

# Prof. ADİLE EVREN TUĞTAŞ KARNABAT

## Personal Information

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## International Researcher IDs

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Publons / Web Of Science ResearcherID: Z-5490-2019

ScopusID: 14833427600

Yoksis Researcher ID: 42948

## Biography

A. Evren Tugtas has received her Bachelor's degree in Environmental Engineering from Marmara University in 2001. She earned her MS and PhD degrees in Environmental Engineering from Georgia Institute of Technology in 2005 and 2007, respectively. After working in a research institute and a university for two years in Turkey, she worked at the Advanced Water Management Centre at the University of Queensland between 2009 and 2010. She is currently a faculty member of Environmental Engineering at Marmara University, İstanbul, Turkey. Her current research interests include anaerobic digestion, resource recovery, metal removal, and membrane recovery processes.

## Education Information

Doctorate, Georgia Institute of Technology, Çevre Mühendisliği, Civil and Environmental Engineering, United States Of America 2002 - 2007

Postgraduate, Georgia Institute of Technology, Engineering Faculty, Civil and Environmental Engineering, United States Of America 2002 - 2005

Undergraduate, Marmara University, Faculty of Engineering, Environmental Engineering, Turkey 1996 - 2001

## Foreign Languages

English, C1 Advanced

## Dissertations

Doctorate, EFFECT OF NITRATE REDUCTION ON THE METHANOGENIC FERMENTATION: PROCESS INTERACTIONS AND MODELING, Georgia Institute Of Technology, Çevre Mühendisliği, 2007

## Research Areas

## Academic Titles / Tasks

Professor, Marmara University, Faculty of Engineering, Environmental Engineering, 2021 - Continues  
Associate Professor, Marmara University, Faculty of Engineering, Environmental Engineering, 2016 - 2021  
Assistant Professor, Marmara University, Faculty of Engineering, Environmental Engineering, 2011 - 2016

## Advising Theses

Yeşil H., Tuğtaş Karnabat A. E., Modeling of pH-controlled anaerobic fermentation of ultrasound pre-treated sewage sludge, Postgraduate, A.İNAN(Student), Continues  
Yeşil H., Tuğtaş Karnabat A. E., Modeling of the Effects of Ammonia Inhibition on Anaerobic Digestion, Postgraduate, İ.SEKİZELMA(Student), Continues  
Tuğtaş Karnabat A. E., Selective separation and recovery of heavy metals from sewage sludge via integrated anaerobic bio-leaching and membrane processes, Doctorate, H.YEŞİL(Student), 2021  
Çallı B., Tuğtaş Karnabat A. E., Anaerobic digestion of waste activated sludge: Influence of co- substrate in the bioleaching of heavy metals, Doctorate, R.MOLAEY(Student), 2021  
Tuğtaş Karnabat A. E., Effect of operational parameters on volatile fatty acid separation from anaerobic fermentation broths via microporous flat sheet membrane contactors, Postgraduate, S.AYDIN(Student), 2018  
Tuğtaş Karnabat A. E., Separation of volatile fatty acids from leachate via composite pervaporation membranes, Postgraduate, Ç.KÜLLÜ(Student), 2018  
Tuğtaş Karnabat A. E., Tavuk atığı içerisindeki amonyağın membran kontaktör ve fitoremediasyon yöntemleri ile uzaklaştırılması, Postgraduate, S.ORTAKÇI(Student), 2018  
Tuğtaş Karnabat A. E., Separation of volatile fatty acids via pervaporation, Postgraduate, H.TANER(Student), 2016  
Tuğtaş Karnabat A. E., Anaerobic fermentation of organic solid wastes: Volatile fatty acid production and separation, Postgraduate, H.YEŞİL(Student), 2013

## Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Conceptual system for sustainable and next-generation wastewater resource recovery facilities**  
Owusu-Agyeman I., Plaza E., Elginöz N., Atasoy M., Khatami K., Perez-Zabaleta M., Cabrera-Rodríguez C., YEŞİL H., TUĞTAŞ KARNABAT A. E., ÇALLI B., et al.  
Science of the Total Environment, vol.885, 2023 (SCI-Expanded)
- II. **Removal and recovery of heavy metals from sewage sludge via three-stage integrated process**  
YEŞİL H., Molaey R., ÇALLI B., TUĞTAŞ KARNABAT A. E.  
Chemosphere, vol.280, 2021 (SCI-Expanded)
- III. **Enhanced heavy metal leaching from sewage sludge through anaerobic fermentation and air-assisted ultrasonication**  
Molaey R., YEŞİL H., ÇALLI B., TUĞTAŞ KARNABAT A. E.  
Chemosphere, vol.279, 2021 (SCI-Expanded)
- IV. **Extent of bioleaching and bioavailability reduction of potentially toxic heavy metals from sewage sludge through pH-controlled fermentation**  
YEŞİL H., Molaey R., ÇALLI B., TUĞTAŞ KARNABAT A. E.  
Water Research, vol.201, 2021 (SCI-Expanded)
- V. **Influence of volatile fatty acids in anaerobic bioleaching of potentially toxic metals**  
Molaey R., YEŞİL H., ÇALLI B., TUĞTAŞ KARNABAT A. E.  
Journal of Environmental Management, vol.285, 2021 (SCI-Expanded)

- VI. **A hybrid dry-fermentation and membrane contactor system: Enhanced volatile fatty acid (VFA) production and recovery from organic solid wastes**  
YEŞİL H., ÇALLI B., TUĞTAŞ KARNABAT A. E.  
Water Research, vol.192, 2021 (SCI-Expanded)
- VII. **Pervaporative Separation of Mixed Volatile Fatty Acids: A Study Towards Integrated VFA Production and Separation**  
Yeşil H., Taner H., Uğur Nigiz F., Hilmioğlu N., Tuğtaş Karnabat A. E.  
WASTE AND BIOMASS VALORIZATION, vol.11, no.11, pp.1737-1753, 2020 (SCI-Expanded)
- VIII. **Removal of heavy metals from leaching effluents of sewage sludge via supported liquid membranes**  
YEŞİL H., Tugtas A. E.  
SCIENCE OF THE TOTAL ENVIRONMENT, vol.693, 2019 (SCI-Expanded)
- IX. **Ammonia removal from chicken manure digestate through vapor pressure membrane contactor (VPMC) and phytoremediation**  
ORTAKÇI S., YEŞİL H., TUĞTAŞ KARNABAT A. E.  
Waste Management, vol.85, pp.186-194, 2019 (SCI-Expanded)
- X. **Recovery of mixed volatile fatty acids from anaerobically fermented organic wastes by vapor permeation membrane contactors**  
Aydın S., YEŞİL H., TUĞTAŞ KARNABAT A. E.  
BIORESOURCETECHNOLOGY, vol.250, pp.548-555, 2018 (SCI-Expanded)
- XI. **Sulfide and methane production in sewer sediments: Field survey and model evaluation**  
Liu Y., Tugtas A. E., Sharma K. R., Ni B., Yuan Z.  
WATER RESEARCH, vol.89, pp.142-150, 2016 (SCI-Expanded)
- XII. **Recovery of volatile fatty acids via membrane contactor using flat membranes: Experimental and theoretical analysis**  
Tugtas A. E.  
WASTE MANAGEMENT, vol.34, no.7, pp.1171-1178, 2014 (SCI-Expanded)
- XIII. **Anaerobic fermentation of organic solid wastes: volatile fatty acid production and separation**  
Yesil H., Tugtas A. E., Bayrakdar A., Calli B.  
WATER SCIENCE AND TECHNOLOGY, vol.69, no.10, pp.2132-2138, 2014 (SCI-Expanded)
- XIV. **Bio-electrochemical post-treatment of anaerobically treated landfill leachate**  
TUĞTAŞ KARNABAT A. E., ÇAVDAR P., ÇALLI B.  
BIORESOURCETECHNOLOGY, vol.128, pp.266-272, 2013 (SCI-Expanded)
- XV. **Continuous flow membrane-less air cathode microbial fuel cell with spunbonded olefin diffusion layer**  
TUĞTAŞ KARNABAT A. E., ÇAVDAR P., ÇALLI B.  
BIORESOURCETECHNOLOGY, vol.102, no.22, pp.10425-10430, 2011 (SCI-Expanded)
- XVI. **Acidogenic fermentation of municipal solid waste and its application to bio-electricity production via microbial fuel cells (MFCs)**  
ÇAVDAR P., YILMAZ E., Tugtas A. E., ÇALLI B.  
WATER SCIENCE AND TECHNOLOGY, vol.64, no.4, pp.789-795, 2011 (SCI-Expanded)
- XVII. **A Comprehensive Model of Simultaneous Denitrification and Methanogenic Fermentation Processes**  
TUĞTAŞ KARNABAT A. E., TEZEL U., PAVLOSTATHIS S. G.  
Biotechnology and Bioengineering, pp.98-108, 2010 (SCI-Expanded)
- XVIII. **Inhibitory Effects of Nitrate Reduction on Methanogenesis in the Presence of different Electron Donors**  
TUĞTAŞ KARNABAT A. E., PAVLOSTATHIS S. G.  
Water Science and Technology, pp.693-698, 2008 (SCI-Expanded)
- XIX. **Inhibitory Effects of Nitrogen Oxides on a Mixed Methanogenic Culture**  
TUĞTAŞ KARNABAT A. E., PAVLOSTATHIS S. G.  
Biotechnology and Bioengineering, pp.444-455, 2007 (SCI-Expanded)
- XX. **Effect of Sulfide on Nitrate Reduction in Mixed Methanogenic Cultures**

