

# Curriculum Vitae

## Onur Guven Apul, PhD, PE

Assistant Professor  
Department of Civil and Environmental Engineering  
College of Engineering

University of Maine  
5711 Boardman Hall, Room 306, Orono, ME 04469  
(910) 200-6280 onur.apul@maine.edu www.onurapul.com

---

### TABLE OF CONTENT

Last Update 7/24/2022

EDUCATION, APPOINTMENTS, OTHER AFFILIATIONS	2
EXTERNALLY FUNDED RESEARCH PROJECTS	3
PUBLICATIONS	6
TEACHING AND MENTORSHIP EXPERIENCE	16
AWARDS AND HONORS	17
PATENT APPLICATIONS	18
PROFESSIONAL SERVICE AND INVOLVEMENT	19

## EDUCATION AND PROFESSIONAL TRAINING

---

- Post-doc.** School of Sustainable Engineering and the Built Environment, Arizona State University, Tempe, AZ, Feb. 2015 – Sept. 2017. PI: Paul Westerhoff
- Ph.D.** Environmental Engineering, Clemson University, Clemson, SC, Aug. 2014.  
Dissertation: Predictive model development for adsorption of organic contaminants by carbon nanotubes.  
Advisor: Tanju Karanfil
- M.S.** Environmental Engineering, Middle East Technical University, Ankara, Turkey, 2009.  
Thesis: Municipal sludge minimization: Evaluation of ultrasonic and acidic pretreatment methods and their subsequent effects on anaerobic digestion.  
Advisor: Dilek Sanin
- B.S.** Environmental Engineering, Middle East Technical University, Ankara, Turkey, 2006.  
Capstone Project: Trabzon municipality slaughterhouse wastewater treatment plant design.

## APPOINTMENTS

---

- Asst. Prof.** Environmental Engineering, University of Maine, Orono, ME,  
Sept. 2020 – present
- Asst. Prof.** Environmental Engineering, University of Massachusetts Lowell, Lowell, MA,  
Sept. 2017 – Aug. 2020
- Grad. Asst.** Environmental Engineering, Clemson University, Clemson, SC,  
Aug. 2009. - Aug. 2014.
- Grad. Asst.** Environmental Engineering, Middle East Technical University, Ankara, Turkey,  
Dec. 2006. - Aug. 2009.

## OTHER AFFILIATIONS

---

- Fellow** Senator George J. Mitchell Center for Sustainability Solutions, University of Maine, Orono, ME,  
2020 – present
- Associate** Frontier Institute for Research in Sensor Technologies, University of Maine, Orono, ME,  
Sept. 2021 – present
- Associate** Aquaculture Research Institute, University of Maine, Orono, ME,  
Sept. 2021 - present
- Assoc. Faculty** Environmental Engineering, Clemson University, Clemson, SC,  
Sept. 2020 - present
-

# FUNDED RESEARCH PROJECTS

---

## Ongoing Projects

1. K. Varahramyan (VPR), H. Carter (Dean), **O. Apul (co-PI, Science Lead)**, J. Bolton. PFAS Research and Analysis Center at UMaine. Maine Earmark (2022) (\$8M). Recommended
2. **O. Apul (PI)**, D. Hanigan. PFAS ERASE: Thermal Regeneration of PFAS-laden Granular Activated Carbon presents an Opportunity to Break the Forever PFAS Cycle. NSF CBET Environmental Engineering (2022) (\$500,000). Ongoing.
3. **O. Apul (PI)**, A. Venkatesan, N. Saleh. PFAS Release for Spent Granular Activate Carbons in Solid Waste Management Facilities. Environmental Research and Education Foundation – EREF (2022) (\$150,000). Ongoing.
4. **O. Apul (PI)**, S. Garcia-Segura, A. Abedi, A. Maxworth. Metastable Oxygen Nanobubbles to Advance Life Support Systems in Space Exploration. NASA (2022) (\$1,010,741 includes \$375,000 cost share). Ongoing.
5. **O. Apul (PI)**, L. Ross, S. Smith. Interpreting the extent and characteristics of microplastics pollution in Maine freshwater streams to guide a holistic mitigation strategy. USGS 104b (2022) (\$68,000 includes 1:1 cost share). Ongoing.
6. **O. Apul (PI)**, Characterization of catalyst for CO oxidation. NASA JSC and Jacobs Engineering (2022) (\$120,000). Ongoing.
7. **O. Apul (PI)**, D. Bouchard. Use of nanobubbles to improve the performance of recirculating aquaculture systems. Aquaculture Research Institute (2021) (\$5,000). Ongoing.
8. M. Estapa, **O. Apul (co-PI)**, L. Ross Do biological particles scavenge and remove microplastic fibers from the ocean? MARINE Seed Grant (2021) (\$34,970). Ongoing.
9. **O. Apul (PI)**. RII Track-IV: Superparamagnetic Iron Oxide Nanoparticles (SPIONs) as Recoverable Microwave Susceptors for Pre-hydrolysis of Waste Activated Sludge Prior to Anaerobic Digestion. NSF EPSCoR (2021) (\$133,664). Ongoing.
10. D. Hart, C. Noblet, **O. Apul (co-PI)**, Dianne Kopec, Jean MacRae. Developing and Deploying a Risk framework for PFAS management in rural America: Connecting predictive models of PFAS contamination with risk perceptions to guide management decisions. USGS 104g (2021) (\$507,394 includes 1:1 cost share). Ongoing.
11. N. Yarayan, **O. Apul (co-PI)**, S. Garcia. Investigation of Market Potential and Collaboration Opportunities for Mainstreaming Nanobubble Technologies in Turkish Water/Wastewater Recycling Industry. DOS U.S. Mission to Turkey's Grants Program (2021) (\$50,000). Ongoing.
12. **O. Apul (PI)**, S. Garcia. Evaluating Fundamental Properties of Metastable Nanobubbles towards their Integration into Water Processor Assembly of International Space Station. Maine Space Grant Consortium Seed Grant (2021) (\$100,000, includes 1:1.5 cost share). Ongoing.
13. D. Kopec, **O. Apul (co-PI)**, C. Noblet, J. MacRae, J. Peckenham. Integrated assessment of alternative management strategies for PFAS-contaminated wastewater residuals. USGS Maine WRRRI Grant (2020) (\$94,258, includes 1:1 cost share). Ongoing.
14. F. Perreault, J. Oswald, **O. Apul (co-PI)**. Collaborative Research: Understand and Predict the Adsorption of Organic Contaminants by Aging Microplastics. NSF CBET – Environmental Chemistry (2020) (\$242,000). Ongoing.

## Completed Projects

15. **O. Apul (PI)**. Girl Scouts of Maine are Learning Nanotechnology Crayon Drawing Contest. Association of Environmental Engineering and Science Professors (AEESP) Outreach Grant (2020) (\$2,000). Completed.
16. J. Reuther, **O. Apul (co-PI)**. Oxime-Modified Activated Carbon Composites for Adsorption and Detoxification of Nerve Agents. U.S. Army, HEROES Center for Advanced Materials (2020) (\$196,529). Completed.

