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Department of Environmental Engineering Goztepe, Kadıkoy
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EDUCATION

- PhD (2010) : Istanbul Technical University, Civil Engineering Faculty, Department of Environmental Engineering

DISSERTATION: *Hydraulic Behaviour of Non-Spherical Particles Through Packed Beds*

- MS (2003) : Istanbul Technical University, Civil Engineering Faculty, Department of Environmental Engineering

DISSERTATION: *Effects of Various Amendments on Composting of Advanced Wastewater Treatment Plant Sludge*

- BS (2000) : Istanbul Technical University, Civil Engineering Faculty, Department of Environmental Engineering
- High School (1994) : Istanbul, Hüseyin Avni Sözen Anatolian High School

ACADEMIC EMPLOYMENT

- Assistant Professor: Marmara University, Department of Environmental Engineering (01/2013-)
- Post-Doctoral Research Associate: Duke University, Center of Environmental Implications of Nanotechnology (CEINT), North Carolina, USA (May, 2010 - September, 2011)
- Research and Teaching Assistant: Istanbul Technical University, Department of Environmental Engineering (2002-2012)

RESEARCH INTERESTS

- Environmental Nanotechnology
- Nano-remediation
- Control of micropollutants
- Hydraulics of Porous Media
- Water Treatment Technologies
- Municipal and Industrial Wastewater Treatment and Reuse

SCHOLARSHIP

THE SCIENTIFIC AND TECHNOLOGICAL RESEARCH COUNCIL OF TURKEY (TUBITAK), Post-Doctoral Research Fellowship (May, 2010 - May, 2011), Duke University, NC, USA.

Research Subject: *'Contaminant Removal by Nanoparticles for Water Treatment'*, Supervisor: Prof. Mark Wiesner

PROFESSIONAL MEMBERSHIPS

- AEESP (The Association of Environmental Engineering and Science Professors)
- WEF (Water Environment Federation)
- ACS (American Chemical Society)
- IWA (International Water Association)
- National Committee on Water Pollution Research and Control (SKATMK)

PUBLICATIONS

Peer-Reviewed Papers

1. **Erdim, E.**, Akgiray, Ö., Demir, İ. (2015). A revisit of Pressure Drop - Flow Rate Correlations for Packed Beds of Spheres, Powder Technology, 283, 488-504.
2. **E. Erdim**, A.R. Badireddy, M.R. Wiesner (2015). Characterizing Photosensitized Reactive Oxygen Generation and Bacterial Inactivation by a Zerovalent Iron-Fullerene Nano-composite Device at Neutral pH, Journal of Hazardous Materials, 283, 80-88.
3. Aydın, E., Yaman, F.B., Genceli, E. A., Topuz, E., **Erdim, E.**, Gurel, M., Ipek, M., Pehlivanolu-Mantaş, E. (2012). Occurrence of THM and NDMA precursors in a watershed: Effect of seasons and anthropogenic pollution, Journal of Hazardous Materials, Volumes 221-222, 30 June 2012, Pages 86-91.
4. E. Soyer, **E. Erdim**, S. Tasiyici, I. Koyuncu (2009). Natural and modified zeolite utilization in submerged membrane reactor for potable water treatment, Desalination and Water Treatment, 9, 201-210.
5. **E. Erdim**, E. Soyer, S. Tasiyici, I. Koyuncu (2009). Hybrid photocatalysis/submerged microfiltration membrane system for

drinking water treatment, *Desalination and Water Treatment*, 9, 165-174.

6. C.Y. Gomec, **E. Erdim**, I. Turan, A.F. Aydin, I. Ozturk (2007). Advanced oxidation treatment of physico-chemically pre-treated olive mill industry effluent, *Journal of Environmental Science and Health, Part B*, 42, 741-747.
7. M. Cakmakci, **E. Erdim**, C. Kinaci and L. Akca (2005). Evaluation of sludge management alternatives in Istanbul metropolitan area, *Water Science & Technology*, Vol 51, No 11 pp 121-129.

