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International Researcher IDs

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Biography

My primary field of research interest is the application of physicochemical processes (i.e., adsorption, chemical oxidation, separation) in drinking water. I have dedicated my research career to studying water quality, the occurrence of disinfection by-product (DBP) precursors in source water, and their control during water treatment. I am also interested in understanding the algal and human activities on the occurrence of micropollutants (e.g., MIB and Geosmin, pharmaceuticals, per- and polyfluoroalkyl substances [PFAS], microplastics, flame retardants, pesticides, etc.) and heavy metals in source waters and controlling them with different physicochemical applications. However, recent research showed that abrupt changes occur in the behavior of weather events (i.e., global warming, drought, and heatwaves). Also, industrial, and domestic waste or wastewater discharges increase across the globe. The case in this new atmospheric phenomena, catastrophic events (i.e., drought, hot weather, wildfires, flooding), and increased algal and anthropogenic activities in source waters require 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. In addition, I'm doing research on the production of activated carbon from the waste feedstock and the regeneration of exhausted GACs. Furthermore, I am also a member of the International Biochar Association, and doing research on the production of biochar, a pyrolysis product shown as one of the most important future technologies on sequestration of carbon and improving plant & crop growth, from biosolids and waste feedstock.

Education Information

Doctorate, Clemson University, College of Engineering, Environmental Engineering and Science, United States Of America
2010 - 2016

Postgraduate, Michigan State University, College of Engineering, Civil and Environmental Engineering, United States Of America
2008 - 2010

Undergraduate, Sakarya University, Faculty Of Engineering, Department Of Environmental Engineering, Turkey
2002 - 2005

Dissertations

Doctorate, N-nitrosodimethylamine in drinking water: Temporal formation potential patterns in source waters and treatability of precursors, Clemson University, Environmental Engineering And Science, 2016

Research Areas

Environmental Engineering, Environmental Chemistry, Waste Water Collection and Treatment, Water Pollution and Control, Water Supply and Treatment, Water and Air Resources Management

Academic Titles / Tasks

Assistant Professor, Marmara University, Faculty of Engineering, Environmental Engineering, 2018 - Continues
Research Assistant, Sakarya University, Faculty Of Engineering, Department Of Environmental Engineering, 2017 - 2018
Medical Doctor, Clemson University, College of Engineering, Environmental Engineering and Earth Science, 2016 - 2017
Student, Clemson University, College of Engineering, Environmental Engineering and Earth Science, 2010 - 2016

Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Effect of prescribed fires on the export of dissolved organic matter, precursors of disinfection by-products, and water treatability**
UZUN H., Zhang W., Olivares C. I., Erdem C. U., Coates T. A., Karanfil T., Chow A. T.
Water Research, vol.187, 2020 (SCI-Expanded)
- II. **Low water treatability efficiency of wildfire-induced dissolved organic matter and disinfection by-product precursors**
Chen H., UZUN H., Chow A. T., Karanfil T.
Water Research, vol.184, 2020 (SCI-Expanded)
- III. **Concentration and isotopic composition of mercury in a blackwater river affected by extreme flooding events**
Tsui M. T., Uzun H., Ruecker A., Majidzadeh H., Ulus Y., Zhang H., Bao S., Blum J. D., Karanfil T., Chow A. T.
LIMNOLOGY AND OCEANOGRAPHY, vol.65, no.9, pp.2158-2169, 2020 (SCI-Expanded)
- IV. **Two years of post-wildfire impacts on dissolved organic matter, nitrogen, and precursors of disinfection by-products in California stream waters**
UZUN H., Dahlgren R. A., Olivares C., Erdem C. U., Karanfil T., Chow A. T.
Water Research, vol.181, 2020 (SCI-Expanded)
- V. **Hurricane resulted in releasing more nitrogenous than carbonaceous disinfection byproduct precursors in coastal watersheds.**
Majidzadeh H., Uzun H., Chen H., Bao S., Tsui M., Karanfil T., Chow A.
The Science of the total environment, vol.705, pp.135785, 2020 (SCI-Expanded)
- VI. **Control wildfire-induced Microcystis aeruginosa blooms by copper sulfate: Trade-offs between reducing algal organic matter and promoting disinfection byproduct formation**
Tsai K., UZUN H., Chen H., Karanfil T., Chow A. T.
WATER RESEARCH, vol.158, pp.227-236, 2019 (SCI-Expanded)
- VII. **Removal of wastewater and polymer derived N-nitrosodimethylamine precursors with integrated use of chlorine and chlorine dioxide**
Uzun H., Kim D., Karanfil T.
CHEMOSPHERE, vol.216, pp.224-233, 2019 (SCI-Expanded)
- VIII. **Long-term watershed management is an effective strategy to reduce organic matter export and disinfection by-product precursors in source water**
Majidzadeh H., Chen H., Tsai K., Christopher O., Carl T., UZUN H., Karanfil T., Chow A. T.
International Journal Of Wildland Fire, 2019 (SCI-Expanded)
- IX. **Optical in-situ sensors capture dissolved organic carbon (DOC) dynamics after prescribed fire in high-DOC forest watersheds**
Olivares C. I., Zhang W., Uzun H., Erdem C. U., Majidzadeh H., Trettin C., Karanfil T., Chow A.