17. D. Reckhow, J. Tobiason, **O. Apul (co-PI)**. Statewide Per- and Polyfluoroalkyl Substances Sampling Campaign. Massachusetts Department of Environmental Protection (2020) – (\$1,100,000) \*transferred the funding over to Jackie Zhang at UMass Lowell because of transition to UMaine.
18. **O. Apul (PI)**. Thermal Regeneration Technologies for Granular Activated Carbons Laden with Per- and Polyfluoroalkyl Substances. USGS Water Resources Research Institute at UMass Amherst (2020) – (\$50,000 + \$100,000 cost share) \*transferred the funding over to James Reuther at UMass Lowell because of my transition to UMaine.
19. **O. Apul (PI)**, H. Mack. Carbon Nanomaterial Enabled Combustion of Natural Gas in Constant Volume Isothermal Chambers. Industry Sponsor (2019) – (\$150,000). Completed.
20. W. Chen, **O. Apul (co-PI)**, X. Zhang. Biocrude oil and Biobased Polymer Production from Sewage Sludge via Hydrothermal Liquefaction. Massachusetts Office of Technology Commercialization and Ventures (2019) – (\$15,000). Completed.
21. J. Reuther, **O. Apul (co-PI)**. Self-Healable, Regenerable Polymer Adsorbents for Low-Energy, Reusable Water Filters. Massachusetts Office of Technology Commercialization and Ventures (2019) – (\$19,400). Completed.
22. P. Dahlen, **O. Apul (co-PI)**, P. Westerhoff. Repeated Use of Carbon Additives during Microwave Remediation for Targeted Heating of Petroleum Hydrocarbons. Industry Sponsor (2019) - (\$16,000). Completed.
23. **O. Apul (PI)**. Nitrogen Gas Adsorption for Detecting the Specific Surface Area of Novel Biopolymers. Industry Sponsor (2019) - (\$7,000). Completed.
24. J. Reuther, **O. Apul (co-PI)**. Self-Healable, Regenerable Nanoporous Membranes for Low-Energy, Reusable Water Filters. University of Massachusetts Internal Seed Grant (2019) - (\$10,000). Completed.
25. **O. Apul (PI)**, J. Reuther. Modular Polymer-Immobilized Nano-Enabled Device for Lead Capture from Drinking Water Distribution Systems. Massachusetts Office of Technology Commercialization and Ventures (2019) – (\$15,000). Completed.
26. **O. Apul (PI)**, X. Zhang. Increasing Biogas Production from Wastewater Residual Sludge by a Novel, Single-Step Nano-Enabled Thermal Pretreatment Method. Massachusetts Clean Energy Center Catalyst Program (2018) – (\$65,000). Completed.
27. **O. Apul (PI)**, Nitrogen Adsorption for Detecting the Specific Surface Area of Hybrid Metal Oxides. Industry Sponsor (2018) – (\$2,000). Completed.
28. **O. Apul (PI)**, The Value of Lead-Free Water for Lowell General Public. University of Massachusetts Lowell Community Engaged Research Program (2017) – (\$1,500). Completed.
29. P. Dahlen, **O. Apul (co-PI)**, P. Westerhoff. Additive-Augmented Microwave Remediation of Soils Containing Heavy-Hydrocarbons. Industry Sponsor (2018) - (\$100,000). Completed.
30. E. Agar, **O. Apul (co-PI)**, S. Pagsuyoin. High-Resolution Capacitive Deionization for Selective PFAS Removal, University of Massachusetts Internal Seed Grant (2018) (\$10,000). Completed.
31. **O. Apul**, P. Dahlen, P. Westerhoff. Additive Augmented, Ex-Situ Microwave Treatment for Remediation of Soils Containing Heavy Hydrocarbons. Industry sponsor (2017) – (\$50,000). Completed.
32. **O. Apul**, P. Westerhoff, T. Reid. Experimental Investigation of 2-Methylisoborneol (MIB) and Geosmin Removal by Powdered Activated Carbon for Spartanburg Regional Joint Water System – Spartanburg, SC. Industry sponsor (2016) – (\$22,000). Completed.
33. P. Dahlen, **O. Apul**, Y. Guo. Microwave-Enabled Thermal Remediation of Organic Chemical Contaminated Soils using Dielectric Nanomaterials as Additives. School of Sustainable Engineering and the Built Environment at Arizona State University (2016) – (\$5,000). Completed.
34. P. Westerhoff, **O. Apul**, S. Sinha. Removal of Perfluorinated Compounds (PFC) by Carbonaceous Nano-Adsorbents Coupled with Pre-Filtration Membranes. Industry sponsor (2016) – (\$15,000). Completed.

35. **O. Apul** (Coordinator & Founder), Biomimicry Initiative for Graduate Students at ASU. Biomimicry Center at Arizona State University (2016). Completed.
36. P. Westerhoff, **O. Apul**. Evaluation of oxidant/surfactant/solvent cocktails for washing soils containing heavy hydrocarbons. Industry Sponsor (2016) – (\$70,000). Completed.
37. **O. Apul**, N. Fischer, P. Westerhoff (PI). In-Situ Remediation of Spent Granular Activated Carbon using Iron Oxide Nanoparticles and Hydrogen Peroxide, Industry sponsor (2016) - (\$10,000). Completed.

## PUBLICATIONS

---

List of Publications (underlined names indicate students/post-docs directly advised by Dr. Apul, \* indicates corresponding author)

### University of Maine

61. Barrios, A., **Apul, O.G.**, Perreault, F. (**submitted**). Increasing bromide removal by graphene-silver composites: nanoparticulate silver enhances bromide selectivity through direct surface interactions. *Environmental Science and Technology*.
60. Hatinoglu, D., Perreault, F., **Apul, O.G.\*** (**accepted with revisions**). Modified Linear Solvation Energy Relationships for Adsorption of Perfluorocarboxylic Acids by Microplastics. *Science of the Total Environment*.
59. Collins, A., Ateia, M., Bhagat, K., Ohno, T., Perreault, F., **Apul, O.G.\*** (**accepted with revisions**). Emerging Investigator Series: Microplastic-based Leachate Formation under UV Irradiation: The Extent, Characteristics and Mechanisms. *Environmental Science: Water Research and Technology*.
58. McAlexander, B., **Apul, O.G.**, MacRae, J., Olson, M. (**in press**). Greenhouse Gas Emissions Estimates for Activated Carbon Treatment of PFAS in Maine Drinking Water. *Maine Policy Review*.
57. Egitto, J., Latayan, J., Pagsuyoin, S., **Apul, O.G.\***, Agar, E. **2022**. Towards Selective Removal of Bromide from Drinking Water Resources using Electrochemical Desalination. *Chemical Engineering Journal Advances*. 12: 100369.
56. Costigan, E., Collins, A., Hatinoglu, M.D., Bhagat, K., MacRae, J., Perreault, F., **Apul, O.G.\*** **2022**. Adsorption of Organic Pollutants by Microplastics: Overview of A Dissonant Literature. *Journal of Hazardous Materials Advances*. 6: 100091.
55. **Apul, O.G.**, Arrowsmith, S., Hall, C., Miranda, E., Alam, F., Dahlen, P., Sra, K., Kamath, R., McMillen, S., Sihota, N., Westerhoff, P., Krajmalnik-Brown, R., Delgado, A. **2022**. Biodegradation of petroleum hydrocarbons in a weathered, unsaturated soil is inhibited by peroxide oxidants. *Journal of Hazardous Materials*. 433: 128770.
54. Yaparathne, S., Doherty, Z., Matula, E., Macrae, J., Garcia-Segura, S., **Apul, O.G.\*** **2022**. Effect of air nanobubbles on oxygen transfer, oxygen uptake and, diversity of aerobic microbial consortium in activated sludge reactors. *Bioresource Technology*. 351: 127090.
53. Bhagat, K., Barrios, A., Rajwade, K., Kumar, A., Oswald, J., **Apul, O.G.**, Perreault, F. **2022**. Aging of microplastics increases their adsorption affinity towards organic contaminants. *Chemosphere*. 298: 134238.
52. Shahrokhinia, A., Rijal, S., Sonmez Baghirzade, B., Scanga, R., Biswas, P., Tafazoli, S., **Apul, O.G.**, Reuther, J. **2022**. Chain extensions in photoATRP-induced self-assembly (photoATRP-pisa): A route to ultra-high solids concentrations and click nanoparticle networks as adsorbents for water treatment. *Macromolecules* (cover article). 55: 3699-3710.
51. Yildirim, T., Yaparathne, S., Graf, J., Garcia-Segura, S., **Apul, O.G.\*** Electrostatic forces and higher order curvature terms of Young-Laplace equation for stability of nanobubbles in water *npj Clean Water*. 5: 1-3.
50. Areeb, H., Sonmez-Baghirzade, B., **Apul, O.G.**, Kirisits, M.J., Dev, S., Das, S., Islam, S., Lai, Y., Huntington, H., Umanzor, S., Wan-Ting, C., Aggarwal, S., Saleh, N. **2022**. A symbiotic engineering approach for microplastic remediation in mariculture systems. *ACS ES&T Engineering*. 2: 606-616.
49. Hoogesteijn von Reitzenstein, N., Sonmez Baghirzade, B., Pruitt, E., Hristovski, K., Westerhoff, P., **Apul, O.G.\***, **2022**. Comparing the morphologies and adsorption behavior of electrospun polystyrene composite fibers with 0D fullerenes, 1D multiwalled carbon nanotubes and 2D graphene oxides. *Chemical Engineering Journal Advances*. 9: 100199.
48. Cerron-Calle, G., Magdaleno, A., Graf, J., **Apul, O.G.**, Garcia-Segura, S. **2022**. Elucidating CO<sub>2</sub> nanobubble interfacial reactivity and impacts on water chemistry. *Journal of Colloid and Interface Science*. 607: 720-728.
47. Tang, Y., Lee, C.S., Walker, H., Gobler C., **Apul, O.G.**, Venkatesan, A., Mai, X. **2021**. Effect of residual H<sub>2</sub>O<sub>2</sub> on the removal of advanced oxidation byproducts by two types of granular activated carbon. *Journal of Environmental Chemical Engineering*. 9: 106838.

