Conference on Heavy Metals in the Environment. Athens, GA, USA. July 2018
18. **Baalousha M.** Quantification and characterization of engineered nanomaterials in surface waters. University at Buffalo, NY, USA. November 2017
19. **Baalousha M.** Fate and behaviour of engineered nanomaterials in the environment. School of Freshwater Sciences. University of Wisconsin-Milwaukee. Milwaukee, WI, USA. Fall 2016
20. **Baalousha M.** Development and application of fully quantitative sampling approach for engineered nanomaterial analysis by microscopy techniques. International Workshop, Engineered Nanoparticles in Environmental Systems: Fate, Transport, Effects and Analytics. Landau in der Pfalz, Germany. October 2016 (**Keynote speaker**)
21. **Baalousha M.** Behavior of silver nanoparticles in marine environment and toxicity to estuarine copepod, *Amphiascus tenuiremis*. Southeaster Society of Toxicology, GA, USA. October 2016 (**Keynote speaker**)
22. **Baalousha M.** Effect of nanomaterial and media physicochemical properties on nanomaterial aggregation kinetics. 10th International Conference on the Environmental Effects of Nanoparticles and Nanomaterials. Golden, CO, August 2016. (**Keynote speaker**)
23. **Baalousha M.** Environmental characterization, fate, and behavior of engineered nanomaterials at environmentally relevant concentrations. Department of Civil and Environmental Engineering. University of South Carolina. April 2016.
24. **Baalousha M.** Does concentration matter? Centre for the Environmental Implications of Nano Technology. Duke University. Durham, NC. December 2015.
25. **Baalousha M.** The concentration-dependent behaviour of engineered nanomaterials. Virginia Tech. Blacksburg, VA. USA. December 2015.
26. **Baalousha M.** Characterization of nanomaterial properties and environmental behaviour: a multi method approach. East China Normal University. November 2015.
27. **Baalousha M.** Fate, behavior and transport of engineered nanomaterials in aquatic systems. Beijing Conference and Exhibition on Instrumental Analysis (BCEIA). Beijing, China. October 2015.
28. **Baalousha M.** Environmental Fate and Behavior of NMs. What does it mean for Nano(eco)toxicology? Centre for Environmental Nanoscience and Risk. University of South Carolina. March 2014.
29. **Baalousha M.** Environmental Nanoscience and Risk. King Abdullah University of Science and Technology, Saudi Arabia, November 2013.
30. **Baalousha M.** Nanoparticle properties and behaviour: fundamental consideration in nanotoxicology. Rimouski University, University of Quebec at Rimouski, Quebec, Canada, September 2013

31. **Baalousha M.** Characterization and behaviour of nanomaterials in ecotoxicological media: impact on nanomaterial toxicity. Technical University of Denmark, Denmark. September 2013
32. **Baalousha M.** Comparison of nanomaterial sizes measured by different analytical tools. CPD training course. University of Leeds, UK. September 2012.
33. **Baalousha M.** Rationalising nanoparticle sizes measured by AFM, FIFFF and DLS: sample preparation, polydispersity and particle structure. Goldschmidt, June 2012. Montreal, Canada.
34. **Baalousha M.** QNTR modelling relevant to species in the natural environment. COST explanatory workshop on quantitative nanostructure activity relationships (QNTR). April 2011. Maastricht. Netherlands.
35. **Baalousha M.** Characterization of nanoparticles in complex media. CPD training course. University of Birmingham, UK. September 2010.
36. **Baalousha M** and Lead J R. Quantifying the structure of natural aquatic colloids (<5 nm) by Flow-Field Flow Fractionation and Atomic Force Microscopy. Chemodynamics, October 2008, Monte Verita, Switzerland.
37. **Baalousha M.** Characterization of natural colloidal particles by field flow fractionation coupled to ICPMS and TEM. University of Geneva. November 2005.