INTERNATIONAL JOURNAL OF WILDLAND FIRE, vol.28, no.10, pp.761-768, 2019 (SCI-Expanded)

- X. **Deactivation of wastewater-derived N-nitrosodimethylamine precursors with chlorine dioxide oxidation and the effect of pH**
UZUN H., Kim D., Karanfil T.
SCIENCE OF THE TOTAL ENVIRONMENT, vol.635, pp.1383-1391, 2018 (SCI-Expanded)
- XI. **Disinfection byproduct precursor dynamics and water treatability during an extreme flooding event in a coastal blackwater river in southeastern United States**
Ruecker A., UZUN H., Karanfil T., Tsui M. T. K., Chow A. T.
CHEMOSPHERE, vol.188, pp.90-98, 2017 (SCI-Expanded)
- XII. **Extreme flooding mobilized dissolved organic matter from coastal forested wetlands**
Majidzadeh H., UZUN H., Ruecker A., Miller D., Vernon J., Zhang H., Bao S., Tsui M. T. K., Karanfil T., Chow A. T.
BIOGEOCHEMISTRY, vol.136, no.3, pp.293-309, 2017 (SCI-Expanded)
- XIII. **Dynamic Changes of Disinfection Byproduct Precursors following Exposures of Microcystis aeruginosa to Wildfire Ash Solutions**
Tsai K., UZUN H., Karanfil T., Chow A. T.
ENVIRONMENTAL SCIENCE & TECHNOLOGY, vol.51, no.15, pp.8272-8282, 2017 (SCI-Expanded)
- XIV. **The Removal of N-Nitrosodimethylamine Formation Potential in Drinking Water Treatment Plants**
UZUN H., Kim D., Karanfil T.
JOURNAL AMERICAN WATER WORKS ASSOCIATION, vol.109, pp.15-28, 2017 (SCI-Expanded)
- XV. **Removal of N-nitrosodimethylamine precursors with powdered activated carbon adsorption**
Beita-Sandi W., Ersan M. S., UZUN H., Karanfil T.
WATER RESEARCH, vol.88, pp.711-718, 2016 (SCI-Expanded)
- XVI. **Assessing trihalomethanes (THMs) and N-nitrosodimethylamine (NDMA) formation potentials in drinking water treatment plants using fluorescence spectroscopy and parallel factor analysis**
Yang L., Kim D., UZUN H., Karanfil T., Hur J.
CHEMOSPHERE, vol.121, pp.84-91, 2015 (SCI-Expanded)
- XVII. **Seasonal and temporal patterns of NDMA formation potentials in surface waters**
UZUN H., Kim D., Karanfil T.
WATER RESEARCH, vol.69, pp.162-172, 2015 (SCI-Expanded)

Articles Published in Other Journals

- I. **Increased Organohalogen Diversity after Disinfection of Water from a Prescribed Burned Watershed**
Olivares C., UZUN H., Erdem C. U., Zhang W., Trettin C., Liu Y., Burton S. D., Robinson E. W., Karanfil T., Chow A. T.
ACS ENVIRONMENTAL SCIENCE AND TECHNOLOGY WATER, vol.1, no.5, pp.1274-1282, 2021 (ESCI)