46. Bakkaloglu, S., Ersan, M., Karanfil, T., **Apul, O.G.\* 2021**. Effect of superfine pulverization of powdered activated carbon on adsorption of carbamazepine in natural source waters. *Science of the Total Environment*. 793: 148473.
45. Lafaille, R., Bozkurt, Y., Pruitt, E., Lewis, J., Bernier, R., Kong, D., Westerhoff, P., Dahlen, P., **Apul, O.G.\* 2021**. Repeatable use assessment of silicon carbide as permanent susceptor bed in ex situ microwave remediation of petroleum-impacted soils. *Case Studies in Chemical and Environmental Engineering*. 4: 100116.
44. **Apul, O.G.\***, Grissom, R., Damali, U., Toof, R. **2021**. Response to the Comment "Closing America's racial gap around drinking water quality perceptions and the role of the environmental engineering and science academic community". *Environment Science and Technology Water*. 1:461.
43. **Sonmez, B.**, Zhang, Y., Reuther, J., Saleh, N. B., Venkatesan, A., **Apul, O.G.\* 2021**. Thermal regeneration of spent granular activated carbon presents an opportunity to break the forever PFAS cycle. *Environmental Science and Technology*. 55: 5608-5619.
42. Sabo-Attwood, T., **Apul, O.G.**, Bisesi Jr., J.H., Kane, A.S., Saleh, N., **2021**. Nano-scale applications in aquaculture: Opportunities for improved production and disease control. *Journal of Fish Disease*. 44: 359-370.
41. **Bozkurt, Y., Lafaille, R.**, Lu, D., Zhang, X., Giles, R., **Apul, O.G.\* 2021**. Effects of carbonaceous susceptors during microwave pretreatment of waste activated sludge and subsequent anaerobic digestion. *Bioresource Technology Reports* 13: 100641.
40. **Apul, O.G.\***, Grissom, R., Damali, U., Toof, R. **2021**. Divided perception of drinking water safety: another manifestation of America's racial gap. *Environment Science and Technology Water* 2: 6-7.
39. **Apul, O.G.\***, Perreault, F., Ersan, G., Karanfil, T. **2020**. Predictive model development for adsorption of synthetic organic compounds by carbon nanomaterials: an overview of the last decade from ground up. *Environment Science: Water Research and Technology*. 6: 2949-2957.
38. Ramirez-Sanchez, I., **Apul, O.G.**, Saleh, N. **2020**. Microplastic particle versus fiber generation during photo-transformation in simulated seawater. *Royal Society of Chemistry Advances*. 10: 39931-39942.

#### University of Massachusetts Lowell

37. Naik, R., Rowles, L., Hossain, A., Yen, M., Aldossary, R., **Apul, O.G.**, Conkle, J., Saleh, N. **2020**. Microplastic particle versus fiber generation during photo-transformation in simulated seawater. *Science of the Total Environment*. 736: 139690.
36. Partlan, E., Ren, Y., **Apul, O.G.**, Ladner, D., Karanfil, T. **2020**. Adsorption kinetics of synthetic organic contaminants onto superfine powdered activated carbon. *Chemosphere*. 253: 126628.
35. **Apul, O.G.**, **Khalid, A.**, Rowles, L.S., Karanfil, T., Richardson, S., Saleh, N. **2020**. Transformation potential of 11-Nor-9-Carboxy- $\Delta$ 9-tetrahydrocannabinol during its passage through engineered water treatment systems: A perspective. *Environment International*. 137: 105586.
34. **Khalid, A.**, Rowles, L.S., Ateia, M., Xiao, M., Moses, I., Bello, D., Karanfil, T., Saleh, N., **Apul, O.G.\* 2020**. Mesoporous activated carbon shows superior adsorption affinity for 11-nor-9-carboxy- $\Delta$ 9-tetrahydrocannabinol in water. *Clean Water (Nature Partner Journal)*. 3: 1-5.
33. **Bozkurt, Y.**, **Apul, O.G.\* 2020**. Critical review for microwave pretreatment of waste activated sludge prior to anaerobic digestion. *Current Opinion in Environmental Science and Health*. 14: 1-9.
32. Saleh, N., **Khalid, A.**, Tian, Y. Ayres, C., Sabaraya, I., Pietari, J., Hanigan, D., Chowdhury, I., **Apul, O.G.\* 2019**. Degradation and removal of poly- and per-fluoroalkyl substances from aqueous systems by nano-enabled water treatment technologies. *Environmental Science: Water Research and Technology*. 5: 198-208.
31. Saleh, N., **Apul, O.G.\***, Karanfil, T. **2019**. The genesis of a critical environmental concern: Cannabinoids in our water systems. *Environmental Science and Technology*. 53: 1746-1747 (Scientific Opinion).
30. Lu, D., Liu, X., **Apul, O.G.**, Zhang, L., Ryan, D., Zhang, X. **2019**. Optimization of biomethane production from anaerobic Co-digestion of microalgae and septic tank sludge. *Biomass and Bioenergy*. 127: 105266.

29. Atkinson, A., **Apul, O.G.**, Schneider, O., Garcia-Segura, S., Westerhoff, P. **2019**. Nanobubble technologies offer opportunities to improve water treatment. *Accounts of Chemical Research*. 52: 1196-1205.
28. Ersan, G., Kaya, Y., Ersan, M., **Apul, O.G.**, Karanfil, T. **2019**. Adsorption kinetics and aggregation for three classes of carbonaceous adsorbents in the presence of natural organic matter. *Chemosphere*. 229: 515-524.
27. Ersan, G., **Apul, O.G.**, Karanfil, T. **2019**. Predictive models for adsorption of organic compounds by graphene nanosheets. *Science of the Total Environment*. 5: 198-208.
26. Kidd, J., Barrios, A., **Apul, O.G.**, Westerhoff, P. Perreault, F. **2018**. Removal of bromide from surface water: A comparison between silver-impregnated graphene oxide and silver-impregnated powdered activated carbon. *Environmental Engineering Science*, 35: 988-995.
25. Gan, W., Venkatesan, A., **Apul, O.G.**, Perreault, F., Yang, X., Westerhoff, P. **2018**. Bromide removal from drinking waters by silver amended coagulation. *Journal of American Water Works Association*, 110: 13-24.
24. Ersan G., **Apul, O.G.**, Perreault, F., Karanfil, T. **2017**. Adsorption of organic compounds by graphene nanosheets and comparison with carbon nanotubes: A review. *Water Research*, 126: 385-398.
23. Linard, E., **Apul, O.G.**, Karanfil, T., van der Hurk, P., Klaine, S. **2017**. Bioavailability of carbon nanomaterial-adsorbed polycyclic aromatic hydrocarbons to *P. promelas*: influences of adsorbate molecular size and configuration. *Environmental Science and Technology*, 51: 9288-9296.
22. Ateia, M., **Apul, O.G.**, Shimizu, Y., Muflihah, A., Yoshimura, C., Karanfil, T. **2017**. Elucidating adsorptive fractions of natural organic matter on carbon nanotubes. *Environmental Science and Technology*, 51:7101-7110.

