Assist. Prof. Dr. Habibullah UZUN

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EDUCATION

Post-Doc., Clemson University, USA, 2016-2017, Environ. Eng. & Earth Sci.
Ph.D., Clemson University, USA, 2016, Environ. Eng. & Earth Sci.
M.Sc., Michigan State University, USA, 2010, Environ. Eng. & Sci.
B.Sc., Sakarya University, TURKEY, 2005, Environ. Eng.
H.S., Kadikoy I.H.L., TURKEY, 2001

Ph.D. Thesis: N-Nitrosodimethylamine in Drinking Water: Temporal Formation Potential Patterns in Source Waters and Treatability of Precursors
https://tigerprints.clemson.edu/cgi/viewcontent.cgi?article=2650&context=all_dissertations

Research Interests:

My primary research interest are in the application of physicochemical processes in drinking water. I have dedicated my research career to studying water quality changes & occurrence of disinfection by-product precursors in source water and their control during water treatment. I am particularly interested in understanding the effect of human activities and watershed management on the occurrence and controlling such precursors with different treatment processes (i.e., oxidation, membranes, and activated carbon). However, recent researches showed that an abrupt changes occurs in the behavior of weather events throughout the World which has a potential to affect water sources. This new atmospheric phenomena and increased anthropogenic activities in source waters require a new approaches in terms of watershed management and water treatment. Thus, my research interest evolved on these new emerging topics and their potential effects on safe drinking water supply.

i. PROJECTS

1. United States Environmental Protection Agency (**USEPA**) Project (R835864): Effect of Wildfire on Water Quality and the Formation of DBPs in Natural Waters (1225000$) - **Post-doctoral Fellow** (2016-2018).
2. National Science Foundation (**NSF**) Project (1617040): Flooding Mobilized Natural Organic Matter from Forested Wetlands - Implication of Mercury and Carbon Cycling in Coastal Black water Rivers (50000$) - **Post-doctoral Researcher** (2015-2017, completed).
3. American Water Work Association (**AWWA**) Project (4444): The Seasonal Patterns of NDMA Formation Potentials in Water Sources and at Drinking Water Treatment Plants (300000$) **– Ph.D. Student** (2012-2016, completed).

Projects Report (Reviewed and published in a book format)

1. **Habibullah Uzun**, Daekyun Kim, Wilson Beita-Sandi, Mahmut Selim Ersan, Tanju Karanfil and Chris Petry. **2016.** Seasonal Changes of NDMA FP in Surface Waters and its Removal during Water Treatment. **AWWA**. Co. USA. (230 pages).

Projects Reports (Prepared for Agencies)

1. Flooding Mobilized Natural Organic Matter from Forested Wetlands for NSF (submitted, 2017)
2. Effect of Wildfire on Water Quality and the Formation of DBPs in Natural Waters (proposed submission, 2019) for USEPA**.**

ii. PROFESSIONAL EXPERIENCES

- **Assist. Prof. Dr.,** School of Engineering, Department of Environmental Engineering, Marmara University (2018-current)
- 2016-2017: **Post-doctoral Fellow**, EEES Clemson University
- Walhalla Water Treatment Plant (SC/USA), intake water quality determination – **Researcher** (2016).
- Lauren Water Treatment Plant (SC/USA), intake water quality determination – **Researcher** (2016-2017).
- 2015-2016: **Teaching Assistant**, EEES Clemson University
- 2010-2015: **Research Assistant**, EEES Clemson University
- 2005-2007: **Environmental Engineer**, Istanbul Metropolitan Municipality

iii. MEMBERSHIP

- 2014-present, American Chemical Society (ACS)
- 2014-present, American Water Work Association (AWWA)

iv. Journal REVIEWER

- Water Research
- Science of the Total Environment
- Journal of Environmental Quality

v. PUBLICATIONS

Refereed/under Review Journal Publications (from thesis)

1. **Uzun, H.,** Kim, D., Karanfil, T., 2015. Seasonal and Temporal Patterns of NDMA Formation Potentials in surface Waters. Water Research 69, Pages 162-172.
2. Yang, L., Kim, D., **Uzun, H.,** Karanfil, T., Hur, J., 2015. Tracing trihalomethanes (THMs) and N-nitrosodimethylamine (NDMA) formation potentials in drinking water treatment plants using fluorescence spectroscopy and parallel factor analysis. Chemosphere, 121, 84-91.
3. Sandi, W.B., Ersan, M. S., **Uzun, H.,** Karanfil, T., 2016. Removal of N-nitrosodimethylamine precursors with powdered activated carbon adsorption. Water Research 88(1): 711-718.