Conference Proceedings

1. Esra Erdim, Zeynep Yücesoy Özkan, Halil Kurt, Nergis Dilsizoğlu, Semra Çetin, Fatmanur Şanlı, Bilge Alpaslan Kocamemi (2017). Enhancement of Anaerobic Ammonium Oxidation (Anammox) Process: The use of one-pot synthesized nanoscale zero-valent iron (nZVI)), *WEFTEC 2017*, September 30 - October 4, Chicago, USA
2. Z.Y. Ozkan, M. Cakirgoz, E.S. Kaymak and E. Erdim (2017). Rapid Decolorization of Textile Wastewater by Green Synthesized Iron Nanoparticles, 9th IWA YWP, 24-27 May, Budapest, HUNGARY
3. Haciosmanoglu, G.G., Ozkan, Z.Y., Soyer, E., Genc, S., Can, Z.S. and Erdim, E. (2017). Removal of Industrial Xenoestrogens by Using Zero Valent Iron Nanoparticles, 2nd *International Conference on Civil and Environmental Engineering (Cappadocia-2017)*, May 8 - 10, Nevşehir, **TURKIYE**
4. Ozkan, Z.Y., Terzi, M., Sagirkaya, F. and Erdim, E. (2017). Biosynthesized Iron Nanoparticle Mediated Degradation of Industrial Wastewater, 2nd *International Conference on Civil and Environmental Engineering (Cappadocia-2017)*, May 8 - 10, Nevşehir, **TURKIYE**
5. E. Soyer, E. Erdim, S. Tasiyici, M. Akdagli, M. Cakmakci and I. Koyuncu. (2009). Decomposition of NOM by Ultrasonic Irradiation in a Submerged Membrane System, 5th IWA Specialised Membrane Technology Conference for Water and Wastewater Treatment (IWA-MTC2009), 1-3 September, Beijing, China
6. E. Soyer, E. Erdim, S. Tasiyici, M. Akdagli, M. Cakmakci and I. Koyuncu. (2009). Pre-adsorption of Natural Organic Matter (NOM) in a Submerged Membrane-Adsorption Hybrid System for Potable Water Treatment, 5th IWA Specialised Membrane Technology Conference for Water and Wastewater Treatment (IWA-MTC2009), 1-3 September, Beijing, China

7. Koyuncu, I., Erdim, E., Soyer, E. and Tasiyici, S. (2009). New methods to decrease fouling on ultrafiltration submerged membrane system, IWA Nanoparticle and Particle Separation Conference, 3-5 June, Durham, North Carolina, USA
8. Erdim, E., Soyer, E., Tasiyici, S., and Koyuncu, I. (2008). Hybrid Photocatalysis/Submerged Microfiltration Membrane System for Drinking Water Treatment, MDIW 2008 Conference on Membranes in Drinking Water Production and Wastewater Treatment, Toulouse, 20-22 October.
9. Soyer, E., Erdim, E., Tasiyici, S., and Koyuncu, I. (2008). Natural and Modified Zeolite Utilization in Submerged Membrane Reactor for Potable Water Treatment, MDIW 2008, Conference on Membranes in Drinking Water Production and Wastewater Treatment, Toulouse, 20-22 October.
10. Koyuncu, I., Demiral, N., Erdim, E., Soyer, E., and Arslan, A. (2008). Reuse of Segregated Textile Effluents by Membrane Technologies, IWA Regional Conference: "Membrane Technologies in Water and Waste Water Treatment", Moscow, 2-4 June.
11. E. Buyuk, E. Erdim, and L. Akca (2007). Investigation of In-Sewer Treatment Processes, 14th International Symposium on Environmental Pollution and its Impact on Life in the Mediterranean Region, Sevilla, Spain, October 10-14 (poster presentation)
12. N. Kayaalp, M. Cakmakci, E. Erdim, L. Akca and C. Kinaci. (2007). Remediation of drilling muds at Thrace region. Facing Sludge Diversities Challenges, Risks & Opportunities. 28-30 March, Antalya, Turkey. (poster presentation)
13. C. Y. Gomec, E. Erdim, I. Turan, A. F. Aydin and I. Ozturk. (2006). Advanced oxidation treatment of physico-chemically pre-treated olive mill industry effluent. Proc. 7th International Symposium on Waste Management Problems in Agro-Industries, Amsterdam, The Netherlands, 105-112.
14. Gomec, C. Y., Erdim, E., Demir, I., Tezer, H. and Ozturk, I. (2006). Sludge conditioning, dewatering and composting experiences on a Wet Corn Milling Industry. IWA Specialized Conference-Sustainable sludge management: state of the art, challenges and perspectives, May 29-31, Moscow, Russia, 429-434.
15. Alp, K., Eldem, N., Gomec, C. Y., Erdim, E. and Ozturk, I. (2005). Significance and Control of Scaling for Anaerobic Digesters Treating Young Landfill Leachates, Proceedings of the 4th International