#### Arizona State University

21. **Apul, O.G.\***, Hoogesteijn von Reitzenstein, N., Schoepf, J., Ladner, D. Hristovski, K., Westerhoff, P. **2017**. Superfine powdered activated carbon incorporated into electrospun polystyrene fibers preserve adsorption capacity. *Science of the Total Environment*, 592:458-464.
20. Garcia, J., Markovski, J., Gifford, J.M.K., **Apul, O.G.**, Hristovski, K.D. **2017**. The effect of metal (hydro)oxide nano-enabling on intraparticle mass transport of organic contaminants in hybrid granular activated carbon. *Science of the Total Environment*, 586: 1219-1227.
19. **Apul, O.G.\***, Delgado, A., Kidd, J., Alam, F., Dahlen P., Westerhoff, P. **2017**. Carbonaceous nano-additives augment microwave-enabled thermal remediation of soils containing petroleum hydrocarbons. *Environmental Science: Nano*, 3:997-1002.
18. **Apul, O.G.\***, Dahlen, P., Delgado, A., Sharif, F., Westerhoff, P. **2016**. Treatment of heavy, long-chain petroleum-hydrocarbon impacted soils using chemical oxidation, *Journal of Environmental Engineering-ASCE*, 040160065.
17. Ersan, G., Kaya, Y., **Apul, O.G.**, Karanfil, T. **2016**. Adsorption of organic contaminants by graphene nanosheets, carbon nanotubes and granular activated carbons under different natural organic matter preloading conditions, *Science of the Total Environment*, 565: 811-817.
16. Ersan, G., **Apul, O.G.**, Karanfil, T. **2016**. Linear solvation energy development for adsorption of organic contaminants by carbon nanotubes, *Water Research*, 98: 28-38.

#### Clemson University

15. Chen, C., **Apul, O.G.**, Karanfil, T. **2017**. Removal of bromide from surface waters using silver impregnated activated carbon. *Water Research*, 113: 223-230
14. Partlan, E., Davis, K., Ren, Y., **Apul, O.G.**, Mefford, T.M., Karanfil, T., Ladner, D. **2016**. Effect of bead milling on chemical and physical characteristics of activated carbons pulverized to superfine sizes. *Water Research*, 89: 161-170.



13. Zhou, Y., **Apul, O.G.**, Karanfil, T. **2015**. Adsorption of halogenated aliphatic contaminants by graphene nanomaterials. *Water Research*, 79: 57-67.
12. **Apul, O.G.**, Zhou, Y., Karanfil, T. **2015**. Mechanisms and modeling of halogenated aliphatic contaminant adsorption by carbon nanotubes. *Journal of Hazardous Materials*, 295: 138-144.
11. Linard, E., Van den Hurk, P., Karanfil, T., **Apul, O.G.**, Klaine, S. **2015**. Influence of carbon nanotubes on the bioavailability of fluoranthene. *Environmental Toxicology and Chemistry*, 34: 658-666.
10. Bliznyuk, V., Duval, C., **Apul, O.G.**, Seliman, A., Husson, S., DeVol, T. **2015**. High porosity scintillating polymer resins for ionizing radiation sensor applications. *Polymer*, 56: 271-279.
9. **Apul, O.G.**, Karanfil, T. **2015**. Adsorption of synthetic organic contaminants by carbon nanotubes: A critical review. *Water Research*, 68: 34-55.
8. Wang, Q.L., **Apul, O.G.**, Xuan, P., Luo, F., Karanfil, T. **2013**. Development of 3D QSPR model for adsorption of aromatic compounds by carbon nanotubes: Comparison among multiple linear regression, artificial neural network and support vector machine. *Royal Society of Chemistry Advances*, 3: 23924-23934.
7. Ellerie, J.R., **Apul, O.G.**, Karanfil, T., Ladner, D.A. **2013**. Comparing graphene, carbon nanotube, and superfine powdered activated carbon as adsorptive coating materials for ultrafiltration membranes. *Journal of Hazardous Materials*, 261: 91-98.
6. **Apul, O.G.**, Wang, Q., Shao, T., Rieck J., Karanfil, T. **2013**. Predictive model development for adsorption of aromatic contaminants by multi-walled carbon nanotubes. *Environmental Science and Technology*, 47(5): 2295-2303.
5. **Apul, O.G.**, Wang, Q., Zhou, Y., Karanfil, T. **2013**. Adsorption of aromatic organic contaminants by graphene nanosheets: Comparison with carbon nanotubes and activated carbon. *Water Research*, 47(4): 1648-1654.
4. **Apul, O.G.**, Shao, T., Zhang, S., Karanfil, T. **2012**. The impact of carbon nanotube morphology on phenanthrene adsorption. *Environmental Toxicology and Chemistry*, 31(1): 73-78.

#### **Middle East Technical University**

3. **Apul, O.G.** and Sanin, F.D. **2010**. Ultrasonic pretreatment and subsequent anaerobic digestion under different operational conditions. *Bioresource Technology*, 101(23): 8984-8992.
2. **Apul, O.G.**, Atalar, I., Zorba, G.T. and Sanin, F.D. **2010**. The dewaterability of disintegrated sludge samples before and after anaerobic digestion. *Drying Technology*, 28(7): 901-909.
1. **Apul, O.G.**, Dogan, I. and Sanin, F.D. **2009**. Can capillary suction time be an indicator for sludge disintegration? *Journal of Residual Science and Technology*, 6(3): 99-104.

## OTHER PUBLICATIONS AND PRESENTATIONS

---

#### **Thesis and Dissertation**

1. **Apul, O.G.** Predictive Model Development for Adsorption of Organic Contaminants by Carbon Nanotubes. Clemson University, August 2014, Ph.D. Dissertation, Clemson, SC.
2. **Apul, O.G.** Municipal Sludge Minimization: Evaluation of Ultrasonic and Acidic Pretreatment Methods and Their Subsequent Effects on Anaerobic Digestion. Middle East Technical University, February 2009, M.S. Thesis, Ankara, Turkey.

#### **Invited Keynote Presentation**

1. **Apul, O.G.** En Route to Pragmatic and Responsible Use of Carbon Nanomaterials for Drinking Water Treatment. November **2021**, Sustainable Nanotechnology Organization Conference Emerging Investigator Plenary Lecture, Virtual Event.

2. **Apul, O.G.** Adsorption of Organic Contaminant by Carbonaceous Adsorbents: Engineered and Natural Applications. December **2016**, Academy of Co-Creative Education of Environment and Energy Science Forum, San Diego, CA.

### Other Invited Presentations

3. **Apul, O.G.** Nanotechnology can Transform the Water Treatment Industry. Scheduled virtually: September **2022**, Georgia Institute of Technology Environmental Engineering Seminar Series, Atlanta, GA.
4. Kopec, D., **Apul, O.G.**, Peckenham, J., Noblet, C. The Forever Chemicals: PFAS in Maine, April **2022**, University of Maine, Senator George J. Mitchell Center for Sustainability Solutions Seminar Series, Orono, ME.
5. **Apul, O.G.** Adsorption of PFAS by Microplastics: One Water, Two Crises, March **2022**, Water Environment Federation, Public Health and Water Conference & Wastewater Disease Surveillance Summit - Status Update on PFAS Challenges and Opportunities: Looking Beyond Documented Occurrence Session.
6. **Apul, O.G.** An Overview of Nano-Scale Opportunities for Water Treatment Applications. March **2022**. University of Massachusetts Amherst, Department of Environmental Engineering Seminar Series.
7. **Apul, O.G.** Nanotechnology and Responsible Water Treatment. April **2021**. University of Florida, Department of Environmental & Global Health Seminar Series, Virtual Seminar.
8. **Apul, O.G.** Water Treatment: An Overview of Modern-day Challenges and Technological Opportunities. April **2021**. University of Maine, Department of Chemical and Biomedical Engineering Seminar Series, Virtual Seminar.
9. **Apul, O.G.** Sustainable Water Treatment – Moving from Victorian Era Technology to Nanotechnology, November **2020**, University of Maine, Senator George J. Mitchell Center for Sustainability Solutions Seminar Series, Orono, ME.
10. **Apul, O.G.** Sustainable Water Treatment and Remediation Session – Chair’s Talk, November **2020**, Sustainable Nanotechnology Organization, Virtual Conference.
11. **Apul, O.G.** Carbon Nanomaterials for Innovations in Drinking Water Treatment, February **2020**, University of Maine, Environmental Engineering Seminar Series, Orono, ME.
12. **Apul, O.G.** Sewage Sludge for Biogas Production, February **2020**, Massachusetts Institute of Technology, Massachusetts Cleantech Landscape, Boston, MA.
13. **Apul, O.G.** Predictive Model Development for Adsorption of Synthetic Organic Contaminants by Carbon Nanomaterials, April **2019**, McGill University, Environmental Engineering Seminar, Montreal, QB, Canada.
14. **Apul, O.G.** Carbon Nanomaterials for Innovations in Drinking Water Treatment, February **2019**, Stony Brook University, NYS Center for Clean Water Technology Seminar, Stony Brook, NY.
15. **Apul, O.G.** Carbon-based Nanomaterials for Innovations in Drinking Water Treatment, March **2018**, University of Florida, Environmental Engineering Seminar, Gainesville, FL.
16. **Apul, O.G.**, Pruitt, E., Dahlen, P., Westerhoff, P. Nanoparticle-Augmented Microwave Remediation of Soils, January **2018**, Chevron HHSRG Year-End Meeting, Houston, TX.
17. **Apul, O.G.**, Zeng, C., Delgado, A., Westerhoff, P., Dahlen, P. Krajalnik-Brown, R., Surfactant and Oxidant Enhanced Bioremediation, January **2018**, Chevron HHSRG Year-End Meeting, Houston, TX.
18. **Apul, O.G.**, Adsorption of synthetic organic compounds by carbon nanomaterials. Plastics Engineering Presentation at University of Massachusetts Lowell. December **2017**. Lowell, MA.
19. **Apul, O.G.** Adsorption of Organic Compounds by Carbon Nanomaterials: Exploring Intermolecular Interactions to Advance in Water Treatment Technologies. November **2017**, University of Massachusetts Amherst Environmental Engineering Seminar, Amherst, MA.

