

Curriculum Vitae

ÇAĞRI AKYOL, PhD

Marche Polytechnic University
Department of Science and Engineering of Materials,
Environment and Urban Planning-SIMAU
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BIOGRAPHY

Place of Birth: Istanbul
Date of Birth: 08.04.1987

Education

- Ph.D.:* Boğaziçi University, 2019, Institute of Environmental Sciences
GPA: 3.56/4.00
Marche Polytechnic University, 2018, Department of Science and Engineering of Materials, Environment and Urban Planning-SIMAU
Visiting Researcher
- M.Sc.:* Boğaziçi University, 2013, Institute of Environmental Sciences
GPA: 3.90/4.00
- B.Sc.:* Yıldız Technical University, 2010, Department of Environmental Engineering
GPA: 2.68/4.00
- High school:* Cağaloğlu Anadolu Lisesi, 2005
GPA: 4.22/5.00

Professional Records

- July 2019 – On going:* Researcher
Department of Science and Engineering of Materials, Environment and Urban Planning-SIMAU, Marche Polytechnic University
- September 2014 – February 2019:* Research assistant
Institute of Environmental Sciences, Boğaziçi University

Awards&Grants

Award for the best poster presentation in 2nd IWA Specialized International Conference “Ecotechnologies for Wastewater Treatment (EcoSTP2014)” Verona, Italy 23-27 June 2014.

European Community Action Scheme for the Mobility of University Students (Erasmus) scholarship - Univerzita Jana Evangelisty Purkyně, Department of Environment, Usti nad Labem, Czech Republic (September 2008 – February 2009).

RESEARCH TOPICS

- Microbial ecology of biogas reactors
- Bioenergy systems and waste to energy
- Bioaugmentation and pre-treatment strategies during anaerobic digestion
- Fate and behavior of antibiotics in anaerobic digestion systems
- Composting applications
- Environmental metagenomics
- Occurrence and effects of microplastics in wastewater treatment plants
- Resource recovery from wastewater

PROJECTS

EU Funded Projects

- H2020 Project Grant Agreement No.689341 - Innovative cycles of recovery and enhancement of water flows in Mediterranean area (INTCATCH)
Project position: Researcher (2019 - On going)
- H2020 (PRIMA) Project Grant Agreement No.1823 - Safe and sustainable solutions for the integrated use of non-conventional water resources in the mediterranean agricultural sector (FIT4REUSE)
Project position: Researcher (2019 - On going)
- ENI-CBCMED Project Grant Agreement No. A_B.4.2_0095 - Decentralised composting in small towns (DECOST)
Project position: Researcher (2019 - On going)
- WATER JPI Project - Supporting tools for the integrated management of drinking water reservoirs contaminated by Cyanobacteria and cyanotoxins (BLOOWATER)
Project position: Researcher (2019 - On going)
- EU LIFE Project - BLUE LAKES
Project position: Researcher (2019 - On going)

The Scientific and Technological Research Council of Turkey (TUBITAK) Projects

- 115Y597 - Determination of biochemical methane potentials and microbial community dynamics during anaerobic co-digestion of commonly cultivated cereal crops and cow manure, composting of the digestates, and investigation of the effect of final products on the ecosystem
Project position: Scholar (2016-2019)
- 113Y451 - Improvement of biomethane potential of anaerobic digesters using specific rumen bacteria and hydrolytic enzymes
Project position: Scholar (2014-2015)
- 111Y018 - Microbial products and metal inhibition in biological systems
Project position: Scholar (2013-2014)
- 109Y275 - Effects of a commonly used veterinary antibiotic on biogas production in anaerobic digestion systems and its fate in receiving environments
Project position: Scholar (2011-2012)

Boğaziçi University Research Fund Projects

- 14456 - Pretreatment of corn stover and macroalgae with Ca-alginate beads entrapped with *Trametes versicolor* to enhance methane production
Project position: Researcher (2018-2019)
- 13381 - Mechanistic investigation on photocatalytic destruction of pathogenic bacteria
Project position: Researcher (2017-2018)
- 13081 - The effect of nanoparticles on the behavior of the methanogenic community during waste stabilization phases in simulated landfills
Project position: Researcher (2017-2018)
- 11262 - Enhancement of biomethane production of anaerobic digesters using rumen fluid of cattle
Project position: Researcher (2016-2017)
- 8720 - Determination of the effect of hydrolytic enzyme addition on acidification and biomethane production in two-phase anaerobic digestion of oxytetracycline-medicated cattle manure
Project position: Researcher (2014-2015)

INTERNATIONAL REFEREED JOURNAL PUBLICATIONS

Foglia, A., **Akyol, Ç.**, Frison, N., Katsou, E., Eusebi, A.L., Fatone, F., 2019. Long-term operation of a pilot-scale anaerobic membrane bioreactor (AnMBR) treating high salinity low loaded municipal wastewater in real environment. *Separation and Purification Technology*, 116279.