Symposium on Anaerobic Digestion of Solid Waste , 31 August-02 September, Copenhagen, Denmark, Volume 2, 233-238.

16. Erdim, E., Sizerici, B. and Akca, L. (2004). Settling and Dewatering Characteristics of Low-Turbidity Alum Sludges, Resources from Sludge: Forging New Frontiers, 2-3 March, Raffles Town Club, Singapore
17. Yangin Gomec, C., Erdim, E., Ozturk, I. and Bilge, C. (2004). Advanced Full-Scale Post Treatment Experiences on Anaerobic Expanded Bed Bioreactor Effluent From a Corn Milling Industry, Proceedings of the 10th World Congress on Anaerobic Bioconversion...Answer for Sustainability, 29 August-02 September, Montreal, Ottawa, Canada, Volume IV, 2207-2210.
18. Cakmakci, M., Erdim, E., Kinaci, C., Akca, L., (2004). Sludge management in İstanbul metropolitan area, Fourth International Black Sea Conference Environmental Protection Technologies for Coastal Areas, 204-220, 9-11 June, Varna, Bulgaria

Conference Proceedings (National)

1. Sızırıcı, B., Akca, L., Erdim, E., (2003). Alum çamurlarının şartlandırılması, Türkiye’de Çevre Kirlenmesi Öncelikleri Sempozyumu IV, 9-10 Ekim 2003, Gebze Yüksek Teknoloji Enstitüsü, Gebze, Kocaeli
2. Alp, K., Erdim, E., Eldem, N., Ozturk, I., (2004). Odayeri Kemerburgaz Katı Atık Depolama Tesisi Sızıntı Suyunda Çökeltme Problemi, 9. Endüstriyel Kirlenme Kontrolü Sempozyumu, Bildiriler Kitabı, 39, İstanbul, Türkiye
3. Soyer, E., Erdim, E., Akgiray, O., Saatci, A.M. (2008). Kirlenmiş Havzalardan Beslenen İçme Suyu Arıtma Tesisleri için İyileştirme Teknikleri, Kent Yönetimi, İnsan ve Çevre Sorunları Sempozyumu, 2-6 Kasım, İstanbul
4. Koyuncu, I., Keskinler, B., Kinaci, C., Soyer, E., Erdim, E., Ozgun, H., Kayaalp, N., Ersahin, E., Wiesner, M., Tarabara, V. and Steinmetz, H. (2009). Su ve Atıksu Arıtımında Membran Teknolojisi, İTÜ Nano-Bilim and Nano-Teknoloji Çalıştay, 12-13 Şubat, İstanbul
5. Koyuncu, I., Soyer, E., Erdim, E. and Wiesner, M. (2009). İçme sularında nanopartiküller, İTÜ Nano-Bilim and Nano-Teknoloji Çalıştay, 12-13 Şubat, İstanbul (poster)
6. Akdağlı, M., Taşyıcı S., Soyer E., Erdim, E., Çakmakçı, M., Uyak V., Koyuncu, I. (2009). Batık Membran Sistemleri ile İçme Suyu Arıtımı,