20. **Apul, O.G.**, Reid, T., Westerhoff, P. Experimental Investigation of 2-Methylisoborneol (MIB) and Geosmin Removal by Powdered Activated Carbon for Spartanburg Regional Joint Water System, September **2016**, ASU Regional Water Quality Workshop, Tempe, AZ.
21. **Apul, O.G.**, Predictive model development for adsorption of organic contaminants by carbon nanotubes. Environmental Engineering Seminar at Arizona State University, February **2015**, Tempe, AZ.
22. **Apul, O.G.** Turkey's Water Perspective, American Water Works Association Annual Conference, June **2012**, Dallas, TX.
23. **Apul, O.G.** Evaluation of Acidic and Ultrasonic Sludge Pretreatment Methods. Environmental Engineering Seminar at Middle East Technical University, April **2008**, Ankara, Turkey.

#### Oral and Poster Presentations (Presenting advisees are underlined)

24. Moavenzadeh, S., Kopec, D., Apul, O.G. The interaction of per- and polyfluoroalkyl substances (PFAS) with landfill geomembrane and impact of liner integrity on PFAS seepage. EREF Intercontinental Landfill Research Symposium, September 2022 (Oral Presentation).
25. Collins, A., Ateia, M., Bhagat, K., Ohno, T., Perreault, F., **Apul, O.G.** Microplastic leachate formation under UV irradiation: extent, characteristics, and mechanisms. AEESP Research and Education Conference, June 2022 (Poster Presentation).
26. Yaparathne, S., Doherty, Z.E., Magdaleno, A.L., Matula, E.E., MacRae, J.D., Garcia-Segura, S., **Apul, O.G.** Effect of air nanobubbles on oxygen transfer, oxygen uptake and diversity of aerobic microbial consortium in activated sludge reactors, AEESP Research and Education Conference, June 2022 (Oral Presentation).
27. Perreault, F., Bhagat, K., **Apul, O.G.**, Oswald, J. Weathering of microplastics in the environment affects their adsorption affinity for organic contaminants, AEESP Research and Education Conference, June 2022 (Oral Presentation).
28. Liggiero, J., Bailey, T., Hatinoglu, M.D., Ross, L., **Apul, O.G.** Identifying the Magnitude and Character of Microplastic Pollution in Frenchman Bay, Maine. UMaine Student Symposium, April 2022 (Poster Presentation).
29. Doherty, Z.E., Yaparathne, S., Bouchard, D., **Apul, O.G.** Taste and Odor Degradation in Water by Nanobubble-Facilitated Ultrasonication. UMaine Student Symposium, April 2022 (Poster Presentation).
30. Hatinoglu, M.D., **Apul, O.G.** Predictive Statistical Model Development for Adsorption of Forever Chemicals (PFAS) by Microplastics. 2022 Maine Sustainability & Water Conference, March 2022 (Poster Presentation).
31. Moavenzadeh-Ghaznavi, S., **Apul, O.G.** Partitioning of Per- and Polyfluoroalkyl Substances (PFAS) onto Landfill Geomembrane Liners: Are Landfills their Final Destination? 2022 Maine Sustainability & Water Conference, March 2022 (Poster Presentation).
32. Sonmez Baghirzade, B., Biswas, P., Reuther, J., **Apul, O.G.** Adsorption Capacity Enhanced by Tuning Carbon Size of Superfine Powdered Activated Carbon Electrospun Fiber. 2021 Sustainable Nanotechnology Organization Conference, November 2021 (Oral Presentation).
33. Bhagat, K., **Apul, O.G.**, Perreault, F. Aging of microplastics increases its sorption affinity towards organic contaminants. 259th American Chemical Society National Conference, August 2021 (Oral Presentation).
34. Collins, A., Adams, A., Ateia, M., Perreault, F., **Apul, O.G.** Determination of organic matter leaching from microplastics during ultraviolet weathering. 95<sup>th</sup> ACS Colloid and Surface Science Symposium (Virtual), June 2021 (Poster Presentation).
35. Collins, A., Costigan, E., Bhagat, K., Oswald, J., Perreault, F. **Apul, O.G.** Adsorption of synthetic organic compounds by microplastics: A cacophonous literature. Maine Sustainability & Water Symposium (Virtual), March 2021 (Poster Presentation).

36. Kopec, D., **Apul, O.G.**, MacRae, J., Noblet, C., Peckenham, J. PFAS? Yes, PFAS – A Serious Problem in Need of a Sustainable Solution. Maine Sustainability & Water Symposium (Virtual), March 2021 (Oral Presentation).
37. **Apul, O.G.**, Sonmez, B.B., Zhang, Y., Reuther, J., Saleh, N. B., Venkatesan, A. Thermal Regeneration of Spent Granular Activated Carbon Presents an Opportunity to Break the Forever PFAS Cycle Maine Sustainability & Water Symposium (Virtual), March 2021 (Oral Presentation).
38. Sonmez, B., Zhang, Y., Reuther, J., Saleh, N. B., Venkatesan, A., **Apul, O.G.** Regeneration of Spent Granular Activated Carbon Presents an Opportunity to Break the Forever PFAS Cycle. SERDP & ESTCP (Virtual) Symposium, December 2020 (Poster Presentation).
39. Reuther, J., **Apul, O.G.**, Shahrokhinia, A., Sonmez, B. Dynamic nanosphere networks: A novel platform for regenerable adsorbents for point-of-use water treatment systems. American Chemical Society National Meeting, August **2020**, Virtual Conference (Oral Presentation).
40. Sonmez, B., Wei, J., Wong, H.W., **Apul, O.G.** Breaking the Cycle of Forever Chemicals, Per- And Polyfluorinated Alkyl Substances (PFAS) in Water Treatment Systems. UMass Lowell Student Research & Community Engagement Symposium, April **2020**, Lowell, MA (Poster Presentation).
41. Bozkurt, Y., Lu, D., Zhang, X., Giles, R., **Apul, O.G.** Nano-enabled Pretreatment of Waste Activated Sludge prior to Anaerobic Digestion. Sustainable Nanotechnology Organization Conference, November **2019**, San Diego, CA (Oral Presentation).
42. Ashani, H., **Apul, O.G.** Removal of Perfluorinated Chemicals from an Arizona Groundwater Well by Various Adsorbents. American Water Works Association California-Nevada Section Annual Fall Conference, October **2019**, San Diego, CA (Oral Presentation).
43. LaFaille, R., Pruitt, E., Lewis, J., Bernier, R., Dahlen, P., **Apul, O.G.** Repeatable Use of Susceptors in Microwave Remediation of Petroleum Contaminated Soils. New England Graduate Student Water Symposium, September **2019**, Amherst, MA (Poster Presentation).
44. Rowles, S., **Apul, O.G.**, Karanfil, T., Saleh, N. Transformation and Removal Efficacy of Common Cannabinoids in Engineered Aquatic Systems. American Chemical Society National Meeting, Cannabis Chemistry Subdivision, August **2019**, San Diego, CA (Oral Presentation).
45. Bozkurt, Y., LaFaille, R., Zhang, X., Yu, T., Giles, R., **Apul, O.G.** Nano-Enabled Pretreatment of Waste Activated Sludge Prior to Anaerobic Digestion. Gordon Research Conference: Environmental Nanotechnology, June **2019**, Newry, ME (Poster Presentation).
46. LaFaille, R., Zhang, X., Giles, R., **Apul, O.G.** Nano-Enabled Microwave Pretreatment of Waste Activated Sludge. New England Graduate Student Water Symposium, September **2018**, Amherst, MA (Poster Presentation).
47. Egitto, J., Latayan, J., Pagsuyoin, S., **Apul, O.G.**, Agar, E. Selective Bromide Removal from Surface Waters using Capacitive Deionization. New England Graduate Student Water Symposium, September **2018**, Amherst, MA (Poster Presentation).
48. Barrios, A., Kidd, J., **Apul, O.G.**, Westerhoff, P., Perreault, F. Comparison of Graphene Oxide Impregnated with Ionic or Nano Silver for Bromide Removal from Surface Waters. American Chemical Society 256<sup>th</sup> National Meeting and Exhibition, August **2018**, Boston, MA (Oral Presentation).
49. Atkinson, A., **Apul, O.G.**, Schneider, O., Garcia-Segura, S., Westerhoff P. Implementation of Nanobubble Based Technologies in Water Treatment. 256<sup>th</sup> American Chemical National Meeting and Exhibition. August **2018**, Boston, MA (Oral Presentation)
50. Khalid, A., Pagsuyoin, S., Bello, D., Karanfil, T., **Apul, O.G.** Adsorption of  $\Delta^9$ -tetrahydrocannabinol by Carbon-Based Nano Adsorbents. 256<sup>th</sup> American Chemical Society National Meeting and Exhibition. August **2018**, Boston, MA (Oral Presentation)
51. Ashani, H., Khalid, A., **Apul, O.G.**, Sinha, S., Westerhoff, P. Removal of Perfluorinated Chemicals (PFCs) from Arizona Groundwater by Carbonaceous Nanomaterials. Arizona Water 91<sup>st</sup> Annual Conference. May **2018**. Phoenix, AZ (Oral Presentation).

