

AIYOUB SHAHI *PhD.*



Education

2016 Ph.D., Environmental Biotechnology, Istanbul Technical University, Istanbul - Turkey
2003 M.Sc., Plant Biology, Ecology - Systematics, University of Tabriz, Tabriz – Iran
2000 B. Sc., Biology, University of Tabriz, Tabriz - Iran

Current Position:

Post-doc researcher at Animal Biology Department, Faculty of Natural Science, University of Tabriz, Iran.

Honors and awards

- First ranked student in B.Sc.

Research Interests

Environmental Biotechnology, Microbial Ecology, Environmental Microbiology, Petroleum Microbiology, Biodegradation, Bioremediation

PhD thesis

Development of effective molecular approach for determining the biodegradation potential of petroleum contaminated soil

Master thesis:

Population Dynamics of *Juniperus communis* L. in Mishu-dagh altitudes (Azerbaijan province – Iran)

Scientific Projects (as researcher)

2017-Present:

Post-doc project: Statistical Design to Optimize Crude Oil Bioremediation by Local Microbial Isolates

2016-Present:

Turkish (TUBITAK) -German (BMBF) joint project, “Improvement of Anaerobic Biodegradation Efficiency of Petroleum-derived Wastes - ZEROWASTE”

2014-2016:

The Scientific and Technological Research Council of Turkey (TUBITAK) Project, “Improvement of the Efficiency of Biomethane Production from Anaerobic Digester Using Rumen Bacteria and Specific Hydrolysis Enzyme”

2013-2015:

Scientific Research Projects Coordination Unit of Istanbul Technical University (BAP-ITU) Project, “Bioremediation of petroleum rich refinery sludge”

2012-2014:

European Cooperation in Science and Technology (EU-COST Action) Project, “Determination of Impacts of Wastewaters including Antibacterial and Antibiotics on Anaerobic Metabolic Pathways and Investigation of Relationship between These Pharmaceuticals and Antibiotic Resistance Genes”

Publications

Book Chapters

1. **Shahi A.**, Yavuzturk Gul B., Aydin S., Advanced Biomethane Processes, In: *Sustainable Energy Technologies*, CRC Press, 2017 (Under publication)

Journal Papers

1. **Shahi, A.**, Ince, B., Aydin, S., Ince, O. (2017) Assessment the Horizontal Transfer of Functional Genes as a Suitable Approach for Evaluation the Bioremediation Potential of Petroleum Contaminated Sites: A Mini-Review. *Applied Microbiology and Biotechnology*. 101(11): 4341-4348
2. **Shahi, A.**, Aydin, S., Ince B., Ince, O. (2016) Reconstruction of Bacterial Community Structure and Variation for Enhanced Petroleum Hydrocarbons Degradation Through Biostimulation of Oil Contaminated Soil. *Chemical Engineering Journal*. 306: 60-66
3. **Shahi, A.**, Aydin, S., Ince B., Ince, O. (2016) The Effects of white-rot fungi *Trametes versicolor* and *Bjerkandera adusta* on microbial community structure and functional genes during the bioaugmentation process following biostimulation practice of petroleum contaminated soil. *International Biodeterioration & Biodegradation*. 114: 67-74
4. **Shahi, A.**, Aydin, S., Ince B., Ince, O. (2016) Evaluation of microbial population and horizontal transfer of functional genes during the bioremediation of petroleum-contaminated soil as an effective monitoring approach. *Ecotoxicology and Environmental Safety*. 125:153-60
5. Aydin, S., Karacay H. A., Gokce, S., **Shahi, A.**, Ince, B., Ince, O. (2016) Aerobic and Anaerobic Fungal Metabolism and Omics Insights for Increasing Polycyclic Aromatic Hydrocarbons Biodegradation - a review. *Fungal Biology Reviews*. DOI: 10.1016/j.fbr.2016.12.001

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Nationality

Iranian

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Journal Papers (continued)