4. **Uzun, H.,** Kim, D., Karanfil, T., 2017. The Removal of N-Nitrosodimethylamine (NDMA) Formation Potentials in Drinking Water Treatment Plants. Journal of AWWA. 109 (6):15-28. (Special Issue on Nitrosamines, selected as a focus paper). https://pdfs.semanticscholar.org/d479/21ef84fb1b66fbceb7628bf2f83134de2b5e.pdf
5. **Uzun, H.,** Kim, D., Karanfil, T., 2018. Deactivation of wastewater-derived N-nitrosodimethylamine precursors with chlorine dioxide oxidation and the effect of pH (Sci. of the Tot. Environ. 635, 1383–1391).
6. **Uzun, H.,** Kim, D., Karanfil, T., 2017. Deactivation of Wastewater and Polymer Derived NDMA Precursors with integrated oxidation strategies (in review, Chemosphere).

Refereed Journal Publications (not related to thesis)

7. Kuo-Pei, T., **Uzun, H.,** Karanfil, T., Chow, A. 2017. Dynamic Changes of Disinfection Byproduct Precursors following Exposures of Microcystis aeruginosa to Wildfire Ash Solutions. Environmental Science and Technology (ES&T). 51(15), 8272-8282.
8. A. Ruecker, **H. Uzun,** T. Karanfil, M.T.K. Tsui, A.T. Chow. 2017. Disinfection byproduct precursor dynamics and water treatability during an extreme flooding event in a coastal blackwater river in southeastern United States. Chemosphere. 188, 90-98. (H. Uzun contributed equally to this work).
9. Hamed Majidzadeh, **Habibullah Uzun,** Alexander Ruecker, David Miller, Jeffery Vernon, Hongyuan Zhang, Shaowu Bao, Martin T. K. Tsui, Tanju Karanfil, Alex T. Chow. (2017). Extreme flooding mobilized dissolved organic matter from coastal forested wetlands. Biogeochemistry. 1-17.

Under Review/ in preparation Journal Publications (not related to thesis)

10. Kuo-Pei, T., **Uzun, H.,** Chen, H., Karanfil, T., Chow, A. Control Wildfire-Induced Microcystis aeruginosa blooms by Copper Sulfate: Trade-Offs between Reducing Algal Organic Matter and Promoting Disinfection Byproduct Formation. Environmental Science and Technology (under review, ES&T).
11. Martin Tsz-Ki Tsui, **Habibullah Uzun,** Xiangping Nie, Alexander Ruecker, Hamed Majidzadeh, Hongyuan Zhang, Shaowu Bao, Joel D. Blum, Tanju Karanfil, Alex T. Chow. Source and quantity of mercury exported from a blackwater river watershed during extreme flooding events (under review, ES&T Letters).
12. Christopher I. Olivares, Wenbo Zheng, **Habibullah Uzun,** Cagri Utku Erdem, Hamed Majidzadeh, Carl Trettin, Tanju Karanfil, and Alex Chow. Methodology and frequency of sampling to address dynamic seasonality and storm pulses of DOC exports in prescribed fire watersheds (under review, International Journal of Wildland Fire Special Issue).
13. Hamed Majidzadeh, Huan Chen, T. Adam Coates, Kuo-Pei Tsai, Carl Trettin, **Habibullah Uzun,** Tanju Karanfil, Alex T. Chow. Periodic prescribed fire is an effective watershed management strategy to reduce export of organic matter and DBP precursors in source water (under review, International Journal of Wildland Fire Special Issue).