52. Khalid, A., Tian, Y., Ayres, C., Sabaraya, I.V., Pietari, J., Chowdhury, I., Saleh, N.B., **Apul, O.G.** Removal of Poly- and Per-fluoroalkyl Substances (PFAS) from Natural Waters. Cabot Corporation, Student Material Research Symposium. May **2018**. Billerica, MA (Poster Presentation).
53. Dooley, K., Belanger, N., Gannon, O., Giles, R., Barrington, L., **Apul, O.G.** Sanitation Solutions for Housing Units of an Orphanage in Les Cayes, Haiti. University of Massachusetts Lowell, Student Symposium. May **2018**. Lowell, MA (Poster Presentation).
54. Khalid, A., Rowles, L.S., **Apul, O.G.**, Saleh, N. Readily Deployable Electrospun Polymer/Nanocomposite Cartridge for Lead Removal from Drinking Water Distribution Pipelines. University of Massachusetts Lowell, Francis College of Engineering Prototyping Competition. December **2017**. Lowell, MA (Poster Presentation/Best Poster Acc. to Crowd Voting).
55. Pruitt, E, **Apul, O.G.**, Dahlen, P., Westerhoff, P., Kamath, R., Kong, K. Nano-augmented microwave irradiation of soils containing heavy and long-chain petroleum-hydrocarbons. Pan American Congress of Nanotechnology Fundamentals and Applications to Shape the Future. November **2017**. Guarujá, SP, Brazil (Poster Presentation).
56. **Apul, O.G.**, Innovations in Drinking Water Treatment Technologies: Nanoscale Solutions to Macroscale Problems. 2017-2018 Faculty Symposium at University of Massachusetts Lowell. November **2017**. Lowell, MA (90-Second Flash Oral Presentation).
57. **Apul, O.G.**, Innovations in Drinking Water Treatment Technologies. Industry Advisory Board Meeting, September **2017**. Lowell, MA (Short Introductory Oral Presentation).
58. **Apul, O.G.**, Delgado, A., Miranda, E., Krajmalnik-Brown, R., Westerhoff, P., Sihota, N, Kamath, R., Sra, K., McMillen, S. Enhancing the biodegradation of heavy-hydrocarbons in soil. Chevron Mid-Year Meeting, August **2017**, Project Meeting, Houston, TX (Oral Presentation).
59. Pruitt, E., **Apul, O.G.**, Dahlen, P., Westerhoff, P., Kamath, R., Kong, K. Additive augmented, ex-situ microwave treatment for remediation of soils containing heavy hydrocarbons. Chevron Mid-Year Meeting, August **2017**, Project Meeting, Houston, TX (Oral Presentation).
60. Kidd, J., Barrios, A., **Apul, O.G.**, Perreault, F., Westerhoff, P. Silver impregnated graphene oxide removes bromide from surface waters. Gordon Research Conference (GRC) on Environmental Nanotechnology. June **2017**. Stowe, VT (Poster Presentation & Oral Presentation in Gordon Research Seminar Series).
61. Barrios, A.C., Kidd, J., **Apul, O.G.**, Westerhoff, P., and Perreault, F. Silver impregnated graphene oxide for bromide removal from surface water: ionic silver versus nano-silver. Gordon Research Conference (GRC) on Environmental Nanotechnology. June **2017**. Stowe, VT (Poster Presentation).
62. Linard, E., **Apul, O.G.**, Karanfil, T., van den Hurk, P., Klaine, S. Application of a bioavailability index to assess fish exposure to carbon nanomaterial-adsorbed PAHs. Gordon Research Conference (GRC) on Environmental Nanotechnology. June **2017**. Stowe, VT (Poster Presentation).
63. Delgado, A.G., **Apul, O.G.**, Chen, T., Yavuz, B.M., Rittmann, B.E., Westerhoff, P., Krajmalnik-Brown, R. Lifting the weight off crude oils: Potentials and limitations of combined chemical oxidation and biodegradation. Association of Environmental Engineering and Science Professors (AEESP) Research and Education Conference, June **2017**, Ann Arbor, MI (Poster Presentation).
64. Barrios, A.C., Kidd, J., **Apul, O.G.**, Westerhoff, P., and Perreault, F. Silver impregnated graphene oxide for bromide removal from surface water: ionic silver versus nano-silver. May **2017**. Phoenix, AZ, Arizona Water 90th Annual Conference. Phoenix, AZ (Oral Presentation).
65. Barrios, A.C., Kidd, J., **Apul, O.G.**, Westerhoff, P., and Perreault, F. Silver impregnated graphene oxide for bromide removal from surface water: ionic silver versus nano-silver. May **2017**. Houston, TX, NEWT 2nd Annual Site Visit. Houston, TX (Poster Presentation).
66. **Apul, O.G.**, Nano-Environment Interconnections: Applications and Implications of Nano in Natural and Built Environments. October **2016**, Translating Graduate Nano-Experience to an Academic Career: Integrating Social Aspects in Engineering Education through Active Learning Workshop. Austin TX (Flash Oral Presentation).

