

CURRICULUM VITAE

ADILE EVREN TUGTAS, PhD

ADDRESS

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EDUCATION

Ph.D.: Major, Civil and Environmental Engineering; Minor, Geomicrobiology; **Georgia Institute of Technology**, Atlanta, Georgia, USA, 2007 (Advisor: Dr. Spyros G. Pavlostathis)
Thesis title: Effect of nitrate reduction on the methanogenic fermentation: Process interactions and modeling.
M.S.: Environmental Engineering, **Georgia Institute of Technology**, Atlanta, Georgia, USA, 2005 (Advisor: Dr. Spyros G. Pavlostathis)
B.S.: Environmental Engineering, **Marmara University**, Istanbul, Turkey, 2001 (Advisor: Dr. Mehmet Ali Yükselen)

PROFESSIONAL APPOINTMENTS

11/2011–	Assist. Prof.	Marmara University Environmental Engineering Department Istanbul, Turkey
09/2010 – 11/2011	Postdoctoral Researcher	Marmara University MEBIG Environmental Biotechnology Group, Istanbul, Turkey
09/2009 – 07/2010	Postdoctoral Researcher	The University of Queensland Advanced Water Management Centre, Brisbane, Australia
09/2008-09/2009	Faculty	Bahcesehir University, Istanbul, Turkey

2007-2008	Researcher	The Scientific and Technological Research Council of Turkey (TUBITAK), Marmara Research Center, Kocaeli, Turkey
2002-2007	Ph.D. student/Graduate Research Assistant	Georgia Institute of Technology, Atlanta, GA, USA

RESEARCH INTERESTS AND EXPERTISE

- Biological treatment of industrial and municipal wastewater
- Fermentative and methanogenic processes
- Nitrate reduction processes
- Simultaneous carbon, nitrogen, sulfur removal technologies
- Microbial interactions in mixed treatment systems
- Kinetics and modeling of treatment processes
- Sewer Processes
- Bio-electrochemical Processes
- Separation of commodity chemicals via membranes

PROFESSIONAL ACTIVITIES & SERVICE

A. Editorial Boards

Water Quality, Exposure and Health (WQEH) Associate Editor (2013 -)

B. Reviews (Manuscripts)

Clean Soil, Air, Water

Water Environment Research

Journal of Chemical Technology & Biotechnology

Desalination

Water Science and Technology

Biotechnology for Biofuels

Biotechnology and Bioengineering

Waste Management

Chemical Engineering Journal

Bioresource Technology

MEMBERSHIPS

American Chemical Society (2008-present)

International Water Association (2007-present)

TEACHING

Bahcesehir University

Unit Operations and Processes

(Undergraduate)

Solid Waste Management	(Undergraduate)
Contemporary Environmental Issues	(Undergraduate – Elective)
Marmara University	
Unit Operations	(Undergraduate)
Unit Processes	(Undergraduate)
Introduction to Computing	(Undergraduate)
Solid Waste Management	(Undergraduate)
Anaerobic Treatment	(Undergraduate – Elective)

RESEARCH SUPERVISION

A. MS Students

1. Yesil H. “Anaerobic Fermentation of Organic Solid Wastes: Volatile Fatty Acid Production and Separation”, Marmara University, 2013
2. Taner H. “Separation of Volatile Fatty Acids via Pervaporation”, Marmara University 2016
3. Aydın S. “Effect of Operational Parameters on Volatile Fatty Acid Separation from Anaerobic Fermentation Broths via Microporous Flat Sheet Membrane Contactors”, Marmara University, 2018
4. Ortakci S. “Tavuk atığı içerisindeki amonyağın membran kontaktör ve fitoremediasyon yöntemleri ile uzaklaştırılması.”, Marmara University, 2018
5. Kullu C. “Separation of Volatile Fatty Acids from Leachate via Composite Pervaporation Membranes”, Marmara University, 2018