Palmieri, S., Cipolletta, G., Pastore, C., Giosuè, C., **Akyol, Ç.**, Eusebi, A.L., Frison, N., Tittarelli, F., Fatone, F., 2019. Pilot scale cellulose recovery from sewage sludge and reuse in building and construction material. *Waste Management*, 100, 208-218.

Akyol, Ç., Foglia, A., Ozbayram, E.G., Frison, N., Katsou, E., Eusebi, A.L., Fatone, F., 2019. Validated innovative approaches for energy- efficient resource recovery and re-use from municipal wastewater: From anaerobic treatment systems to a biorefinery concept. *Critical Reviews in Environmental Science and Technology*, doi: 10.1080/10643389.2019.1634456

Akyol, Ç., Ozbayram, E.G., Demirel, B., Onay, T.T., Ince, O., Ince, B., 2019. Linking nano-ZnO contamination to microbial community profiling in sanitary landfill simulations. *Environmental Science and Pollution Research*, 26, 13580-13591.

Akyol, Ç., Ince, O., Ince, B., 2019. Crop-based composting of lignocellulosic digestates: Focus on bacterial and fungal diversity. *Bioreseource Technology*, 288, 121549.

Akyol, Ç., Ince, O., Bozan, M., Ozbayram, E.G., Ince, B., 2019. Biological pretreatment with *Trametes versicolor* to enhance methane production from lignocellulosic biomass: A metagenomic approach. *Industrial Crops & Products*, 140, 111659.

Akyol, Ç., Ince, O., Bozan, M., Ozbayram, E.G., Ince, B., 2019. Fungal bioaugmentation of anaerobic digesters fed with lignocellulosic biomass: What to expect from anaerobic fungus *Orpinomyces* sp. *Bioreseource Technology*, 277, 1-10.

Ince, O., **Akyol, Ç.**, Ozbayram, E.G., Tural, B., Ince, B., 2019. Enhancing methane production from anaerobic co-digestion of cow manure and barley: Link between process parameters and microbial community dynamics. *Environmental Progress & Sustainable Energy*, doi:10.1002/ep.13292

Ince, O., Ozbayram, E.G., **Akyol, Ç.**, Erdem, E.I., Gunel, G., Ince, B., 2018. Bacterial succession in the thermophilic phase of composting of anaerobic digestates. *Waste and Biomass Valorization*, doi:10.1007/s12649-018-0531-3

Ozbayram, E.G., **Akyol, Ç.**, Ince, B., Karakoç, C., Ince, O., 2018. Rumen bacteria at work: Bioaugmentation strategies to enhance biogas production from cow manure. *Journal of Applied Microbiology*, 124, 491-502.

Öner, B.E., **Akyol, Ç.**, Bozan, M., Ince, O., Aydın, S., Ince, B., 2018. Bioaugmentation with *Clostridium thermocellum* to enhance the anaerobic biodegradation of lignocellulosic agricultural residues. *Bioresource Technology*, 249, 620-625.

Turker, G., **Akyol, Ç.**, Ince, B., Aydın, S., Ince, B., 2018. Operating conditions influence microbial community structures, elimination of the antibiotic resistance genes and metabolites during anaerobic digestion of cow manure in the presence of oxytetracycline. *Ecotoxicology and Environmental Safety*, 147, 349-356.

Bozan, M., **Akyol, Ç.**, Ince, O., Aydın, S., Ince, B., 2017. Application of next-generation sequencing methods for microbial monitoring of anaerobic digestion of lignocellulosic biomass. *Applied Microbiology and Biotechnology*, 101, 6849-6864.

Yangin-Gomec, C., Pekyavaş, G., Sapmaz, T., Aydın, S., Ince, B., **Akyol, Ç.**, Ince, O., 2017. Microbial monitoring of ammonia removal in a UASB reactor treating pre-digested chicken manure with anaerobic granular inoculum. *Bioresource Technology*, 241, 332-339.

Akyol Ç., Aydın S., Ince O., Ince B., 2016. A comprehensive microbial insight into single-stage and two-stage anaerobic digestion of oxytetracycline-medicated cattle manure. *Chemical Engineering Journal*, 303: 675-684.

Turker G., Aydın S., **Akyol Ç.**, Yenigun O., Ince O, Ince B., 2016. Changes in microbial community structures due to varying operational conditions in the anaerobic digestion of oxytetracycline-medicated cow manure. *Applied Microbiology and Biotechnology*, 100: 6469-6479.