67. **Apul, O.G.**, von Reitzenstein, N.H., Ladner, D., Hristovski, K., Westerhoff, P. Development of Novel Non-Woven Fabrics by co-Spinning of Superfine Powdered Activated Carbon and Polystyrene. American Chemical Society (ACS) National Meeting and Exhibition, August **2016**, Philadelphia, PA (Oral Presentation).
68. **Apul, O.G.**, Alam, F., Mouti, A., Arrowsmith, S., Dahlen, P., Delgado, P., Westerhoff, P., Krajmalnik-Brown, R., Kamath, R. and McMillen, S. Enhancing the Biodegradation of Heavy Hydrocarbons in Soil. Chevron Mid-Year Meeting, August **2016**, Project Meeting at Rice University, Houston, TX.
69. von Reitzenstein, N.H., **Apul, O.G.**, Hristovski, K., Westerhoff, P. Engineering Polymer-Supported Nanomaterial Networks for Water Treatment via Electrospinning. AZ Water 89<sup>th</sup> Annual Conference, May **2016**, Tempe, AZ (Oral Presentation).
70. **Apul, O.G.**, Westerhoff, P. and Sihota, N. Heavy Hydrocarbon Soil Remediation Group: Summary of Results for Surf-Ox Team. Chevron End-of-Year Meeting, November **2015**, Project Meeting at Arizona State University, Tempe, AZ.
71. **Apul, O.G.**, Westerhoff, P., Sihota, N. and Zuo, Y. Evaluation of oxidant/surfactant/solvent cocktails for washing soils containing heavy hydrocarbons. Excavation and off-site management. Chevron Mid-Year Technology Deployment Meeting, May **2015**, Miami, FL.
72. Fischer, N., **Apul, O.G.**, Hristovski, Westerhoff, P. and Nowack, K. In situ regeneration of granular activated carbon saturated with natural organic matter and micropollutants. American Water Works Association (AWWA) Water Quality Technology Conference (WQTC), November **2015**, Salt Lake City, UT (Poster Presentation).
73. Kidd, J.M., **Apul, O.G.**, Hanigan, D., Hristovski, K. Reed, R., Herckes, P. and Westerhoff, P. Comparison of the material properties of eight unique nanoparticles using nano-metrological functional assays. Fourth Annual Conference, Sustainable Nanotechnology Organization, November **2015**, Portland, OR (Poster Presentation).
74. Partlan, E., Davis, K., Ren, Y., **Apul, O.G.**, Mefford, O.T., Karanfil, T. and Ladner, D.A. Effects of Bead Milling on Activated Carbon Characteristics: Trends in Superfine PAC. American Water Works Association (AWWA) Water Quality Technology Conference (WQTC), November **2015**, Salt Lake City, UT (Oral Presentation).
75. Delgado, A.G., Kamath, R., **Apul, O.G.**, Chen, T., Rittmann, B., Westerhoff, B. and Krajmalnik-Brown, R. Chemical oxidants application for remediation of petroleum hydrocarbons. LAPI-ITB Workshop, August **2015**, Bandung, West Java, Indonesia (Oral Presentation).
76. Delgado, A.G., Kamath, R., **Apul, O.G.**, Westerhoff, B. and Krajmalnik-Brown, R. Surfactant-enhanced remediation of petroleum hydrocarbons. LAPI-ITB Workshop, August **2015**, Bandung, West Java, Indonesia (Oral Presentation).
77. Westerhoff, P., **Apul, O.G.** and Sihota, N. Evaluation of oxidant/surfactant/solvent cocktails for washing soils containing heavy hydrocarbons. Chevron Annual Meeting, January **2015**, San Ramon, CA (Oral Presentation).
78. Partlan E., Ren, Y., **Apul, O.G.**, Karanfil, T., and Ladner, D.A. Variations of superfine activated carbon produced by bead milling for trace organic contaminant adsorption, American Water Works Association (AWWA) Water Quality Technology Conference (WQTC), November **2014**, New Orleans, LA (Poster presentation).
79. **Apul, O.G.**, Zhou, Y. and Karanfil, T. Adsorption of halogenated aliphatic contaminants by graphene nanosheets. American Chemical Society (ACS) National Meeting and Exhibition, August **2014**, San Francisco, CA (Oral Presentation).
80. **Apul, O.G.** and Karanfil, T. Adsorption of synthetic organic contaminants by carbonaceous nanomaterials. Association of Environmental Engineering and Science Professors (AEESP) 50th Anniversary Conference, July **2013**, Golden, CO (Poster Presentation).
81. **Apul, O.G.** and Karanfil, T. Evaluation of carbonaceous nanoadsorbents for adsorption of synthetic organic contaminants. Gordon Research Conference: Environmental Nanotechnology, June **2013**, Stowe, VT (Poster Presentation).
82. **Apul, O.G.** and Karanfil, T. Evaluation of alternative carbon adsorbents for water treatment: A comparison of activated carbon, carbon nanotubes and graphene nanosheets. 23rd Annual South Carolina Environmental Conference, March **2013**, Myrtle Beach, SC (Poster Presentation).

83. **Apul, O.G.** and Karanfil, T. Quantitative structure-adsorbability relationships for the adsorption of organic chemicals by carbon nanotubes. NSF Nanoscale Science and Engineering Grantees Conference, December **2012**. Arlington, VA (Poster Presentation).
84. **Apul, O.G.** and Karanfil, T. Predictive model development for adsorption of synthetic organic contaminants by carbon nanotubes. American Water Works Association Annual Conference, June **2012**, Dallas, TX (Oral Presentation).
85. **Apul, O.G.**, Rieck, J.R. and Karanfil, T. QSAR & LSER model development for adsorption of organic contaminants by carbon nanotubes. 243<sup>rd</sup> Annual American Chemical Society Meeting & Expo, March **2012**, San Diego, CA (Poster Presentation).
86. Wang, Q., **Apul, O.G.**, Xuan, P., Luo, F., Rieck, J.R. and Karanfil, T. Statistical analysis in 3D QSPR model development for organic compounds adsorption onto CNTs. 243<sup>rd</sup> Annual American Chemical Society Meeting & Expo, March **2012**, San Diego, CA (Poster Presentation).
87. **Apul, O.G.**, Rieck, J.R. and Karanfil T. A predictive model development for adsorption of organic contaminants by carbon nanotubes. Symposium/Workshop: Carbons for Energy Applications, March **2012**, Stone Mountain, GA (Poster Presentation).
88. **Apul, O.G.**, Rieck, J.R. and Karanfil T. Treating drinking water with carbon nanotubes: comparison of two modeling approaches. 22<sup>nd</sup> Annual South Carolina Environmental Conference, March **2012**, Myrtle Beach, SC (Poster Presentation).
89. **Apul, O.G.**, Rieck, J.R. and Karanfil T. Adsorption of organic contaminants by carbon nanotubes. 21<sup>st</sup> Annual South Carolina Environmental Conference, March **2011**, Myrtle Beach, SC (Poster Presentation).
90. Zorba G.T., Atalar I., **Apul O.G.** and Sanin F. D. Enhancement of sludge reduction and methane production rates using different pretreatment methods applied prior to small scale laboratory anaerobic digesters. WEF Conference Residuals and Biosolids. May **2010**, Savannah, GA (Poster Presentation).
91. **Apul O.G.** and Sanin F.D. Examination of sludge minimization potential and associated costs by ultrasonic pretreatment. 8<sup>th</sup> National Environmental Engineering Congress. November **2009**, Antalya, Turkey (Oral Presentation).
92. **Apul O. G.**, Dogan I. and Sanin F. D. Can capillary suction time be an indicator for sludge disintegration? IWA Specialist Conference Sustainable Management of Water and Wastewater Sludges. August **2009**, Harbin, China (Oral Presentation).
93. **Apul, O.G.** and Sanin, F.D. Minimization of sludge by ultrasonic pretreatment. 6<sup>th</sup> Symposium of Environmental Pollution Priorities in Turkey. May **2009**, Gebze, Turkey (Oral Presentation).
94. Koksoy G.T., Dogan I., **Apul O.G.** and Sanin F. D. Effect of digester F/M ratio on gas production of ultrasonically treated sludge. International Water Association (IWA) World Water Congress and Exhibition. September **2008**, Vienna, Austria (Oral Presentation).
95. **Apul O.G.**, Doğan I., Köksoy G.T. and Sanin F.D. Effects of chemical and thermo-chemical pretreatment methods of sludge on anaerobic digestion. 7<sup>th</sup> National Environmental Engineering Congress. October **2007**, Izmir, Turkey (Oral Presentation).

## TEACHING AND MENTORSHIP EXPERIENCE

---

### **University of Maine, Orono, ME**

- Advisor, M.S. students (Mr. Ashton Collings '22, Ms. Grace Johnson, Zach Doherty)
- Advisor, Ph.D. student (Ms. Sonia Moavenzadeh, Ms. Dilara Hatinoglu, Mr. Ashton Collins, Mr. Kenneth Mensah)
- Advisor, Postdoc (Dr. Sudheera Yaparathne, Dr. Seif Salem, Dr. Manisha Choudhary)
- Advisor, High School Student (Ms. Samantha Ismail)
- Advisor, Undergraduate researcher (Ms. Jess Liggerio '22, Mr. Zach Doherty '22, Mr. Louis Nicoloro '22)
- PhD committee member, (Ms. Meryem Soyluoglu @ Clemson University, Ms. Eliza Costigan @ UMaine, Ms. Taylor Bailey @UMaine, Ms. Lisa White @ UMaine)
- Primary Lecturer of Undergraduate Level Course, CIE 430 – Water Treatment.
- Primary Lecturer of Graduate Level Course CIE 598 – Environmental Nanotechnology.