14. **Uzun, H.,** Dahlgren, R., Olivares, C., Erdem, C.U., Karanfil. T., Chow AT. The episodic effects of California wildfires on water quality, composition of dissolved organic matter and precursors of disinfection by products (in preparation).
15. **Uzun, H.,** Zhang, W., Olivares, C., Coates, A., Erdem. U., A., Karanfil T, Chow A. The effect of long term and seasonal prescribed fires on the export of dissolved organic matter, precursors of disinfection by-products, and treatability of leachate waters (in preparation).
16. **Uzun, H.,** Karanfil, T., Chow, A. Wildfires and Water supply. A Global Challenge. A critical Review. **ACCOUNTS of Chemical Research** (invited, in preparation).
17. **Uzun, H.,** Zhang, W., Olivares, C., Erdem, C.U., Coates. A., Karanfil. T., Chow A. Effects of prescribed burn on litter contribution in DOM and DBP precursors in forested watersheds (in preparation).
18. Majidzadeh, H., **Uzun, H.,** Karanfil T, Chow AT. Contributions of Disinfection Byproduct Precursors from Different Land Uses in Coastal Watershed under a Hurricane Event (in preparation) (Uzun, H. contributed equally to this work).
19. Chen, H., **Uzun, H.,** Karanfil, T., Chow, A. Effect of high intensity fires on the formation and speciation of Disinfection by-products under different conditions (in preparation) (Uzun, H. contributed equally to this work).

Conference Proceedings

1. **Uzun, H.,** Zhang, W., Erdem, C.U., Olivares, C., Coates, A.T., Chow, A., Karanfil. T. The effect of prescribed fire on DOC and DBP precursors in forested watersheds. Proceedings of 2016 Annual Conference & Exposition (ACE). Philadelphia, Pennsylvania (June 2017).
2. **Uzun, H.,** Ruecker, A., Chow, A., Karanfil, T., and Tsui, MTK. "Water Treatability of Surface Water under Intensive Flooding– A Case Study of South Carolina Flooding". Proceedings of 2016 Water Quality Technology Conference, Indianapolis, Indiana, (November 2016).
3. Zhang, W., **Uzun, H.,** Erdem U., Olivares C., Coates T., Rogers, F-M., Karanfil, T., and Chow, A. "Exports of dissolved organic carbon and disinfection byproduct precursors from prescribed burnt forests". Proceedings of 252th National Meeting of American Chemical Society in Philadelphia, PA, Division of Environmental Chemistry, (August 2016).
4. Chow, A., Ruecker, A., **Uzun, H.,** and Karanfil, T., "Dissolved Organic Matter and Disinfection Byproduct Precursors in Coastal Blackwater Rivers: A Case Study of South Carolina Flooding". Proceedings of 252th National Meeting of American Chemical Society in in Philadelphia, PA, California, Division of Environmental Chemistry, (August 2016).
5. **Uzun, H.,** Kim, D., and Karanfil, T. "Removal of Wastewater- and Polymer-derived NDMA Precursors by Integrated Cl_2 & ClO_2 Oxidations". Proceedings of 2016 Annual Conference & Exposition (ACE). Chicago, Illinois (June 2016).
6. **Uzun, H.,** Kim, D., and Karanfil, T. "NDMA FP Control with Chlorine Dioxide and Chlorine Oxidation". Proceedings of 2014 Water Quality Technology Conference, New Orleans, Louisiana, (November 2014).
7. Karanfil, T., **Uzun, H.,** Kim, D. (invited) "An Overview of NDMA Formation and Seasonal and Temporal Variability of NDMA Formation Potentials in Selected Source Waters". Proceedings of 2014 Annual Conference, American Water Works Association, Boston, Massachusetts, (June 2014).

8. **Uzun, H.,** Kim, D. and Karanfil, T. "Temporal Patterns of NDMA Precursor Removal at Drinking Water Treatment Plants". Proceedings of 248th National Meeting of American Chemical Society in San Francisco, CA, Division of Environmental Chemistry, (August 2014).
9. **Uzun, H.,** Kim, D., and Karanfil, T. "Seasonal Variation of NDMA Formation Potentials In Source Waters And Control of NDMA At Drinking Water Treatment Plants" Proceedings of 2013 Annual Conference, American Water Works Association, Denver, CO (June 2013).