B. Undergraduate Students

1. Akgul I., Kayir H., Avci S., Cinar D. “Uçucu Yağ Asitlerinin Sıvı Ortamdan Ayrılması için Membran Kontaktörlerin Kullanımı”, 2013, Lisans projesi TUBITAK 2209 ile desteklenmiştir.
2. Hashas A., Sekizelma İ., Ejderoglu K., Koc S. “Separation of Volatile Compounds via Polymeric Membranes”, 2015
3. Ozkan A. E., Temiz İ., Danyal S. “Volatile Fatty Acid Production and Modelling”, 2018

HONORS & AWARDS

Graduated ranking first from Marmara University (2001)

PUBLICATIONS

A. BOOK CHAPTER

1. Tugtas, A. E., & Çalli, B. (2018). Removal and Recovery of Metals by Using Bio-electrochemical System. In Microbial Fuel Cell (pp. 307-333). Springer, Cham.

B. BOOK CHAPTER TRANSLATION

1. Tugtas A. E. (2017) Kompostlaştırma. Katı Atık Yönetimi ve Teknolojileri (569-582). Nobel, Ankara

C. REFEREED JOURNAL PUBLICATIONS (INTERNATIONAL)

D.

1. Aydin S., Yesil H., **Tugtas A.E.** (2018). Recovery of mixed volatile fatty acids from anaerobically fermented organic wastes by vapor permeation membrane contactors. *Bioresource technology*, 250 (548-555).

2. Liu Y. W., **Tugtas A. E.**, Sharma K. R., Ni B. J. and Yuan Z. G. (2016). Sulfide and methane production in sewer sediments: Field survey and model evaluation. *Water Research* **89**, 142-50.

3. **Tugtas A.E.**. 2014 Recovery of volatile fatty acids via membrane contactor using flat membranes: Experimental and theoretical analysis. *Waste Management*, 34:1171-1178

4. H.Yesil, **Tugtas A.E.**, A.Bayrakdar, B.Calli. 2014. Anaerobic fermentation of organic solid wastes: volatile fatty acid production and separation. *Water Science and Technology* 69(10): 2132-2138.

5. **Tugtas AE.** , Cavdar P., and Calli B. 2013. Bio-electrochemical post-treatment of anaerobically treated landfill leachate. *Bioresource Technology* 128:266-272

6. **Tugtas AE.** , Cavdar P., and Calli B. 2011. Continuous flow membrane-less air cathode microbial fuel cell with spunbonded olefin diffusion layer. *Bioresource Technology* 102:10425-10430.

7. Cavdar P., Yilmaz E., **A. E. Tugtas**, Calli B. 2011. Acidogenic Fermentation of Municipal Solid Waste and its Application to Bio-Electricity Production via Microbial Fuel Cells (MFCs). *Water Science and Technology*. 64(4):789-795.

8. **Tugtas A.E.**, U. Tezel, and S. G. Pavlostathis. 2010. A Comprehensive Model of Simultaneous Denitrification and Methanogenic Fermentation Processes. *Biotechnology & Bioengineering* 105(1):98-108.

9. **Tugtas, A. E.**, and S. G. Pavlostathis. 2008. Inhibitory Effects of Nitrate Reduction on Methanogenesis in the Presence of different Electron Donors. *Water Science & Technology* 57(5):693-698.

10. **Tugtas A.E.**, and S. G. Pavlostathis. 2007. Electron Donor Effect on Nitrate Reduction Pathway and Kinetics in a Mixed Methanogenic Culture. *Biotechnology & Bioengineering* 98 (4):756-763.

11. **Tugtas A.E.**, and S. G. Pavlostathis. 2007. Effect of Sulfide on Nitrate Reduction in Mixed Methanogenic Cultures. *Biotechnology & Bioengineering* 97 (6):1448-1459.

12. **Tugtas, A. E.**, and S. G. Pavlostathis. 2007. Inhibitory Effects of Nitrogen Oxides on a Mixed Methanogenic Culture. *Biotechnology & Bioengineering* 96 (3):444-455.