### **University of Massachusetts Lowell, Lowell, MA**

- Advisor, M.S. students (Mr. Yigit Bozkurt '20, Mr. Ritchie Lafaille '20, Mr. Arsalan Khalid '19)
- Advisor, Undergraduate researchers (Ms. Jana Latayan '20, Mr. Miles Cramer '20, Mr. Joseph Egitto '20, Ms. Sara Vargas '20, Ms. Philie Ngaippe '20, Mr. Tyler L'Bassi '20).
- Advisor, High School Student (Mr. Matt Tengtrakool '20)
- Committee member, (Ms. Akarapan Rojjanapinun, Mr. Dingnan Liu, Ms. Mahnaz Seyednourani).
- Primary Lecturer of Graduate Level Course, CIVE 5660 – Environmental Applications and Implications of Nanomaterials, Spring 2018, Spring 2020.
- Primary Lecturer of Undergraduate Level Course, CIVE 4850 – Senior Year Capstone Design for Environmental Engineers, Spring 2018.
- Primary Lecturer of Undergraduate Level Course, CIVE 3010 – Fluid Mechanics, Fall 2018, Spring 2019.
- Primary Lecturer of Graduate Level Course, CIVE 5610 – Physicochemical Processes in Water Treatment, Fall 2019.
- Coordinator, CIVE 5050 – Graduate Research Seminar Series.

### **Arizona State University, Tempe, AZ**

- Guest Lecturer, Physical-Chemical Treatment of Water and Wastewater, Fall 2015.
- Coordinator, Sponsored Lecture Series, Biomimicry Initiative for Graduate Students at Biomimicry Center at Arizona State University.

### **Clemson University, Clemson, SC**

- Guest Lecturer, Water and Wastewater Treatment Systems, Spring 2014.
- Teaching Assistant & Lecturer, Environmental Organic Chemistry, Spring 2014.
- Teaching Assistant & Lecturer, Chemistry of Aqueous Systems, Spring 2014.
- Guest Lecturer, Physicochemical Operations in Water and Wastewater Treatment Systems, Spring 2013.
- Mentor, graduate students, Mr. Yang Zhou, Mr. Chen Chen, Ms. Gamze Ersan, Ms. Yiran Ren, Ms. Erica Linard.

### **Middle East Technical University, Ankara, Turkey**

- Teaching Assistant & Lecturer, Environmental Engineering Capstone Design-I, Fall 2008 & 2009.
- Teaching Assistant & Lecturer, Environmental Engineering Capstone Design-II, Spring 2008 & 2009.
- Teaching Assistant & Lecturer, Water Supply Engineering (with lab), Spring 2007.



## AWARDS AND HONORS

---

1. Susan J. Hunter Presidential Research Impact Award, (Advisee Mr. Zach Doherty), **2022**
2. Mitchell Center Sustainability and Water Conference, Student Poster (Advisee Ms. Dilara Hatinoglu), Honorable Mention, **2022**
3. Sustainable Nanotechnology Organization Emerging Investigator Award, **2021**
4. Israel F2F Faculty Fellow of Summer 2021, **2021**
5. American Society of Civil Engineers (ASCE) Student Chapter, Outstanding Teacher Award, **2019**
6. New England Graduate Student Water Symposium, Poster Presentation Competition 3<sup>rd</sup> Place, **2019** (Advisee Mr. Ritchie Lafaille)
7. Gordon Research Conference Environmental Nanotechnology, Travel Award Recipient, **2019**
8. University of Massachusetts Lowell, Recognition of Most Published Faculty Members in College of Engineering, **2018**
9. University of Massachusetts Lowell, Recognition by Chancellor for Highest Number of Peer-Reviewed Publications and Creative Works, **2017**
10. University of Massachusetts Lowell, Difference Maker Idea Challenge Winner, **2018** (Advisee Mr. Arsalan Khalid)
11. University of Massachusetts Lowell, Francis College of Engineering Prototype Competition Best Project Award Recipient, **2017** (Advisee Mr. Arsalan Khalid)
12. 1<sup>st</sup> Pan American Congress of Nanotechnology, International Travel Award Recipient, **2017**
13. Journal of Soils and Sediments, Outstanding Reviewer Recognition, **2016**
14. Elsevier, Highly Cited Paper Recognition in Water Research, **2015**
15. Clemson University Student Government, Professional Enrichment Grant Recipient, **2014**
16. The Water Environment Association of South Carolina, L.G. Rich Fellowship Recipient, **2013**
17. The 23<sup>rd</sup> Annual South Carolina Environmental Conference, Student Poster Award, 3<sup>rd</sup> place, **2013**
18. The Carbon for Energy Applications Symposium/Workshop, Elsevier Student Poster Award, **2012**
19. Clemson University Student Government, Professional Enrichment Grant Recipient, **2012**
20. Middle East Technical University, Senior Year Honor Roll, **2006**.
21. Middle East Technical University Senior Year Design Project, Best Project Award, 2<sup>nd</sup> place, **2006**

## PATENT APPLICATIONS

---

1. J. Reuther, **O.G. Apul**, **2019**. (Patent Disclosure Filed). Self-Healable, Regenerable Polymer Adsorbents for Low-Energy, Reusable Water Filters
2. **O.G. Apul**, P. Westerhoff, P. Dahlen, **2018**. (Fully filed US patent, no 10,590,020). Additive-amplified microwave pretreatment of wastewater sludge
3. F. Perrault, P. Westerhoff, **O.G. Apul**, S. Sinha, **2017**. (Fully filed US patent, no: 10,787,374). Silver-Impregnated Two-Dimensional Structures for Bromide Removal.
4. P. Westerhoff, S. Sinha, **O.G. Apul**, F. Perreault, **2017** (Provisionally filed US patent application, no:62/515,660). Halide Removal from Water using Silver Salts and Coagulants.
5. P. Westerhoff, P. Dahlen, **O.G. Apul**, **2016**. (Fully filed US patent, no:62/400,735). Microwave-Enabled Thermal Remediation of Organic Chemical Contaminated Soils using Dielectric Nanomaterials as Additives.

## SERVICE & PROFESSIONAL INVOLVEMENT

---

**Conference Co-Chair** – Sustainable Nanotechnology Organization Annual Conference (2022)

**Association of Environmental Engineering and Science Professors Research and Education Conference, Northeastern University** – Organizing Committee Member, (2022-2023)

**Chemical Engineering Journal Advances** - Early Career Editorial Board Membership, (2021-present)

**American Water Works Association PFAS Virtual Symposium** – Organizing Committee Member, handled 60+ abstracts (2020-present)

**Guest Co-Editor for Nanomaterials Journal** - Special issue on “Sustainable and Safe Nano-Enabled Water Treatment Applications”. Edited special issue and published 13 articles in the special issue (2019)

**Session Co-Chair** – Sustainable Nanotechnology Organization Virtual Conference (2020, 2021)

**Session Co-Chair** – American Chemical Society Virtual Fall Symposium (2020, 2021)

**Panelist at Environmental Protection Agency** – People, Planet, Prosperity Program (2020)

**Panelist at National Science Foundation** - CBET Biological and Environmental Interactions of Nanoscale Materials (2019).

**Participant at National Science Foundation** - Science Board Listening Session (2019)

**Committee Member** - Provost’s Office in College of Engineering University Level Faculty Website Development (2019 – present)

**Search Committee Member** - Civil and Environmental Engineering Department (2018)

**Faculty Senator** - representing Civil and Environmental Engineering at Faculty Senate (2018-present).

**Committee Member** - University of Massachusetts Lowell Institutional Biosafety Committee (2018-present)

**Host for 2018 Summer Sustainability Camp** for female high school students to provide hands-on research experience.

**Reviewer** for more than 90 articles in last four years mainly in journals: Environmental Science and Technology, Chemical Engineering Journal, Water Research, Environmental Toxicology and Chemistry, Science of the Total Environment, Water Science and Technology, Environmental Engineering Science, Environmental Science: Nano, Journal of Soils and Sediments, SAR and QSAR in Environmental Research, Process Safety and Environmental Protection, Resource Efficient Technologies, Journal of Renewable Materials, Nanotoxicology, Nanomaterials.

**Professional Member** - American Chemical Society (Environmental Chemistry Division), Association of Environmental Engineering and Science Professors (AEESP), Sustainable Nanotechnology Organization (SNO)