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Contact Information

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Qualifications:

2003 – 2007 Environmental Engineering, Faculty of Engineering, Harran University, Sanliurfa, Turkey (BSc)

2007 – 2009 Environmental Engineering, Institute of Graduate Studies in Pure and Applied Sciences, Harran University, Sanliurfa, Turkey (MSc)

Thesis Title: Biological Metal Removal in Anaerobic Baffled Reactor

2012 – present Environmental Engineering, Institute of Graduate Studies in Pure and Applied Sciences, Marmara University, Istanbul, Turkey (PhD)

Thesis Title: Anaerobic Chicken Manure Digestion Coupled with Ammonia Separation.

Working Experiences:

2010 – 2011 Lecturer, Environmental Pollution Control Department, Bozova Vocational School, Harran University Sanliurfa / Turkey

2011 – 2012 Research Assistant, Environmental Engineering Department, Faculty of Engineering and Architecture, Necmettin Erbakan University, Konya, Turkey

2012 – present Research Assistant, Environmental Engineering Department, Faculty of Engineering, Marmara University, Istanbul, Turkey

Projects:

1. Treatment of Acidic Mine Drainage (AMD) by Sulfate Reducing Bacteria and Metal Recovery. Scholar, 2008-2009, Scientific & Technological Research Council of Turkey, TUBITAK project No:108Y036.

2. Pervaporation separation of volatile fatty acids from leachate generated by a leach-bed reactor. Scholar, 2012-2013, Scientific & Technological Research Council of Turkey, TUBITAK project No:112Y2018.
3. Comparison of simultaneous nitrate and sulfide removal performance of microbial fuel cell (MFC) and fixed bed reactor. Researcher, 2013-2015, Marmara University Scientific Research Committee, BAPKO Project No: FEN-A-100713-0323.
4. The effects of trace element supplementation and ammonia removal on biogas production from nitrogen rich organic wastes. Scholar, 2013-2016, Scientific & Technological Research Council of Turkey, TUBITAK project No:113Y333.
5. European Network on Ecological Functions of Trace Metals in Anaerobic Biotechnologies. Work Group Member, 2013-2017, COST Action, ES1302.

List of Publications:

Papers in SCI journals

1. **Bayrakdar A.**, Sahinkaya E., Gungor M., Uyanik S., & Atasoy A. D. (2009). Performance of sulfidogenic anaerobic baffled reactor (ABR) treating acidic and zinc-containing wastewater. *Bioresource Technology*, 100(19), 4354-4360.
2. Sahinkaya E., Gungor M., **Bayrakdar A.**, Yucesoy Z., Uyanik S. (2009). Separate recovery of copper and zinc from acid mine drainage using biogenic sulfide. *Journal of hazardous materials*, 171(1), 901-906.
3. Yesil H., Tugtas A. E., **Bayrakdar A.**, & Calli B. (2014). Anaerobic fermentation of organic solid wastes: volatile fatty acid production and separation. *Water Science and Technology*, 69(10), 2132-2138.
4. **Bayrakdar A.**, Tilahun E., Calli B. (2016). Biogas desulfurization using autotrophic denitrification process. *Applied microbiology and biotechnology*, 100(2), 939-948.
5. **Bayrakdar A.**, Molaey R., Sürmeli R. Ö., Sahinkaya E., Çalli B. (2017). Biogas production from chicken manure: Co-digestion with spent poppy straw. *International Biodeterioration & Biodegradation*, 119, 205-210.
6. Tilahun E., **Bayrakdar A.**, Sahinkaya E., Çalli B. (2017). Performance of polydimethylsiloxane membrane contactor process for selective hydrogen sulfide removal from biogas. *Waste Management*, 61, 250-257.
7. Sürmeli R. O., **Bayrakdar A.**, Çalli B. (2017). Removal and recovery of ammonia from chicken manure. *Water Science and Technology*, wst2017116.
8. **Bayrakdar A.**, Sürmeli R. O. Çalli B. (2017). Dry anaerobic digestion of chicken manure coupled with membrane separation of ammonia. *Bioresource Technology*, 244, 816-823

9. Sürmeli R.Ö., **Bayrakdar A.**, Molaey R., Çalli B. Effect of Sulfide on Anaerobic Digestion of Chicken Manure at High Ammonia Concentrations. Waste and Biomass Valorization (Accepted)
10. Molaey R., **Bayrakdar A.**, Sürmeli R.Ö., Çalli B. Anaerobic Mono-Digestion of Chicken Manure: Mitigating Process Inhibition at High Ammonia Concentrations by Selenium Supplementation. Biomass and Bioenergy (Under review).
11. Molaey R., **Bayrakdar A.**, Sürmeli R. Ö., Calli B. Influence of trace element supplementation on anaerobic digestion of chicken manure: linking process stability to methanogenic population dynamics (Submitted to Journal of Cleaner Production).
12. Sürmeli R. Ö., **Bayrakdar A.**, Calli B. Ammonia Recovery from Anaerobically Digested Chicken Manure Using PDMS Membrane Contactor (Submitted to Journal of Cleaner Production).
13. Sürmeli R. Ö., **Bayrakdar A.**, Calli B. Air Drying of Dewatered Biogas Digestate and the use of Dried Product as Bulking Agent (Submitted to Water, Air, & Soil Pollution).
14. **Bayrakdar A.**, Sürmeli R. Ö., Calli B. High solid chicken manure digestion in leach bed reactors (In preparation)

Presentations in International Conferences:

1. Uyanik S., **Bayrakdar A.**, Sahinkaya E., Gungor M. Metal recovery from acid mine drainage by sulfidogenic anaerobic baffled reactor. AMIREG 2009-Towards sustainable development: Assessing the footprint of resource utilization and hazardous waste management, September 7-9, 2009, Athens, Greece. (Oral Presentation)
2. Sahinkaya, E., Gungor M., **Bayrakdar A.**, Yücesoy Z., Uyanik S., Yesilnacar M.I. A Model Based Optimization Study with OLI Stream Analyzer for Separate Metal Recovery from Acid Mine Drainage. AMIREG 2009-Towards sustainable development: Assessing the footprint of resource utilization and hazardous waste management, September 7-9, 2009, Athens, Greece. (Oral Presentation)
3. Yesil H., Tugtas, A.E., **Bayrakdar A.**, and Calli, B. Anaerobic fermentation of organic solid wastes: volatile fatty acid production and separation. 13th World Congress on Anaerobic Digestion, June 25-28, 2013, Santiago de Compostela, Spain. (Oral Presentation)
4. **Bayrakdar A.**, Sahinkaya E., Calli B. Anaerobic co-digestion of chicken manure and spent poppy straw. Biogas Science, October 26-30, 2014, Vienna, Austria. (Oral Presentation)
5. Molaey R., Sürmeli R.O., **Bayrakdar A.**, Sahinkaya E., Calli B. (2014) Biogas production from chicken manure: co-digestion with poppy straw. 5th International symposium on energy from biomass and waste, November 17-20, 2014, Venice, Italy. (Poster Presentation)

6. **Bayrakdar A.**, Tilahun E., Calli B. Hydrogen sulfide removal from biogas by autotrophic denitrification. 5th International symposium on energy from biomass and waste, November 17-20, 2014, Venice, Italy. (Oral Presentation)
7. Sürmeli R. Ö., **Bayrakdar A.**, Molaey R., Calli B. Removal and Recovery of Ammonia from Chicken Manure: Improving Bio-methane Potential. IWA 7th Eastern European Young Water Professionals Conference, September 17-19, 2015, Belgrade, Serbia. (Oral Presentation)
8. Sürmeli R. Ö., **Bayrakdar A.**, Molaey R., Calli B. Ammonia Removal from Chicken Manure. The International Conference on Civil and Environmental Engineering, ICOCEE, May 20-23, 2015, Cappadocia, Turkey. (Poster Presentation)
9. Molaey R., **Bayrakdar A.**, Sürmeli R. Ö., Calli B. Effect of Trace Metal Supplementation in Anaerobic Digestion of Chicken Manure. The International Conference on Civil and Environmental Engineering, ICOCEE, May 20-23, 2015, Cappadocia, Turkey. (Oral Presentation)
10. Tilahun E., **Bayrakdar A.**, Şahinkaya E., Çalli B. A novel membrane technology for selective hydrogen sulfide removal from biogas. EuroAsia Waste Management Symposium, May 2-4, 2016, Istanbul/Turkey. (Oral Presentation)
11. Sürmeli R. Ö., **Bayrakdar A.**, Calli B. Separation of ammonia from anaerobically digested chicken manure via PDMS membrane contactor. 3rd International Conference on Recycling and Reuse, September 28-30, 2016, Istanbul, Turkey. (Oral Presentation)
12. **Bayrakdar A.**, Sürmeli R. Ö., Calli B. (2016) Mono digestion of chicken manure. 3rd International Conference on Recycling and Reuse, September 28-30, 2016, Istanbul, Turkey. (Oral Presentation)
13. Sürmeli R. Ö., **Bayrakdar A.**, Molaey R., Çalli B. Effect of sulfide on anaerobic digestion of chicken manure at high ammonia concentrations. 1st International ABWET Conference: Waste-to-bioenergy: Applications in Urban Areas, January 19-20, 2017, Paris, France. (Oral Presentation)
14. Tilahun E., **Bayrakdar A.**, Şahinkaya E., Çalli B. A novel membrane bio-scrubbing system for hydrogen sulfide removal from biogas. 1st International ABWET Conference: Waste-to-bioenergy: Applications in Urban Areas, January 19-20, 2017, Paris, France. (Oral Presentation)
15. **Bayrakdar A.**, Molaey M., Sürmeli R.Ö., Çalli B. Bio-methane Potential of Tannery wastes. 5th International Conference on Sustainable Solid Waste Management, June 21-24, 2017, Athens, Greece. (Poster presentation)
16. Sürmeli R.Ö., **Bayrakdar A.**, Çalli B. Air Drying of Dewatered Biogas Digestate and the use of Dried Product as Bulking Agent. 5th International Conference on Sustainable Solid Waste Management, June 21-24, 2017, Athens, Greece. (Oral presentation)

Presentations in National Conferences:

1. **Bayrakdar A.**, Sürmeli R.Ö., Çallı B. Membran kontaktörle anaerobic çürütücü çıkış suyundan amonyak geri kazanımı. 5.Ulusal Membran Teknolojileri ve Uygulama Sempozyumu, September 21-23, 2017, İstanbul, Türkiye.

Teaching Activities (as Teaching Assistant):

- Environmental Engineering Microbiology, ENVE 303 (2012-present)
- Solid Waste Engineering, ENVE 330 (2012-present)
- Engineering Hydraulics, ENVE 204 (2014-present)
- Introduction to Computing, CSE 123 (2013-2015)
- Environmental Engineering Chemistry II (2013-2015)
- Basic Fluid Mechanics, ENVE 262 (2014-2016)
- Hazardous and Special Waste Management, ENVE 430 (2012-2014)