National Peer-Reviewed Papers

Erdim, E., Demir, İ., Akgiray, Ö. Farklı filtre malzemeleri için temiz yatak yük kayıplarının belirlenmesi, **itüdergisi/e** su kirlenmesi kontrolü Cilt:20, Sayı:1, 111-119, Mayıs 2010

PROJECTS (National)

1. Pehlivanoglu-Mantaş, E., Aydın, E., Dogruel, S., Erdim, E., Yurdusen, A., Yurum, A., Yurum, Y. (2015-2017). 'Detection of Micropollutants and Their Byproducts in Domestic Wastewater Treatment Plant Effluents with LC-MS/MS and Assessment of Novel Treatment Technologies for Reuse of Wastewater', TUBITAK, 114Y487 (1003-Under Priority Areas Program-WATER-0202-Control of Micropollutants).
2. Erdim, E., Can, Z.S., Soyer, E., Genc, S., Pehlivanoglu-Mantaş, E. (2014-2016). 'Removal of nonylphenol and octylphenol by zero valent iron nanoparticles (nZVI) and nZVI/fullerene nanocomposite, Budget: 60.000 TL, TUBITAK, 114Y431.
3. Tayanc, M., Erdim, E. (2014-2016) Use of Nanoparticles in Water and Wastewater Treatment, Marmara University, Scientific Research Center, Budget: 200.000 TL, FEN-E-120314-0066
4. Erdim, E., Soyer, E. (2014- 2017) Decolorization of Textile Industry Wastewater using Nano Zero Valent Iron Technology, Marmara University, Scientific Research Center, Budget: 50.000 TL
5. Soyer, E., Tugtas, E., Calli, B., Erdim, E. (2012) Fabrication of Nanoparticle Embedded Polymeric Membranes for water and Wastewater Treatment: Investigation of Nanoparticle Release, TÜBİTAK, 112Y064
6. Soyer E., Akgiray Ö., Erdim E., Eldem N. (2012) Use of Recycled Crushed Glass in Direct Filtration, Marmara University, Scientific Research Center, FEN-B-130511-0156
7. Pehlivanoglu-Mantaş, E., Gürel, M., Genceli, A. E., Aydın, Egemen., Erdim, E., Soyer, E. (2012) Comparison of formation potential of N-nitrosodimethylamine (NDMA) and Trihalomethane (THM) in Büyükçekmece Watershed, The Scientific and Technological Research Council of Turkey (TÜBİTAK).

8. Demir, İ., Erdim, E., Akgiray Ö., Soyer E. (2010). Investigation of Sabri Ergun Equation for use of Non-Spherical Particles, İTÜ Scientific Research Center, Project No: 32895.
9. Koyuncu, İ., Çakmakçı M., Uyak V. Soyer, E., Erdim E. (2010) Potable Water Treatment using Submerged Membrane Systems: New Methods to Decrease Membrane Fouling. The Scientific and Technological Research Council of Turkey (TÜBİTAK)
10. Akça, L., Erdim, E., Büyük, E. (2006). In-Sewer Treatment Processes, Istanbul Water and Sewerage Administration (ISKI) İstanbul Metropolitan Municipality.
11. Akça, L., İşleyen, M., Çakmakçı, M., Erdim, E., Özyürek, E., Kayaalp, M. (2006). Turkish Petroleum Corporation (TPAO), Disposal of Drilling Mud and Rehabilitation of Mud-pit, İTÜ Research Center.
12. Akça, L., Erdim, E., Sızırıcı, B. (2004). İstanbul Water and Sewerage Administration (ISKI), Management of Water Treatment Plant Sludge, İTÜ Research Center, İstanbul.
13. Öztürk, İ., Erdim, E., Gömeç, Ç.Y., Demir, İ., Gençsoy, E.B., Küçükler, Ö., Tezer, H. (2004). Evaluation of waste management alternatives in CARGILL Orhangazi Corn Milling Industry, İTÜ Research Center, İstanbul.
14. Öztürk, I., Demir, I., Arıkan, O., Erdim, E., (2003), Aerobic and Anaerobic Composting of Various Types of Solid Waste, 138 pages, State Planning Organization (DPT), Project No: 90145
15. Alp, K., Öztürk, İ., Erdim, E., (2003). Evaluation of İSTAÇ Odayeri-Kemberburgaz Landfill Leachate Treatment Plant Construction, İTÜ Research Center, İstanbul.
16. Öztürk, İ., Alp, K., Erdim, E., Eldem, N. (2003). Scaling problems in Leachate Transmission Lines of Odayeri (Kemberburgaz) Landfill Site, İTÜ Research Center, İstanbul.
17. Demir, İ., Öztürk, İ., Arıkan O.A., Erdim, E., Altınbaş, M., (2003). "Alternative Disposal Methods for Poultry Wastes", State Planning Organization (DPT), Project No: 104, İstanbul.
18. Öztürk, İ., Demir, İ., Erdim, E., Gömeç, Ç.Y., Övez, S., Altınbaş, M. (2003). "Waste Management in CARGİLL Orhangazi Corn Milling Industry, İTÜ Research Center, İstanbul.