Conference presentations (student and postdoctoral fellow presentation underlined)

38. Alam M, Downey A, and **Baalousha M.** Investigating the elemental composition of magnetic nanoparticles in wildland-urban interface fire ash. SETAC North America 46th Annual Meeting. November 2025, Portland. Oregon.
39. Richardson S, Justen P, Jaynes E K, Beavers C, Alshehri T, Alam M, and **Baalousha M.** Impact of urban wildfires on drinking water: Urban structural ash produces more toxic disinfection byproducts than vegetation ash. American Society for Mass Spectrometry. June 2025, Maryland, United States.
40. Alshehri T, Jassim A, Richardson T, and **Baalousha M.** Unveiling the toxicity of wildfire ash to Marine phytoplankton: a case study with *Thalassiosira weissflogii*. American Chemical Society. August 2024. Colorado, United States.
41. Alam M, Sitter J, Vannucci A, Webster J P, Matiassek S J, Singerling S A, Erfani M, Alpers C N, and **Baalousha M.** Environmental contaminants in wildland-urban interface fire ash: environmentally persistent free radicals and incidental nanomaterials analysis. American Chemical Society. August 2024. Colorado, United States.
42. Desmau M, Bondici V, Ebrahim A, Schoepfer V A, Skierszkan E K, Lindsay M B J, **Baalousha M**, Chernikov R. The BioXAS sector at the Canadian Light Source: Three Beamlines to Tackle the Challenge Raised by Wildfire, Thawing Permafrost, and Metalloid Remediation. Goldschmidt. August 2024. Chicago. Illinois. United States.
43. **Baalousha M.** Concentrations and Transformation of Metal-Bearing Inorganic Nanomaterials in Fires at the Wildland-Urban Interface. 18th International Congress on Combustion By-Products and their Health Effects. May 2024. Duke, NC, United States.
44. Alam M and **Baalousha M.** Identification and Quantification of Environmentally Persistent Free Radicals and Metallic Incidental Nanomaterials in Wildland-Urban Interface Fire Ashes. 18th International Congress on Combustion By-Products and their Health Effects. May 2024. Duke, NC, United States.
45. Justen P T, Böckenholt E; Richardson S D; **Baalousha M.** Non-target Identification of Harmful Organic Compounds in Weathered Marine Microplastics by High-Resolution Gas Chromatography-Time-of-Flight-Mass Spectrometry. ASMS. June 2024. Anaheim, California. United States.

46. Moreira K S, van de Molen E S, Pescicolo M, **Baalousha M**, Sochorakis N, Fuchs A P, Agostinho L L F. Reference (marked) nanoplastics produced using coaxial EHDA. 7th European Symposium on Electrohydrodynamic Atomization and Electrospinning. April 2024. Leeuwarden, Netherlands.
47. Kamanmalek S, MacDonald P, Hutton H, Sheikh N, **Baalousha M**, and Ismail N. Assessing the Impact of Microplastics on the Bioaccumulation of Silver Nanoparticles in *Daphnia magna*. Association for Environmental Engineering and Science Professors Conference. Boston, MA, United States. June 2023.
48. Matiassek S J, Alpers C N, Baalousha M, Zhao H, Kolodziej E, and Webster J. Water Quality Impacts of Wildland-Urban Interface Fires in Northern California. American Geophysical Society (Agu23). December 2023. San Francisco, CA, United States.
49. Matiassek S J, Alpers C N, **Baalousha M**, Zhao N, Kolodziej E, and Webster J. Water Quality Impacts of Two Wildland-Urban Interface Fires in Northern California. American Geological Union. September 2023. San Francisco, United States.
50. Pescicolo M, Carrasco Munoz A J, Agostinho L L F, **Baalousha M**, Tolsma J, Resendiz I S, and Gangar P. Metal-doped polymeric nanoplastics using co-axial electrohydrodynamic atomization. 6th European Symposium on Electrohydrodynamic Atomization and Electrospinning. July 2023. Krakow, Poland.
51. Baalousha M. Identification and quantification of incidental nanomaterials in wildland-urban interface fire ashes. 3rd ToFCON. November 2022. Berlin, Germany (Virtual Conference)
52. Baalousha M. Incidental nanomaterials in wildland-urban interface fire ashes. Extreme Events Workshop. October 2022, Raleigh. NC USA.
53. Baalousha M. The nature of incidental nanomaterials in wildland-urban interface fire ashes. 15th International Conference on the Environmental Effects of Nanoparticles and Nanomaterials. August 2022, Montreal, Canada.
54. Perkins A A, Bowen C T, Baalousha M; Richardson S D. Identification of Unknown Contaminants in California Wildfire Ash Samples. American Society for Mass Spectrometry. 2022. MN. USA.
55. Lesser E, Sheikh N, Sikder M, Croteau M, **Baalousha M**, Ismail N S. The effect of complex aqueous matrices and exposure route on the bioaccumulation dynamics of silver nanoparticles in *Daphnia magna*. Society of Environmental Toxicology and Chemistry 42nd Annual Conference. November 2021. Virtual Conference. USA.
56. Matta F, Iffat S, Elvington M, Gaillard J, **Baalousha M**, and Meany J. Practical amendment of cement composites with low concentrations of unzipped carbon nanotubes. American Chemical Society. August 2021.
57. **Baalousha M**. Analysis of metallic fingerprint in nanoplastics using SP-ICP-TOF-MS and clustering analysis. Carolinas and Southeast Society of Environmental Toxicology and Chemistry. May 2021. Columbia, SC, USA.
58. Wang J, and **Baalousha M**. Metallic fingerprint in real-life nanoplastics. 2021 Carolinas and Southeast Society of Environmental Toxicology and Chemistry. May 2021. Columbia, SC, USA.
59. Nabi M, Wang J, and **Baalousha M**. Urban runoff is the key driver of titanium dioxide engineered particle concentrations in the Broad River. 2021 Carolinas and Southeast Society of Environmental Toxicology and Chemistry. May 2021. Columbia, SC, USA.
60. Iffat S, Matta F, Gaillard J, Livingston M, Sikder M, Baalousha M, and Tinkey S. Feasibility study of partially-unzipped carbon nanotube-amended cement paste. 2nd International Conference on Nanotechnology Cement and Concrete. May 2020. Irvine, CA, USA.
61. Yasser A, Wang J, and Baalousha M. Toxicological effects induced by free-ionic silver and engineered silver nanoparticles toward the juvenile Clams (*Mercenaria Mercenaria*). Annual Carolina Society of Environmental Toxicology and Chemistry (CSETAC). May 2020. Boone, NC, USA.