Other Scholarly Publications (including those selected from abstracts or extended abstracts and presented at conferences)

1. Tsui, Martin; **Uzun, Habibullah;** Kuo-Pei, Tsai; Karanfil, Tanju; Dahlgren, Randy; Chow, Alex. (2017). Fluvial Transport of Mercury from tow Burned Watersheds in Northern California. 13th International Conference on Mercury as a Global Pollutant. Providence, Rhode Island (July 16-21, 2017).
2. Tsui, Martin; **Uzun, Habibullah;** Bao, Shaowu; Zhang, Hongyuan; Ruecker, Alexander. (2017). Extreme Flooding-induced Fluvia Export of Total Mercury and Methylmercury in the Coastal Plain. 13th International Conference on Mercury as a Global Pollutant. Providence, Rhode Island (July 16-21, 2017).
3. Shaowu Bao, Hongyuan Zhang, Martin Tsz-Ki Tsui, Alexander Ruecker, **Habibullah Uzun,** Tanju Karanfil and Alex T Chow. 2017. Water and Nutrients Exports during an Extreme Flooding Event in South Carolina. AGU Chapman Conference. San Juan, Puerto Rico, USA (22-27 January 2017).
4. Christopher I. Olivares; **Habibullah Uzun;** Cagri Utku Erdem; Wenbo Zheng; Carl Trettin; Yina Liu; Errol Robinson; Alex Chow; Tanju Karanfil. (2017). Compositional changes of dissolved organic matter following prescribed fire on forested watersheds and their effect on drinking water supply. Advancing Healthy Communities through Environmental engineering and Science (AEESP) (June 20-22 2017).
5. Wenbo Zhang, Christopher I. Olivares, **Habibullah Uzun,** Cagri Utku Erdem, Carl Trettin, Yina Liu, Errol R. Robinson, Tanju Karanfil, Alex T. Chow1. (2017). Export of Dissolved Organic Carbon following Prescribed Fire on Forested Watersheds: Implications for Watershed Management for Drinking Water Supply. American Geophysical Union (AGU) Fall Meeting. San Francisco (12-16 December 2016).
6. Olivares, C.U.I., **Uzun, H.,** Dahlgren, R., Erdem, C.U., Chow, A., Karanfil, T. Water quality and disinfection by-product precursor changes after the 2015 Wragg/Rocky wildfires in Northern California, Myrtle Beach, South Carolina (March 2016).
7. **Uzun, H.,** Kim, D., and Karanfil, T. "Uzun, H., Kim, D., and Karanfil, T. "Removal of Wastewater- and Polymer-derived NDMA Precursors by Integrated Cl_2 & ClO_2 Oxidations". South Carolina Environmental Conference, Myrtle Beach, South Carolina (March 2016).
8. **Uzun, H.,** Kim, D., Ates, N. and Karanfil, T. "Can prescribed fire reduce disinfection by-product precursor loading to source water?" Water Quality Technology Conference, Indiana, Indianapolis, (November 2016).
9. **Uzun, H.,** Kim, D., and Karanfil, T. "Uzun, H., Kim, D., and Karanfil, T. "Removal of Wastewater- and Polymer-derived NDMA Precursors by Integrated Cl_2 & ClO_2 Oxidations". South Carolina Environmental Conference, Myrtle Beach, South Carolina (March 2016).

10. **Uzun, H.,** Kim, D., Karanfil, T. Control of wastewater and polymer derived NDMA precursors with integrated oxidation strategies. Gordon Research Conference, Drinking Water Disinfection By-Products Mount Holyoke College in South Hadley MA US (August 2015).
11. **Uzun, H.,** Kim, D., and Karanfil, T. "NDMA formation Potentials in Sources and Control at Drinking Water Treatment Plants," Istanbul International Solid Waste, Water, and Wastewater Congress 2013, Istanbul, Turkey (May 2013).
12. **Uzun, H.,** Kim, D., Ates, N. and Karanfil, T. "NDMA Precursors in Source Waters and Water Treatment Plants," Annual Conference, American Water Works Association, Dallas, TX (June 2012).
13. **Uzun, H.,** Kim, D., Ates, N. and Karanfil, T. "NDMA Precursors in Source Waters and Water Treatment Plants," South Carolina Environmental Conference, Myrtle Beach, South Carolina, (March 2012).
14. **Uzun, H.,** Kim, D., Karanfil, T. "NDMA Formation & Control in a Drinking Water Treatment Plants". South Carolina Environmental Conference, Myrtle Beach, South Carolina, (March 2012).