- Aydin, S., **Shahi, A.**, Ince, B., Ozbayram, E.G., Ince, O. (2015) Use of PCR-DGGE based molecular methods to assessment of microbial diversity during anaerobic treatment of antibiotic combinations. *Bioresource Technology*. 192: 735–740
- Aydin, S., Ince, B., Cetecioglu, Z., Arikan, O., Ozbayram, E.G., **Shahi, A.**, Ince, O. (2015) Combined effect of erythromycin, tetracycline and sulfamethoxazole on performance of anaerobic sequencing batch reactors. *Bioresource Technology*. 186: 207–214
- Aydin S., Ince B., Cetecioglu Z., Ozbayram E.G., **Shahi A.**, Okay O., Arikan O, Ince O. (2014) Performance of anaerobic sequencing batch reactor in the treatment of pharmaceutical wastewater containing erythromycin and sulfamethoxazole mixture. *Water Science and Technology*. 70 (10):1625-32
- Shahi, A.**, Movafeghi, A., Hekmat-Shoar, H., Neishabouri, A., Iranipuor, S. (2007). Demographic Study of *Juniperus communis* L. on Mishu-dagh Altitudes in North West of Iran. *Asian Journal of Plant Science* 6 (7):1080-1087

* Papers No. 1, 2, 3 and 4 have evolved from my PhD thesis.

Conference Papers

- Shahi, A.**, Aydin, S., Ince, B. and Ince, O. “The study of quantitative changes in microbial communities and functional genes in a petroleum contaminated soil after treated by white rot fungi”, VII International Conference on Environmental, Industrial and Applied Microbiology - BioMicroWorld 2017, Madrid, Spain, 18-20 October 2017 (accepted as oral presentation)
- Shahi, A.**, Aydin, S., Ince, B. and Ince, O. “Evaluation of dominant bacterial phyla during biostimulation practice of petroleum contaminated soil using Illumina HiSeq”, VII International Conference on Environmental, Industrial and Applied Microbiology - BioMicroWorld 2017, Madrid, Spain, 18-20 October 2017 (accepted as oral presentation)
- Shahi, A.**, Aydin S., Ince, B. and Ince, O. “Evaluation of changes in microbial community structure and functional genes in petroleum-contaminated soil through a bioremediation monitoring process”, BioMicroWorld 2015, Barcelona, Spain, 28-30 October 2015
- Shahi, A.**, Aydin, S., Ince, B. and Ince, O. “Analysis of the microbial community of highly petroleum polluted soil obtained from dredging of petroleum waste storage pit as an approach for evaluation of its bioaugmentation potential”, BioMicroWorld 2015, Barcelona, Spain, 28-30 October 2015
- Aydin, S., **Shahi, A.**, Ozbayram, E.G., Ince, B., and Ince, O. “Use of PCR-DGGE based molecular methods to assessment of microbial diversity during anaerobic treatment of antibiotic combinations”, Barcelona, Spain, 28-30 October 2015
- Aydin, S., **Shahi, A.**, Ince, B., Ince, O., "Inhibitory effect of erythromycin, tetracycline and sulfamethoxazole antibiotics on anaerobic treatment of a pharmaceutical wastewater" BioMicroWorld 2015, Barcelona, Spain, 28-30 October 2015
- Ozbayram, E.G., Ince, B., Aydin, S., **Shahi, A.**, Cetecioglu Z., and O. Ince. “Chronic Effects of Antibiotic Combinations on Anaerobic Microbial Community”. Verona, Italy, 23-27 June, 2014
- Aydin, S., Ince, O., Arikan, O., Cetecioglu, Z., Ozbayram, E.G. **Shahi A.** and Ince, B., “Effects of the antimicrobial and antibiotics on the microbial community structure and the development of antibiotic resistance genes in anaerobic sequencing batch reactor”. IWA World Water Congress and Exhibition Lisbon, Portugal, 21 - 26, September, 2014
- Shahi, A.**, Ince, O., Arikan, O., Cetecioglu, Z., Aydin, S., Ozbayram, E.G., Ince., B. “Chronic Effects of Erythromycin, Tetracycline and Sulfamethoxazole Combinations on the Performance of Anaerobic Sequencing Batch Reactor”. 2nd International Conference on Biogas Microbiology (ICBM2), Uppsala Sweden June 10-12, 2014
- Aydin S., Ince O., Arikan O., Cetecioglu Z., E.G. Ozbayram E.G., **Shahi A.**, Ince B. “Performance of Anaerobic Sequencing Batch Reactor in The Treatment Of Pharmaceutical Wastewater Containing Erythromycin And Sulfamethoxazole Mixture”. IWA 6th Eastern European Young Water Professionals Conference, Istanbul, Turkey, 28-30 May, 2014
- Ozbayram E.G., Ince O., Arikan O., Cetecioglu Z., Aydin S., **Shahi A.**, Ince B. “Long-Term Combined Effects of Antibiotics on Anaerobic Sequencing Batch Reactor (ASBRs) Treating Pharmaceutical Wastewater”. IWA 6th Eastern European Young Water Professionals Conference, Istanbul, Turkey, 28-30 May, 2014
- Ince, O , **Shahi, A.**, Arikan, O., Cetecioglu, Z., Ozbayram, E.G., Aydin, S., and Ince. B. “Chronic Effects of Antibiotic Mixtures on Anaerobic Sequencing Batch Reactors Treating Pharmaceutical Wastewater. The International Conference on the Constructed Environment”, Lisbon Portugal, 04-05 October, 2013
- Ince, O., Ozbayram, E.G., Arikan, O., Cetecioglu,Z., **Shahi,A.** Aydin, S. and Ince, B. “Determination of the chronic effects of antibiotic mixtures on resistance genes and microbi al community structure within anaerobic sequencing batch reactors treating pharmaceutical wastewater”, 2013, V. International Conference on Environmental, Industrial and Applied M, Madrid, Spain, 02-04 October , 2013
- Shahi, A.**, Neishabouri, A., Manafi, M.H. “Population Dynamics of *Juniperus communis* L. In Mishu-dagh (Azarbaijan Province - Iran)” 11th Iranian Conference of Biology, Urmia, Iran 23.-25 August, 2003