62. Iffat S, Matta F, Gaillard J, Livingston M, Sikder M, **Baalousha M**, and Tinkey S. Feasibility study of partially unzipped carbon nanotube-amended cement paste. 2nd International Conference on Nanotechnology Cement and Concrete. May 2020. Irvine, CA, USA.
63. Loosli F, Yi Z, Wang J, and **Baalousha M**. Dispersion of natural nanomaterials in surface waters for better characterization of their physicochemical properties by AF4-ICP-MS-TEM. 14th International Conference on the Environmental Effects of Nanoparticles and Nanomaterials. September 2009, Vienna, Austria (Poster).
64. Sider M, Chandler G T, Wang J, and **Baalousha M**. Size-dependent bioaccumulation of platinum nanoparticles in estuarine amphipod, *Leptocerious plumulosus*, using single particle ICP-MS. 20th International Symposium on Pollutant Responses in Marine Organisms. May 2019. Charleston, SC, USA.
65. **Baalousha M**. Environmental exposure to titanium dioxide engineered nanomaterials. American Chemical Society National Meeting & Expo. Orlando, FL, USA. April 2019. (Oral)
66. **Baalousha M**. Monitoring titanium dioxide engineered nanoparticles in environmental systems. American Chemical Society National Meeting & Expo. Orlando, FL, USA. April 2019. (Poster)
67. Wang J, Loosli F, Afrooz N, Mohanty S K, and **Baalousha M**. Quantification of TiO₂ engineered nanoparticles in biosoils. American Chemical Society National Meeting & Expo. Orlando, FL, USA. April 2019. (Poster)
68. Sikder M, G T Chandler, and **Baalousha M**. Size-dependent bioaccumulation of platinum nanoparticles in the estuarine amphipod, *Leptocheirus Plumulosus* using single particle-inductively coupled plasma-mass spectrometer. Pollutant Responses in Marine Organisms (PRIMO20). Charleston, SC, USA. May. 2019. (Oral)
69. **Baalousha M**. Engineered nanomaterials in surface waters impacted by sewage spills in Columbia, South Carolina. SC Water Resources Conference. Columbia, SC, USA. October. 2018. (Oral)
70. **Baalousha M**, Loosli F, Wang J. Detection and quantification of engineered nanoparticles in surface waters impacted by sewage spills in Columbia, South Carolina. QUEEN Workshop: Quantifying Exposure to Engineered Nanomaterials (QEEN) from Manufactured Products. Arlington, VA, USA. October. 2018. (poster)
71. **Baalousha M**, Loosli F, Yi Z, Wang J. Environmental concentrations of engineered nanoparticles in surface waters impacted by sewage spills in Columbia, South Carolina. International Conference on the Environmental Effects of Nanoparticles and Nanomaterials (ICEENN). Durham, NC, USA. September 2018. (Oral)
72. Borovinskaya O, Flamigni L, **Baalousha M**, Meier F. Extending dimensions of multi-element single particle analysis by ICP-time-of-flight MS. International Conference on the Environmental Effects of Nanoparticles and Nanomaterials (ICEENN). Durham, NC, USA. September 2018. (Oral)
73. Borovinskaya O, Flamigni L, Meier F and **Baalousha M**. Synergy of multi-element single particle ICP-Tofms and field-flow fractionation for analysis of complex samples. Goldschmidt. Boston, MS, USA. August 2018. (Oral)
74. Sikder M, Barasch D, Croteau M-N, Poulin B, **Baalousha M**. Effect of size and natural organic material on the uptake of platinum nanoparticles in freshwater snail, *Lymnaea stagnalis*. International Conference on Heavy Metals in the Environment. Athens, GA, USA. July 2018. (Oral)