Coban H., Ertekin E., Ince O., Turker G., **Akyol Ç.**, Ince B., 2016. Degradation of oxytetracycline and its impacts on biogas producing microbial community structure. *Bioprocess and Biosystems Engineering*, 39: 1051-1060.

Ince O., Ozbayram E.G., **Akyol Ç.**, Ince, Ö., Ince, B., 2016. Composting Practice for Sustainable Waste Management: A Case Study in Istanbul. *Desalination and Water Treatment*, 57: 14473-14477.

Akyol Ç., Ozbayram E.G., Ince O., Kleinstaub S., Ince B., 2016. Anaerobic co-digestion of cow manure and barley: effect of cow manure to barley ratio on methane production and digestion stability. *Environmental Progress & Sustainable Energy*, 35(2): 589-595.

Akyol Ç., Turker G., Ince O., Ertekin E., Üstüner O., Ince B., 2016. Performance and microbial community variations in thermophilic anaerobic digesters treating OTC medicated cow manure under different operational conditions. *Bioresource Technology*, 205: 191-198.

Akyol Ç., Ince O., Cetecioglu Z., Alkan F.U., Ince B., 2016. The fate of oxytetracycline in two-phase and single-phase anaerobic cattle manure digesters and its effects on microbial communities. *Journal of Chemical Technology and Biotechnology*, 91: 806-814.

Akyol Ç., Demirel B., Onay T.T., 2015. Recovery of methane from tannery sludge: the effect of inoculum to substrate ratio and solids content. *Journal of Materials Cycle and Waste Management*, 17: 808-815.

Akyol Ç., Ince B., Coban H., Koksel G., Cetecioglu Z., Ayman Oz N., Ince O., 2015. Individual and combined inhibitory effects of methanol and toluene on acetyl-CoA synthetase expression level of acetoclastic methanogen, *Methanosaeta concilii*. *International Biodeterioration & Biodegradation*, 105: 233-238.

Sakarya F.K., **Akyol Ç.**, Demirel B., 2015. The effect of short-term exposure of engineered nanoparticles on methane production during the anaerobic digestion of primary sludge. *Water, Air & Soil Pollution*, 226:100: 1-9.

Akyol Ç., Ince O., Türker G., Ince B., 2014. Acidification of non-medicated and oxytetracycline-medicated cattle manures during anaerobic digestion. *Environmental Technology*, 35(18): 2373-2379.

NATIONAL REFEREED JOURNAL PUBLICATIONS

Günel G., Ince O., Ozbayram G., **Akyol Ç.**, Ince B., 2015. Rumen Sıvısının Aşı Olarak Kullanıldığı Büyükbaş Hayvan Dışkıları İle İşletilen Anaerobik Çürütücülerde Asidifikasyon Veriminin İncelenmesi. *Çanakkale Onsekiz Mart Üniversitesi Fen Bilimleri Enstitüsü Dergisi*, 1, 27-38.

Erdem E.I., Ince O., **Akyol Ç.**, Ozbayram G., Ince B., 2015. Bahçe Atıkları Kompostunun Yasal Düzenlemeler Çerçevesinde Toprak Şartlandırıcısı Olarak Kullanımının İncelenmesi. *Çanakkale Onsekiz Mart Üniversitesi Fen Bilimleri Enstitüsü Dergisi*, 1, 65-80.

CONFERENCE PRESENTATIONS AND POSTERS

International Conference Presentations and Posters

Foglia, A., **Akyol, Ç.**, Eusebi, A.L., Cipolletta, G., Frison, N., Gorbi, S., Fatone, F., 2019. Long-term operation of anaerobic municipal wastewater treatment of low-loaded wastewater for fertigation purposes. 3rd IWA Resource Recovery Conference, 8-12 September, Venice, Italy.

Ince, O., **Akyol, Ç.**, Ozbayram, E.G., Erdem, E.I., Ince, B., 2019. Co-composting of yard and kitchen wastes: comparative bacterial diversity in the thermophilic phase. 10th IWA International Symposium on Waste Management Problems in Agro-Industries, 19-21 June 2019, Rhodes, Greece.

Turkdogan, F.I., Yetilmezsoy, K., Goncaloglu, B.I., Kesintimur, N., Gungordu, M., **Akyol, Ç.**, 2018. Removal of ammonium nitrogen from the DAF-pretreated poultry slaughterhouse wastewater by *Lemna minor*. 4th International Conference on Engineering and Natural Science – ICENS 2018. 2-6 May 2018, Kiev, Ukraine.