TUĞTAŞ KARNABAT A. E., PAVLOSTATHIS S. G.

Biotechnology and Bioengineering, pp.14481459, 2007 (SCI-Expanded)

**XXI. Electron Donor Effect on Nitrate Reduction Pathway and Kinetics in a Mixed Methanogenic Culture**

TUĞTAŞ KARNABAT A. E., PAVLOSTATHIS S. G.

Biotechnology & Bioengineering, pp.756-763, 2007 (SSCI)

**XXII. An Extension of the Anaerobic Digestion Model No 1 to Include the Effect of Nitrate Reduction Processes**

TUĞTAŞ KARNABAT A. E., TEZEL U., PAVLOSTATHIS S. G.

Water Science and Technology, pp.41-49, 2006 (SCI-Expanded)

## Books & Book Chapters

**I. Removal and Recovery of Metals by Using Bio-electrochemical System.**

Tuğtaş Karnabat A. E., Çallı B.

in: Microbial Fuel Cell A Bioelectrochemical System that Converts Waste to Watts, Debabrata Das, Editor, Springer-Verlag , New-York, pp.307-333, 2018

**II. Solid Waste Technology and Management**

AKKAYA E., DEMİR A., VARANK G., KARADAĞ D., ÖZKAYA B., BANAR M., TURAN N. G., AKÇA I., BÜYÜKKAMACI N., ERSES YAY A. S., et al.

Nobel, 2017

**III. Kompostlaştırma: Kütle Dengesi ve Ürün Kalitesi**

Tuğtaş Karnabat A. E.

in: Katı Atık Yönetimi ve Teknolojileri, Thomas H. Christensen (Çeviri Editörleri: Prof. Dr. Ahmet Demir ve Prof. Dr. Lütfi Akça), Editor, Nobel Yayın Dağıtım, Ankara, pp.569-582, 2017

## Refereed Congress / Symposium Publications in Proceedings

**I. Reduction of heavy metals from waste activated sludge via anaerobic fermentation and chemical post treatment for land application**

MOLAEY R., YEŞİL H., ÇALLI B., TUĞTAŞ KARNABAT A. E.

2020 11th International Conference on Environmental Science and Development, Barcelona, Spain, 10 - 12 February 2020

**II. Volatile Fatty Acid Recovery from Anaerobically Fermented Organic Wastes**

AYDIN S., YEŞİL H., TUĞTAŞ KARNABAT A. E.

9 th IWA Young Water Professionals, 24 - 27 May 2017

**III. Application of Pervaporation in Environmental Engineering VFA Separation via Commercial and Manufactured Membranes**

KÜLLÜ Ç., TANER H., YEŞİL H., TUĞTAŞ KARNABAT A. E.

ICS International Sustainability Congress, 1 - 03 December 2016

**IV. Separation of Volatile Fatty Acids from Leachate via TOA Impregnated Liquid Membranes**

YEŞİL H., TUĞTAŞ KARNABAT A. E.