75. **Baalousha M**, Loosli F, Yi Z. Detection and quantification of engineered nanomaterials in surface waters in South Carolina. Annual Carolina Society of Environmental Toxicology and Chemistry. Durham, NC, USA. April. 2018. (Oral)
76. Afshinnia K, and **Baalousha M**. Impact of natural organic ligands on the colloidal stability of silver nanoparticles. South Carolina Environmental Conference, American Chemical Society National Meeting & Expo. New Orleans, LA, March 2018. (Oral)
77. Afshinnia K, and **Baalousha M**. Impact of natural organic ligands on the colloidal stability of silver nanoparticles. South Carolina Environmental Conference, American Water Works Association, Myrtle Beach, SC, 2018. (Poster)
78. **Baalousha M**. Environmental concentrations and Interactions of engineered nanoparticles. Environmental Molecular Science Laboratory. Pacific Northwest National Laboratory. March, WA, USA. 2018.
79. **Baalousha M**. Characterization of Nanomaterial Natural Organic Matter-Corona (NOM-corona) by Ultrahigh Resolution Fourier Transform-Ion Cyclotron-Mass spectroscopy. 12th International Conference on the Environmental Effects of Nanoparticles and Nanomaterials. Birmingham, UK, September 2017.
80. Afshinnia K, and **Baalousha M**. Impact of Organic Ligands on the Colloidal Stability and Dissolution Behavior of Silver Nanoparticles. 1st Annual Discover USC Showcase, April 21, 2017, Columbia, SC (Poster)
81. Yi Z, and **Baalousha M**. Using the H- and O- isotopic data and Br/Cl ratio as a tracer to identify the origin of salinity in shallow groundwater in Guangzhou region, China. 1st Annual Discover USC Showcase, April 21, 2017, Columbia, SC (Poster)
82. Sikder M, Stewart E, Losavio M, Chandler G T, **Baalousha M**. Size Dependent Toxicity of Polyvinylpyrrolidone Coated Platinum Nanoparticles. 1st Annual Discover USC Showcase, April 21, 2017, Columbia, SC (Poster)
83. Matta F, Cuéllar-Azcárate M, Wylie E, Mejia Y, Iffat S, Sikder M, Yuyu Xie, Brian Powell, Steven Serkiz, Juan Caicedo, **Mohammed Baalousha**, Joseph Flora, Linkel Boateng, Paul Ziehl. Nano-amended cement waste forms for nuclear waste storage. Sixth International Symposium on Nanotechnology in Construction (NICOM6). December 2-5, 2017, Hong Kong, China.
84. Flora J R V, **Baalousha M**, Boateng L, Caicedo J M, Cuéllar-Azcárate M C, Matta F, Mejia Y, Powell B, Serkiz S, Sikder M, Wylie E M, Ziehl P, Zohhadi N. Cement composites with graphitic nano-amendments for low-level nuclear waste storage, 5th Sustainable Nanotechnology Organization Conference, November 10-12, 2016, Orlando, FL. (oral presentation)
85. Chandler G T, **Baalousha M**, Sikder M, and Lead J R. Mediation of metal toxicity to meiobenthic copepods by Polyvinylpyrrolidone coating of silver nanoparticles. SETAC North America 37th Annual Meeting. November 2016. Orlando, FL, USA. (Poster)
86. **Baalousha M**, Boateng L, Caicedo J, Cuéllar-Azcárate M, Flora J, Iffat S, Matta F, Mejia Y, Powell B, Serkiz S, Sikder S, Wylie E, Ziehl P. Cement composites with graphitic nano-amendments for low-level nuclear waste storage. Fifth Sustainable Nanotechnology Organization Conference. November 2016. Orlando, FL, USA. (Oral presentation)
87. Matta F, **Baalousha M**, Boateng L, Caicedo JM, Cuéllar-Azcárate MC, Flora JRV, Mejia Y, Powell B, Serkiz S, Sikder M, Wylie EM, Ziehl P, Zohhadi N (2016), "Nano-Amended Cement Composites for