* Conference Papers No. 1, 2, 3 and 4 have evolved from my PhD thesis.

Aiyoub Shahi

Skills

- Operational knowledge of analytical instrumentation: HPLC, GC, GC/MS, TOC analyzer
- Skilled in molecular analysis techniques: DNA and RNA extraction, PCR amplification, RT-PCR, and DGGE
- Bioremediation of contaminated sites
- Development of research proposals

Workshops

As a participant

- Remote Sensing & GIS Courses and their Applications, Organized by Iranian Remote Sensing Center, Tehran - Iran, Jul. 2001
- DNA and RNA Based Molecular Methods (DNA and RNA Isolation, PCR, Cloning Sequencing, qPCR, FISH, DGGE) and their Applications, Organized by Istanbul Technical University & Bogazici University, Istanbul - Turkey, June 2011

As a member of organizing committee

- Workshop on Microbial Ecology of Anaerobic Degradation in the Scope of the Turkish – German Year of Science 2014, 08-09 September 2014

Teaching Experience and Presented Courses

2003-2008: Plant Ecology, Faculty of Natural Science, Plant Science Department, University of Tabriz, Tabriz, Iran

2007-2008: General Ecology, Faculty of Natural Science, Plant Science Department, University of Tabriz, Tabriz, Iran

2005-2006: Plant Physiology, Biology Department, Azad University (Marand Branch), Marand, Iran

2003-2005: Botany, Agricultural Engineering Department, Azad University (Kaleybar Branch), Kaleybar, Iran

2003-2005: Botany laboratory, Agricultural Engineering Department, Azad University (Kaleybar Branch), Kaleybar, Iran

2003-2005: Crop Physiology, Agricultural Engineering Department, Azad University (Kaleybar Branch), Kaleybar, Iran

Editorial board

- Archives of Petroleum and Environmental Biotechnology

Reviewer

- Journal of Hazardous Materials
- Canadian Journal of Chemical Engineering
- Euro-Mediterranean Journal for Environmental Integration
- Applied Microbiology and Biotechnology
- Journal of Botanical Sciences
- Waste and Biomass Valorization
- Journal of Energy Management and Technology