Akyol, Ç., Ozbayram, E.G., Demirel, B., Onay, T.T., Ince, O., Ince, B., 2018. The impact of nano-zno on microbial community behavior and biogas generation from simulated landfill reactors. The 10th International Conference on Combustion, Incineration/Pyrolysis, Emission and Climate Change - i-CIPEC 2018. 18-21 December 2018, Bangkok, Thailand.

Tutal, B., Ince, O., **Akyol Ç.**, Ozbayram, E.G., Ince B., 2017. Microbial community dynamics in anaerobic digesters fed with cow manure and barley under different operating conditions. VII International Conference on Environmental, Industrial and Applied Microbiology - BioMicroWorld2017. 18-20 October 2017, Madrid, Spain (Oral presentation).

Erdem, E.I., Ince, O., Ozbayram, E.G., **Akyol Ç.**, Ince B., 2017. Comparison of bacterial community profiles during composting of yard and kitchen wastes. VII International Conference on Environmental, Industrial and Applied Microbiology - BioMicroWorld2017. 18-20 October 2017, Madrid, Spain (Oral presentation).

Ozbayram, E.G., Ince, O., **Akyol, Ç.**, Gunel, G., Ince, B., 2017. Taking one more advantage from ruminants: Improvement of methane production in anaerobic digesters. 9th IWA Young Water Professionals. 24-27 May 2017, Budapest, Hungary (Poster presentation).

Tutal, B., **Akyol, Ç.**, Ince, O., Ozbayram, E.G., Kurt Polat, P.O., Yagdi, K., Ince, B., 2017. Enhancement of methane production by varying operating conditions in anaerobic digesters fed with cow manure and barley. 253rd American Chemical Society National Meeting & Exposition. 2-6 April 2017, San Francisco, California, USA (Poster presentation).

Sakarya, K., **Akyol Ç.**, Demirel B., 2016. The effect of zinc oxide (ZnO) and silver (Ag) nanoparticles on biogas production from anaerobic digestion of sludge. 6th International Conference on Energy from Biomass and Waste. 14-17 November 2014, Venice, Italy (Oral presentation).

Turker G., Ince, O., **Akyol Ç.**, Ertekin E., Ince B., 2015. Effect of operational changes in tetracycline resistance gene proliferation in anaerobic digestion of OTC medicated cattle manures. VI International Conference on Environmental, Industrial and Applied Microbiology - BioMicroWorld2015. 28-30 October 2015, Barcelona, Spain (Oral presentation).

Ozbayram E.G., Ince O., **Akyol Ç.**, Bakirel U., Kleinstueber, S., Ince B., 2015. Characterization of microbial community structures of cow rumen and manure by pyrosequencing and Q-PCR. VI International Conference on Environmental, Industrial and Applied Microbiology - BioMicroWorld2015. 28-30 October 2015, Barcelona, Spain (Oral presentation).

Akyol Ç., Ince O., Turker G., Ince B., 2015. Fate of oxytetracycline in two-stage anaerobic digestion of manure from therapeutically treated cattle. IWA Balkan Young Water Professionals. 10-12 May 2015, Thessaloniki, Greece (Poster presentation).

Akyol Ç., Onay T.T., Demirel B., 2015. Determination of biochemical methane potential of tannery sludge with batch experiments. International Conference on Anaerobic Digestion: AD Technology and microbial ecology for sustainable development. 3-6 February 2015, Chiang Mai, Thailand (Poster presentation).

Sakarya K., **Akyol Ç.**, Demirel B., 2015. The impact of engineered nanomaterials on anaerobic digestion of sewage sludge. International Conference on Anaerobic Digestion: AD Technology and microbial ecology for sustainable development. 3-6 February 2015, Chiang Mai, Thailand (Oral presentation).

Akyol Ç., Ozbayram E.G., Ince O., Kleinstueber S., Cetecioglu Z., Kaya D., Coban V., Ince B., 2014. Evaluation of the effect of mixing ratio on methane generation during the anaerobic co-digestion of cow manure and *Hordeum vulgare*. 5th International Conference on Energy from Biomass and Waste. 17-20 November 2014, Venice, Italy (Oral presentation).

Akyol Ç., Ince O., Türker G., Ince B., 2014. Enhanced acidification of cattle manure during anaerobic digestion. 2nd IWA Specialized Conference on Ecotechnologies for Wastewater Treatment. 23-25 June 2014, Verona, Italy (Poster presentation).