Posters

1. Tsui, Martin; **Uzun, Habibullah;** Kuo-Pei, Tsai; KaranfilL, Tanju; Dahlgren, Randy; Chow, Alex. (2017). Fluvial Transport of Mercury from tow Burned Watersheds in Northern California. 13th International Conference on Mercury as a Global Pollutant. Providence, Rhode Island (July 16-21, 2017).
2. Tsui, Martin; **Uzun, Habibullah;** Bao, Shaowu; Zhang, Hongyuan; Ruecker, Alexander. (2017). Extreme Flooding-induced Fluvia Export of Total Mercury and Methylmercury in the Coastal Plain. 13th International Conference on Mercury as a Global Pollutant. Providence, Rhode Island (July 16-21, 2017).
3. Shaowu Bao, Hongyuan Zhang, Martin Tsz-Ki Tsui, Alexander Ruecker, **Habibullah Uzun,** Tanju Karanfil and Alex T Chow. 2017. Water and Nutrients Exports during an Extreme Flooding Event in South Carolina. American Geophysical Union (AGU) Chapman Conference. San Juan, Puerto Rico, USA (22-27 January 2017).
4. Wenbo Zhang, Christopher I. Olivares, **Habibullah Uzun,** Cagri Utku Erdem, Carl Trettin, Yina Liu, Errol R. Robinson, Tanju Karanfil, Alex T. Chow1. (2017). Export of Dissolved Organic Carbon following Prescribed Fire on Forested Watersheds: Implications for Watershed Management for Drinking Water Supply. American Geophysical Union (AGU) Fall Meeting. San Francisco (12-16 December 2016).
5. Shaowu Bao, Hongyuan Zhang, Martin Tsz-Ki Tsui, Alexander Ruecker, **Habibullah Uzun**, Tanju Karanfil and Alex T Chow. 2017. Export, Transport, and Transformation of C, N, and P through the Fluvial/Aquatic Network from the Source to the Sea. American Geophysical Union (AGU) Chapman Conference. San Juan, Puerto Rico, USA (22-27 January 2017).
6. Cagri Utku Erdem, Christopher I. Olivares**, Habibullah Uzun,** Wenbo Zheng, Carl Trettin, Yina Liu, Errol Robinson, Alex Chow, and Tanju Karanfil. Compositional Changes of Dissolved Organic Matter Following Prescribed Fire on Forested Watersheds and their Effect on Drinking Water Supply. South Carolina Environmental Conference, Myrtle Beach, SC/USA (March 2017).
7. **Habibullah Uzun,** Cagri Utku Erdem, Wenbo Zhang, Christopher I. Olivares, Alex T. Chow and Tanju Karanfil. Can prescribed fire reduce disinfection by-product precursor loading to source water? Water Quality Technology Conference, Indiana, Indianapolis, (November 2016).