- Nuclear Waste Storage", *Nanotechnology for Improved Concrete Performance (ACI Committee 241)*, *ACI Fall 2016 Convention*, October. 2016, Philadelphia, PA. (oral presentation)
88. Afshinnia K, **Baalousha M**. Effect of media physicochemical properties on the aggregation kinetics of citrate-coated silver nanomaterials. The 68th South-eastern Regional Meeting of the American Chemical Society. Columbia, SC, USA, October. 2016. (oral presentation)
89. **Baalousha M**. Characterization of physicochemical and toxicological properties of ceria nanoparticles. 252 American Chemical Society National Meeting and Exposition. August 2016. Philadelphia, PA, USA. (oral presentation)
90. Afshinnia K, Gibson I, Merrifield R, **Baalousha M**. Concentration-dependent aggregation of citrate-coated silver nanoparticles: role of cystine. 10th International Conference on the Environmental Effects of Nanoparticles and Nanomaterials. Golden, CO, August 2016 (Poster)
91. Sikder M, Graham A, Merrifield R, Lead J R, Chandler G T, **Baalousha M**. Concentration-dependent dissolution of PVP-coated silver nanoparticles in seawater. 10th International Conference on the Environmental Effects of Nanoparticles and Nanomaterials. Golden, CO, August 2016 (Poster)
92. Afshinnia K, Gibson I, Merrifield E C and **Baalousha M**. Concentration-dependent aggregation of citrate coated Ag NPs induced by cystine. 251 American Chemical Society National Meeting and Exposition. March 2016. San Diego, Ca, USA.
93. **Baalousha M**. Detection and quantification of nanomaterial number concentration in environmentally relevant media by atomic force and electron microscopy. 251 American Chemical Society National Meeting and Exposition. March 2016. San Diego, Ca, USA.
94. **Baalousha M**. Urban nanomaterials. South Carolina Environmental Conference. March 2016. Myrtle Beach, SC, USA.
95. **Baalousha M**. Beyond particle size: coupling field flow fractionation to microscopy techniques. The 17th International Symposium on Field- and Flow- based Separations. October 2014 Salt Lake City. UT. USA
96. **Baalousha M**. Aggregation and sulfidation of AgNPs. The 9th International Conference on the Environmental Effects of Nanoparticles and Nanomaterials. September 2014. Columbia, SC. USA
97. **Baalousha M**. Dimensional Nanometrology. Nanotech Dubai 2013, October 2013. Dubai. United Arab Emirates.
98. **Baalousha M** and Lead J R. Rationalizing nanoparticle sizes measured by different techniques: sample preparation, polydispersity and particle structure. 7th ICEENN, September 2012. Banff. Canada.
99. **Baalousha M**. Rationalizing nanoparticle sizes measured by AFM, FIFFF and DLS: sample preparation, polydispersity and particle structure. Goldschmidt, June 2012. Montreal, Canada.
100. **Baalousha M**. QNTR modeling relevant to species in the natural environment. COST explanatory workshop on quantitative nanostructure activity relationships (QNTR). April 2011. Maastricht. Netherlands.
101. **Baalousha M**, Ju-Nam Y, Cole P and Lead J R. Characterization of nanoparticles: size, shape, morphology, oxidation state and crystallinity: a multimethod approach. Goldschmidt, August 2010, Knoxville, Tennessee, USA (Oral presentation).
102. **Baalousha M**, Ju-Nam Y and Lead J R. Characterization of nanoparticles: size, shape, morphology, oxidation state and crystallinity. Nanomaterials in the environment, September 2009, Vienna, Austria (Oral presentation).