Books & Book Chapters

- I. **Seasonal Changes of NDMA Formation Potential and its Removal During Water Treatment**
UZUN H., Daekyun K., Wilson B., Mahmut Selim E., Karanfil T., Chris P.
Water Research Foundation, Colorado, 2016

Refereed Congress / Symposium Publications in Proceedings

- I. **Prescribed Fire Reduces Disinfection Byproduct Precursors In Source Water**
Chow A. T., Karanfil T., UZUN H., Carl T.
NOM7 IWA Specialist Conference on Natural Organic Matter, Tokyo, Japan, 7 - 10 October 2019
- II. **Influence Of Hurricane Events On Dissolved Organic Matter Export And Disinfection Byproduct**

Formations In Coastal Blackwater Rivers

Chen H., Majidzadeh H., Ruecker A., UZUN H., Karanfil T., Chow A. T.

NOM7 IWA Specialist Conference on Natural Organic Matter, Tokyo, Japan, 7 - 10 October 2019

- III. **Extreme flooding induced transport of mercury and methylmercury in a blackwater river in the coastal plain**
Tsui M. T. K., UZUN H., Ruecker A., Xiangping N., Joel B., Bao S., Karanfil T., Chow A. T.
13 th International Conference on Mercury as a Global Pollutant, 16 - 21 July 2017
- IV. **Fluvial transport of mercury and methylmercury from two burned watersheds in northern California**
Peijia K., Tsui M. T. K., UZUN H., Karanfil T., Randy D., Chow A. T.
13 th International Conference on Mercury as a Global Pollutant, 16 - 21 July 2017
- V. **The effect of prescribed fire on DOC and DBP precursors in forested watersheds**
UZUN H., Wenbo Z., Cagri Utku E., Christopher O., Thomas C., Chow A. T., Karanfil T.
AWWA Annual Conference Exposition 2017, 11 - 14 June 2017
- VI. **Compositional changes to DOM following prescribed fires on forested watersheds and their effect on drinking water supply**
Christopher O., UZUN H., Cagri Utku E., Wenbo Z., Thomas C., Carl T., Yina L., Errol R., Chow A. T., Karanfil T.
Advancing Healthy Communities through Environmental Engineering and Science (AEESP) 2017, 20 - 22 June 2017
- VII. **The effect of prescribed burns on dissolved organic matter (DOM) exports and disinfection by-product formation potential (DBP FP)**
Cagri Utku E., Wenbo Z., UZUN H., Christopher O., Thomas C., Chow A. T., Karanfil T.
South Carolina Environmental Conference - SCAWWA/WEASC 2017, 12 - 15 March 2017
- VIII. **Compositional Changes of Dissolved Organic Matter Following Prescribed Fire on Forested Watersheds and their Effect on Drinking Water Supply**
Cagri Utku E., Christopher O., UZUN H., Wenbo Z., Carl T., Yina L., Errol R., Chow A. T., Karanfil T.
South Carolina Environmental Conference - SCAWWA/WEASC 2017, 12 - 15 March 2017
- IX. **Water and Nutrients Exports during an Extreme Flooding Event in South Carolina**
Shaowu B., Hongyuan Z., Tsui M. T. K., Ruecker A., UZUN H., Karanfil T., Chow A. T.
AGU Chapman 2017, 22 - 27 January 2017
- X. **Dissolved Organic Carbon and Mercury Exports during Extreme Flooding in South Carolina induced by Hurricane Joaquin, 2015**
Chow A. T., Shaowu B., Hongyuan Z., Tsui M. T. K., Ruecker A., UZUN H., Karanfil T.
AGU 2016, 12 - 16 December 2016
- XI. **Can prescribed fire reduce disinfection by-product precursor loading to source water?**
UZUN H., Christopher O., Wenbo Z., Cagri Utku E., Chow A. T., Karanfil T.
AWWA Water Quality and Technology Conference 2016, 13 - 17 November 2016
- XII. **Water Treatability of Surface Water Under Intensive Flooding - Case Study of South Carolina Flooding**
Karanfil T., UZUN H., Ruecker A., Tsui M. T. K., Chow A. T.
AWWA Water Quality and Technology Conference 2016, 13 - 17 November 2016
- XIII. **Dissolved Organic Matter and Disinfection Byproduct Precursors in Coastal Blackwater Rivers: A Case Study of South Carolina Flooding**
Chow A. T., Ruecker A., UZUN H., Karanfil T., Tsui M. T. K.
American Chemical Society 252th Conference 2016, 20 - 25 August 2016
- XIV. **Exports of dissolved organic carbon and disinfection byproduct precursors from prescribed burnt forests**
Wenbo Z., UZUN H., Cagri Utku E., Christopher O., Thomas C., Frances Mary R., Karanfil T., Chow A. T.
American Chemical Society 252th Conference 2016, 20 - 25 August 2016
- XV. **Removal of Wastewater- and Polymer- derived NDMA Precursors with Integrated Oxidation Strategies**