Eurasia 2014 Waste Management Symposium, İstanbul, Turkey, 28 - 30 April 2014

**V. Anaerobic fermentation of organic solid wastes Volatile fatty acid production and separation**

YEŞİL H., TUĞTAŞ KARNABAT A. E., BAYRAKDAR A., ÇALLI B.

13th World Congress on Anaerobic Digestion, Santiago de Compostela, Spain, 25 - 28 June 2013

## Supported Projects

Tuğtaş Karnabat A. E., Çallı B., TUBITAK Project, Metal Separation and Recovery from Wastewater Treatment Plant Sludge through Anaerobic Bio-leaching and Membrane Separation Processes , 2017 - 2020  
Tuğtaş Karnabat A. E., Project Supported by Higher Education Institutions, Uçucu yağ asitlerinin kompozit pervaporasyon membranları ile sızıntı suyundan ayrılması, 2016 - 2017  
Tuğtaş Karnabat A. E., Çallı B., TÜBİTAK - AB COST Project, Yüksek Azot İçeren Organik Atıklardan Biyogaz Üretiminde İz Element İlavesi ve Amonyak Uzaklaştırma İşleminin Etkileri, 2014 - 2017  
Tuğtaş Karnabat A. E., Çallı B., Yeşil H., TUBITAK Project, Pervaporation Separation of Volatile Fatty Acids from Leachate Generated by a Leach-bed Reactor, 2012 - 2016  
Tuğtaş Karnabat A. E., Çallı B., Yeşil H., Project Supported by Higher Education Institutions, Organik Katı Atığın Anaerobik Fermentasyonu ile Üretilen Uçucu Yağ Asitlerinin Membran Kontaktör ile Sıvı Fazdan Ayrılması, 2013 - 2015  
Tuğtaş Karnabat A. E., Çallı B., TUBITAK Project, Biyo-elektrokimyasal sistemlerde sülfür (S<sup>2-</sup>) ve nitrat giderimi, 2013 - 2014

## Scientific Refereeing

WASTE MANAGEMENT, National Scientific Refreed Journal, March 2019  
DESALINATION, SCI Journal, March 2019  
WASTE MANAGEMENT, SCI Journal, February 2019  
WATER SCIENCE AND TECHNOLOGY, SCI Journal, December 2018  
WASTE MANAGEMENT, National Scientific Refreed Journal, October 2018  
INTERNATIONAL JOURNAL OF HYDROGEN ENERGY, SCI Journal, November 2017  
WATER SCIENCE AND TECHNOLOGY, SCI Journal, November 2017  
CHEMICAL ENGINEERING JOURNAL, SCI Journal, September 2017  
DOKUZ EYLÜL ÜNİVERSİTESİ MÜHENDİSLİK FAKÜLTESİ FEN VE MÜHENDİSLİK DERGİSİ, National Scientific Refreed Journal, April 2017  
WASTE MANAGEMENT, SCI Journal, April 2017  
WATER SCIENCE AND TECHNOLOGY, SCI Journal, December 2016  
BIORESOURCİ TECHNOLOGY, SCI Journal, May 2016  
WATER QUALITY RESEARCH JOURNAL OF CANADA, SCI Journal, May 2016  
WASTE MANAGEMENT, SCI Journal, April 2016  
BIOTECHNOLOGY FOR BIOFUELS, SCI Journal, November 2015  
CLEAN-SOIL AIR WATER, National Scientific Refreed Journal, May 2015  
WATER SCIENCE AND TECHNOLOGY, SCI Journal, July 2014  
BIOTECHNOLOGY FOR BIOFUELS, SCI Journal, July 2013  
WATER SCIENCE AND TECHNOLOGY, SCI Journal, November 2012  
WATER SCIENCE AND TECHNOLOGY, SCI Journal, October 2012  
JOURNAL OF CHEMICAL TECHNOLOGY AND BIOTECHNOLOGY, SCI Journal, October 2012  
BIOTECHNOLOGY AND BIOENGINEERING, SCI Journal, May 2012  
DESALINATION, SCI Journal, March 2012  
WATER SCIENCE AND TECHNOLOGY, SCI Journal, March 2012

## Metrics

Publication: 31  
Citation (WoS): 588  
Citation (Scopus): 651  
H-Index (WoS): 15  
H-Index (Scopus): 18

## **Non Academic Experience**

The University of Queensland, AWMC

TÜBİTAK MAM

Georgia Institute of Technology