103. **Baalousha M** and Lead J R. Quantifying the structure of natural aquatic colloids (<5 nm) by flow-field flow fractionation and atomic force microscopy. Chemodynamics, October 2008, Monte Verita, Switzerland (oral presentation and poster).
104. **Baalousha M** and Lead J R. Environmental behaviour of engineered nanoparticles. nanoECO, March 2008, Monte Verita, Switzerland (poster).
105. **Baalousha M** and Lead J R. Aggregation, disaggregation and surface properties of iron oxide nanoparticles; influence of pH and natural organic matter. SETAC UK, September 2007, London, United Kingdom (oral presentation).
106. **Baalousha M** and Lead J R. Fractionation and structural analysis of natural aquatic colloids (< 25 nm) by flow field flow fractionation and atomic force microscopy. SETAC North America 27 annual meeting, November 2006, Montreal, Canada (poster).
107. **Baalousha M**, Manuciulea A L and Lead J R. Interaction of engineered nanoparticles (iron hydroxide) with humic substances. Environmental effects of nanoparticles and nanomaterials. SETAC UK, September 2006, London, United Kingdom (oral presentation).
108. Lead J R, Manciuulea A L and **Baalousha M**. Interaction of natural and manufactured nanoparticles in aquatic systems. 2nd international conference on aquatic colloids and nanoparticles. September 2006, Plymouth, United Kingdom (oral presentation).
109. **Baalousha M** and Lead J R. Nanoparticles structure in the natural aquatic environment. September 2006, 2nd international conference on aquatic colloids and nanoparticles, September 2006, Plymouth, United Kingdom (oral presentation).
110. **Baalousha M** and Lead J R. Fractionation and characterization of natural and engineered nanoparticles by FIFFF, ICPMS and TEM. May 2006. Haag, Netherlands (poster).
111. Manuciulea A L, **Baalousha M** and Lead J R. Interaction time and pH dependent study on gold nanoparticles and carbon nanotubes: the role of natural nanoparticles. Informa Learning conference, courses and e-learning. April 2006. Boston, MA, USA (Poster).
112. **Baalousha M**, Baborowski M, Hoffmeister Ch, Motelica M and Le Coustumer P. Determination of size and chemical composition of colloids and trace element speciation in the Loire River and its tributaries using FFF-UV-FLD-ICP/MS and TEM, 8th ICOBTE, April 2005, Adelaide, Australia, (oral presentation).
113. **Baalousha M**, Motelica M and Le Coustumer P. Colloids and SPM size-based speciation using FIFFF multi detection system (ICPMS-STEM), 12th international symposium on Field Flow Fractionation. August 2005, Brno Czech Republic (oral presentation).
114. **Baalousha M**, v.d. Kammer F, Motelica M and Le Coustumer P. Characterization of river colloids by FFF-MALLS-TEM, 9th FECS Conference on Chemistry and Environment, August 2004, Bordeaux, France, (poster).
115. **Baalousha M**, Guigues N, Motelica M, and Le Coustumer P. Fractionation and characterization of aquatic colloids in the nano-metric scale, 5th Conference of the French group of the International Humic Substances Society, Mars 2003, Clermont-Ferrand, France (poster).
116. **Baalousha M**, v.d. Kammer F, Motelica M and Le Coustumer P. Three-dimensional description of colloids and particles FFF-MALLS-TEM, 17 ECIS Conference, September 2003, Florence, Italy, (Poster).

Media

Dr. Mohammed Baalousha, PhD, MSc

Baaloushas' research has been covered and featured in multiple media reports outlets around the world such as Chemical & Engineering News, Associated Press, U.S. News, University of South Carolina. Here are some examples:

- <https://cen.acs.org/acs-news/acs-meeting-news/Nanoplastics-trackable-metal-signatures/101/web/2023/08>
- <https://apnews.com/article/california-wildfires-toxic-ash-health-fa845b7573ba463bf2e61ea3042c66a2>
- <https://www.sc.edu/uofsc/posts/2025/05/breakthrough-palmetto-power.php>

Taught Courses

ENHS 321: Environmental Pollution and Health

ENHS 660: Concepts of Environmental Health Science

ENHS 740: Environmental Nanoscience

ENHS 793: Environmental Nanoscience Lab

ENHS 864: Advanced Seminar: Survey in Multi-disciplinary Research of Environmental Health Sciences

Faculty mentoring training workshops: Entering Mentoring

References

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