13. **Tugtas, A. E.**, U. Tezel, and S. G. Pavlostathis. 2006. An Extension of the Anaerobic Digestion Model No. 1 to Include the Effect of Nitrate Reduction Processes. *Water Science & Technology* 54(4):41-49.

E. REFEREED JOURNAL PUBLICATIONS (NATIONAL)

14. **Tugtas, A. E.**, Kasikci K., Calli B. 2011. Calculation of the amount of ammonia volatilization during biological leachate treatment. *Fen Bilimleri Dergisi*. 23(1):12-20. ISSN: 2146-5150

15. **Tugtas, A. E.** 2011. Fermentative organic acid production and removal. *Fen Bilimleri Dergisi* 23(2):70-82. ISSN: 2146-5150

F. CONFERENCE AND WORKSHOP PROCEEDINGS (INTERNATIONAL)

1. Aydin S., Yesil H., **Tugtas, A. E.** “Volatile Fatty Acid Recovery from Anaerobically Fermented Organic Wastes”, 9th Eastern European Young Water Professionals Conference, Budapesht, Hungary, 24-27 Mayıs 2017

2. Kullu C, Taner H., Yesil H., **Tugtas, A. E.** “Application of Pervaporation in Environmental Engineering: VFA Separation via Commercial and Manufactured Membranes”, International Sustainability Conference, İstanbul, Türkiye, 1-3 Aralık 2016

3. Yesil H., **Tugtas, A. E.**, Bayrakdar A. and B. Calli. “Anaerobic Fermentation of Organic Solid Wastes: Volatile Fatty Acid Production and Separation”, 13th World Congress on Anaerobic Digestion, Santiago de Compostela, Spain, June 2013

4. Cavdar P, Yilmaz E, **Tugtas, A. E.**, and B. Calli. “Acidogenic Fermentation of Municipal Solid Waste and its Application to Bio-electricity Production via Microbial Fuel Cells (MFCs)”, 12th World Congress on Anaerobic Digestion: Water and Energy for the World, Guadalajara, Mexico, October 2010.

5. **Tugtas, A. E.**, and S. G. Pavlostathis. “Inhibitory effects of nitrate reduction on methanogenesis in the presence of different electron donors”, 11th World Congress on Anaerobic Digestion: Bioenergy for our Future, Brisbane, Australia, September 2007.

6. **Tugtas, A. E.**, U. Tezel, and S. G. Pavlostathis. “An Extension of the Anaerobic Digestion Model No. 1 to Include the Effect of Nitrate Reduction Processes,” The First International Workshop on the IWA Anaerobic Digestion Model No. 1 (ADM1), Copenhagen, Denmark, September 2005.

G. CONFERENCE AND WORKSHOP PROCEEDINGS (NATIONAL)

1. **Tugtas A.E.**, Cavdar P., Calli B. 2010. “Evsel Katı Atıklardan Anaerobik Fermentasyon ile Organik Asit Üretimi”. Organik Atıklardan Kompost ve Yenilenebilir Enerji Üretimi & Kompostun Kullanım Alanları Çalıştayı. ORAK 2010, Istanbul, Turkey. 08-09 June 2010. pp 103-110.

H. CONFERENCE PRESENTATIONS WITHOUT PROCEEDINGS

1. Calli B, P. Cavdar, **A. E. Tugtas**. “Bio-electrochemical Post-treatment of Anaerobically Treated Landfill Leachate. 3rd International Microbial Fuel Cell Conference Wetsus, Leeuwarden, The Netherlands, 6-8 June 2011 (poster).

2. **Tugtas, A. E.**, and S. G. Pavlostathis. “Effect of Sulfide on Nitrate Reduction in a Mixed Methanogenic Culture,” Environmental Systems Microbiology Symposium, Atlanta, GA, 30 March 2006 (poster).