- UZUN H., Daekyun K., Karanfil T.
AWWA Annual Conference Exposition 2016, 19 - 22 June 2016
- XVI. **Removal of Wastewater- and Polymer-derived NDMA Precursors by Integrated Cl₂ ClO₂ Oxidations**
UZUN H., Daekyun K., Karanfil T.
South Carolina Environmental Conference - SCAWWA/WEASC 2016, 13 - 16 March 2016
- XVII. **Treatability of Coastal Black River during the Historical Flooding Event in SC**
UZUN H., Ruecker A., Karanfil T., Chow A. T.
South Carolina Environmental Conference - SCAWWA/WEASC 2016, 13 - 16 March 2016
- XVIII. **Forest Fire and Drinking Water Quality : Forest management reduces THM HAA formation**
Cagrı Utku E., Wenbo Z., UZUN H., Christopher O., Chow A. T., Karanfil T.
South Carolina Environmental Conference - SCAWWA/WEASC 2016, 13 - 16 March 2016
- XIX. **DEACTIVATION OF WASTEWATER- AND POLYMER-DERIVED NDMA PRECURSORS WITH INTEGRATED OXIDATION**
UZUN H., Daekyun K., Karanfil T.
Gordorn Research Conference 2015, 9 - 13 August 2015
- XX. **Control of NDMA Precursors by Oxidation with Chlorine Dioxide**
UZUN H., Daekyun K., Karanfil T.
South Carolina Environmental Conference - SCAWWA/WEASC 2012, 15 - 17 March 2015
- XXI. **The Control of NDMA with Chlorine Dioxide (ClO₂)**
UZUN H., Daekyun K., Karanfil T.
AWWA Water Quality and Technology Conference 2014, 16 - 20 November 2014
- XXII. **Temporal patterns of NDMA precursors' removal at drinkingwater treatment plants**
UZUN H., Daekyun K., Karanfil T.
American Chemical Society 248th Conference 2014, 10 - 14 August 2014
- XXIII. **An Overview of NDMA Formation Seasonal Temporal Variability of NDMA Formation Potentials in Selected Source Waters**
Karanfil T., UZUN H., Daekyun K.
AWWA Annual Conference Exposition 2014, 9 - 12 June 2014
- XXIV. **Temporal Seasonal Patterns of NDMA Formation Potentials in Source Waters**
UZUN H., Daekyun K., Karanfil T.
AWWA Annual Conference Exposition 2013, 10 - 13 June 2013
- XXV. **NDMA Formation Control in a Drinking Water Treatment Plants**
UZUN H., Daekyun K., Karanfil T.
Water, Wastewater and Waste (3W) Istanbul 2013, 22 - 24 May 2013
- XXVI. **NDMA Formation Potentials in Source Waters and Removal at Drinking Water Treatment Plants**
UZUN H., Daekyun K., Karanfil T.
South Carolina Environmental Conference - SCAWWA/WEASC 2013, 10 - 12 March 2013
- XXVII. **NDMA Formation from Source Waters to Distribution Systems**
UZUN H., Daekyun K., Nuray A., Karanfil T.
AWWA Annual Conference Exposition 2012, 10 - 14 June 2012
- XXVIII. **NDMA Precursors in Source Waters and Water Treatment Plants**
UZUN H., Daekyun K., Nuray A., Karanfil T.
South Carolina Environmental Conference - SCAWWA/WEASC 2012, 11 - 13 March 2012

Metrics

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