Turker G., Ince O., Ertekin E., **Akyol Ç.**, Ince B., 2013. Effects of mixing and solid content on active microbial populations in thermophilic digestion of OTC medicated manure. ICOEST Cappadocia 2013 - The international Conference on Environmental Science and Technology, 23-25 June 2013, Nevsehir, Turkey (Oral Presentation).

Turker G., Ince O., Ertekin E., **Akyol Ç.**, Ince B., 2012. Changes in performance and active microbial communities due to single and multiple effects of mixing and solid content in anaerobic digestion process of OTC medicated cattle manure. EWRES - European Workshop on Renewable Energy Systems, 17-28 September 2012 Antalya, Turkey (Oral Presentation).

National Conference Presentations and Posters

Gunel G., Ince O., Ozbayram E.G., **Akyol Ç.**, Ince B., 2016. Üst mezofilik koşullarda büyükbaş hayvan dışkı ile işletilen anaerobik çürütücülerde rumen sıvısı kullanılarak biyogaz veriminin artması. 8. Ulusal Katı Atık Yönetimi Kongresi (UKAY 2016), 11-14 May 2016, Kastamonu, Turkey (Oral presentation).

Erdem E.I., Ince O., **Akyol Ç.**, Ozbayram E.G., Ince B., 2015. Bahçe atıklarının kompostlaştırılması ile elde edilen son ürünün toprak şartlandırıcısı olarak kullanımının incelenmesi. 7. Ulusal Katı Atık Yönetimi Kongresi (UKAY 2015), 14-16 October 2015, Gaziantep, Turkey (Oral presentation).

Gunel G., Ince O., Ozbayram E.G., **Akyol Ç.**, Ince B., 2015. Büyükbaş hayvan dışkı ile işletilen anaerobik çürütücülerde rumen sıvısı kullanılarak asidifikasyon veriminin artırılması. 7. Ulusal Katı Atık Yönetimi Kongresi (UKAY 2015), 14-16 October 2015, Gaziantep, Turkey (Oral presentation).

REVIEWS

- Water Research
- Bioresource Technology
- Journal of Hazardous Materials
- Chemosphere
- Energy
- Journal of Cleaner Production
- Clean – Soil, Air, Water
- Waste and Biomass Valorization
- Environmental Progress & Sustainable Energy
- Desalination & Water Treatment
- International Journal of Environmental Science and Technology

TEACHING EXPERIENCE

2014 - 2019	Teaching assistant ESC 501.01 Principles of Environmental Pollution
2014 - 2019	Teaching assistant ESC 518 Fundamentals of Anaerobic Digestion Processes
2015 - 2017	Teaching assistant ESC 552 Chemistry for Environmental Science & Engineering

ORGANIZED CONFERENCES AND WORKSHOPS

“3rd IWA Resource Recovery Conference – IWARR2019”, 8-12 September 2019, San Servolo Island, Venice, Italy (Organization Committee)

“3rd European Nutrient Event within ECOMONDO 2018”, 8-9 November 2018, Rimini Expo Centre, Rimini, Italy (Organization Committee)

“Workshop on Innovative Wastewater Treatment & Resource Recovery Technologies”, 11 May 2018, Istanbul Technical University, Istanbul, Turkey (Organization Committee)

“Institute of Environmental Sciences 3rd Annual Graduate Symposium”, 5 June 2017, Boğaziçi University, Istanbul, Turkey (Organization Committee)

“Institute of Environmental Sciences 2nd Annual Graduate Symposium”, 9-10 June 2016, Boğaziçi University, Istanbul, Turkey (Organization Committee)

“Institute of Environmental Sciences 1st Annual Graduate Symposium”, 3 June 2015, Boğaziçi University, Istanbul, Turkey (Organization Committee)

“Workshop on Microbial Ecology of Anaerobic Degradation”, 8-9 September 2014, Istanbul Technical University, Istanbul, Turkey (Organization Committee)

“International Conference on Recycling and Reuse”, 4-6 June 2014, Boğaziçi University, Istanbul, Turkey (Organization Committee)

“Workshop on Fluorescent *in situ* Hybridization (FISH) Applications in Biotechnology”, 13 October 2012, Boğaziçi University, Istanbul, Turkey (Lab. Applicator)

"Workshop on RNA Based Molecular Techniques", 26-27 September 2011, Istanbul Technical University, Istanbul, Turkey (Lab. Applicator)

"Workshop on DNA Based Molecular Techniques", 24-25 September 2011, Istanbul Technical University, Istanbul, Turkey (Lab. Applicator)

MEMBERSHIPS

American Chemical Society

Chamber of Environmental Engineers, Turkey

SOCIAL MEDIA ACCOUNTS

Researchgate: Çağrı Akyol

LinkedIn: Çağrı Akyol