8. **Habibullah Uzun,** Alexander M. Ruecker, Tanju Karanfil, and Alex T. Chow. "Treatability of Coastal Black River during the Historical Flooding Event in SC". South Carolina Environmental Conference, Myrtle Beach, SC/USA (March 2016).
9. Cagri Utku Erdem, Wenbo Zhang, **Habibullah Uzun,** Christopher I. Olivares, Alex T. Chow and Tanju Karanfil. Forest Fire and Drinking Water Quality: Forest management reduces THM & HAA formation. South Carolina Environmental Conference, Myrtle Beach, SC/USA (March 2016).
10. **Habibullah Uzun,** Daekyun Kim, and Tanju Karanfil. Control of wastewater and polymer derived NDMA precursors with integrated oxidation strategies. Gordon Conference, Drinking Water Disinfection By-Products Mount Holyoke College in South Hadley, MA/USA (August 2015).
11. **Habibullah Uzun,** Daekyun Kim, and Tanju Karanfil. Control of NDMA Precursors by Oxidation with Chlorine Dioxide, SCEC. Myrtle Beach, SC/USA (March 2015).
12. **Habibullah Uzun,** Daekyun Kim, Nuray Ates, and Tanju Karanfil. NDMA Formation from Source Waters to Distribution Systems. ACE (AWWA). Dallas, TX/USA (June 2012).
13. **Habibullah Uzun,** Daekyun Kim, Nuray Ates, and Tanju Karanfil. NDMA Precursors in Source Waters and Water Treatment Plants, SCEC. Myrtle Beach, SC/USA (March 2012).

Presentations (those not listed under publications)

1. **Habibullah Uzun** (invited). Control of NDMA during Water Treatment, Some Findings from Major Flooding and Fire Studies. Marmara University. Dep. of Environ. Eng. (Seminar) (2017).
2. Karanfil, T., **Uzun, H.** and Selbes, H. (invited). NDMA, a Chloramination Disinfection By-Product: Experiences with SC Utilities. 20th Southeastern Regional Technology Conference, Greenville, South Carolina, US (January 2014).
3. **Uzun, H.,** Kim, D., Karanfil, T., NDMA FP Removal at Drinking Water Treatment Plants. EEES PhD Seminar, Clemson, SC, US (August 2014).
4. **Uzun, H.,** Kim, D., Karanfil, T., Removal of NDMA FPs at Full-scale Drinking Water Treatment Plants and NDMA Occurrence in Distribution Systems. PAC Committee Meeting. Clemson University, SC, US (October 2013).
5. **Uzun, H.,** Kim, D., Karanfil, T., 2013. NDMA Formation & Control in a Drinking Water Treatment Plant. Young Professionals. Columbia, SC, US (September 2013).
6. **Uzun, H.,** NDMA Formation from Source Waters to Distribution Systems. EEES PhD Seminar Clemson University, SC, US (July 2012).

vi. HONORS/AWARDS

- 2016, SCAWWA & (Poster presentation). 4th position.
- 2015, Ray A. Abernathy Fellowship, Water Environment Association of South Carolina AWWA-WEASC, (An award given to an outstanding graduate student in the Environ. Eng. and Sci. Dep. at Clemson University).
- American Chemical Society (ACS) (San Francisco, 10-14 August 2014) Environ. Merit, presentation Award.
- 2015, SCAWWA & SCEC. (Poster presentation). 3th position.
- 2012, SCAWWA & SCEC. (Poster presentation). 1th position.

- 2008-2014, graduate education scholarship (Sponsor: The Republic of Turkey, Ministry of Education).
- 2015, GRC, Travel and Living expenses for the Gordon Conference, Drinking Water Disinfection By-Products Mount Holyoke College in South Hadley MA US .
- 2015, Clemson University, PEGAS Award, Travel and Living expenses for the Gordon Conference, Drinking Water Disinfection By-Products Mount Holyoke College in South Hadley MA US.
- 2014, Clemson University, PEGAS Award, Travel and Living expenses for the WQTC, Conference, in Louisiana, New Orleans.
- 2014, American Chemical Society (ACS) (Travel expenses scholarship (sponsor: ACS, US).

vii. INSTRUMENT/EQUIPMENT USE

- GCMS: Agilent 7890B GC/MS
- GC: Agilent 6890
- TOC analyzer: Shimatsu TOC-L and TOC-V
- TOX Analyzer: Analytical Jena Multix2500
- Ion Chromatography: Dionex ICS-2100
- Colorimeter: Hach DR890
- Fluorescence Emission Excitation. Matrices (EEMs) Measurements and Analysis.
- Water Quality Probe: Hydrolab datasonde 4/5
- Jar Tester: Phipps&Bird, PB-700
- pH Meter: Symphony SB80PC
- Turbidity Meter: Hach 2100N
- UV: Varian 50BiO