3. **Tugtas, A. E.**, and S. G. Pavlostathis. “Effect of Nitrate Reduction on the Anaerobic Digestion Process,” Industrial Conference & Expo, Georgia Association of Water Professionals, Atlanta, GA, 15-16 March 2006.

4. **Tugtas, A. E.**, and S. G. Pavlostathis. “Sulfide Exacerbates the Inhibitory Effect of Nitrate Reduction on Methanogenesis,” 105th General Meeting, American Society for Microbiology, Atlanta, GA, June 2005 (poster).

I. REPORTS

1. Pavlostathis, S. G., U. Tezel, **A. E. Tugtas**, R. W. Wallace, J. A. Pierson. 2007. Cold Treatment of Raw Secondary Poultry Nutrient for Improved Dewatering, Storage, and Quality. Final Report – Project No. R60; US Poultry & Egg Association, Poultry Protein & Fat Council, Tucker, GA.

PROJECTS

2017-2020: **Metal Separation and Recovery from Wastewater Treatment Plant Sludge through Anaerobic Bio-leaching and Membrane Separation Processes**

PROJECT LEADER: Dr. A. Evren Tugtas

FUNDING AGENCY: TUBITAK

PROJECT NO: 116Y227

BUDGET: 490813 TL

2016-2017: **Separation of Volatile Fatty Acids from Leachate via Composite Pervaporation Membranes**

PROJECT LEADER: Dr. A. Evren Tugtas
FUNDING AGENCY: Marmara Üniversitesi Bilimsel Araştırma Projeleri
PROJECT NO: FEN-C-YLP-110316-0102
BUDGET: 14,998.98 TL

2014-2017: The effects of trace element supplementation and ammonia removal on biogas production from nitrogen rich organic wastes.

PROJECT LEADER: Dr. B. Çallı
FUNDING AGENCY: TUBITAK
PROJECT NO: 113Y333
BUDGET: 456714 TL

2013-2015: Anaerobic Fermentation of Organic Solid Waste: Volatile Fatty Acid Separation from the liquid phase via Membrane Contactors

PROJECT LEADER: Dr. A. Evren Tugtas
FUNDING AGENCY: Marmara University Research Fund
PROJECT NO: FEN-A-100413-0126
BUDGET: 49734.64 TL

2013-2014: Removal of sulfide and nitrate in bio-electrochemical systems.

PROJECT LEADER: Dr. Baris Calli
FUNDING AGENCY: TUBITAK
PROJECT NO: 112Y390
BUDGET: 30000.00 TL

2012 – 2015: Pervaporation Separation of Volatile Fatty Acids from Leachate Generated by a Leach-bed Reactor.

PROJECT LEADER: Dr. A. Evren Tugtas
FUNDING AGENCY: The Scientific and Technological Research Council of Turkey (TUBITAK)
PROJECT NO: 112Y218
BUDGET: 311455 TL

2012 – 2014: Fabrication of Nanoparticle Embedded Polymeric Membranes for water and Wastewater Treatment: Investigation of Nanoparticle Release

PROJECT LEADER: Dr. Elif Soyer
FUNDING AGENCY: The Scientific and Technological Research Council of Turkey (TUBITAK)
PROJECT NO: 112Y064

2010 – 2012: Organic Acid Production from Bio-Waste via Anaerobic Fermentation.

FUNDING AGENCY: The Scientific and Technological Research Council of Turkey (TUBITAK)
FUNDING TYPE: 2218 – Postdoctoral Research Grant

09/2009 – 07/2010: **Optimal Management of Corrosion and Odor Problems in Sewer Systems (LP0882016)**. Project Leader: Dr. Zhiguo Yuan,
Subproject: SP8, Model-based tool for decision support for technology selection, prioritization and optimization. Sub-Project Leader: Dr. Keshab Sharma
FUNDING AGENCY: Australian Research Council

2002-2007: **PhD Thesis: Effect of nitrate reduction on the methanogenic fermentation: Process interactions and modeling.**
FUNDING AGENCY: Georgia Tech Internal Funding