TEACHING EXPERIENCE

Undergraduate Courses:

ENVE 3002 (3+2), Environmental Engineering Unit Operations
CHEM 1001 (3+2), General Chemistry I
CHEM 1002 (3+2), General Chemistry II
ENVE 4011 (3+2) Water Engineering Design
ENVE 4022 (3+2) Wastewater Engineering Design
ENVE 2001 (3+2) Environmental Engineering Chemistry I
ENVE 2002 (3+2) Environmental Engineering Chemistry II
ENVE 4097 (0+2) Engineering Project I
ENVE 4098 (0+2) Engineering Project II

Supervisory Experience under ENVE 4097-4098

2016-2017:

- İpek Buse Karadoğan-Sezen Özkan, ‘Olive Mill Wastewater Treatment With Zero-Valent Iron Nanoparticles’
- Mücahit Özkan-Elif Sıla Kaymak, ‘Rapid Decolorization of Textile Wastewater by Green Synthesized Iron Nanoparticles’
- Mislina Maraşlıgil-Gülfem Aşık-Dilay Sever, ‘Zero-Valent Iron Nanoparticles For Heavy Metal Removal’

2015-2016:

- Ayşegül Küçüköğlü-Şeyma Doğan, ‘Decolorization of Reactive Dye Solutions By Green Synthesized Nanoscale Zero Valent Iron Particles’

Graduate Courses:

CBL 7001 (3+0), Introduction to Environmental Sciences (in Turkish)
ENVE 7062 (3+0), Environmental Nanotechnology

UNIVERSITY SERVICES

- Member of Curriculum Development Team, Marmara University, EED (2014-)
- Graduate Program Advisor for Environmental Engineering and Environmental Sciences, Marmara University EED (2013-)
- Member of Graduate Candidates Admission Committee, Marmara University
EED (2013-2014 Fall, 2014-2015 Spring)

- Graduation Ceremony Organizing Committee, Marmara University EE (2014-2015 Spring)
- Member of Internship Committee, ITU EED (2002/2004), (2005/2008)
- Member of Scholarship Committee, ITU EED (2003/2004)
- Member of Surveys Subcommittee, ABET, ITU EED (2002/2003 Fall semester)
- Member of Infrastructure and Laboratory Subcommittee, ABET, ITU EED (2002/2003 Spring semester)
- Member of Infrastructure and Safety Subcommittee, ABET, ITU EED (2002/2003 Spring semester)
- Introduction days, ITU, EED (2003) (2012)
- Member of Curriculum Development Team, ITU, EED (2005/2006)
- Member of Administrative and Academic Works Committee of Central Laboratory, ITU EED (2006/2010)
- Accreditation of Environmental Engineering Laboratory, ITU EED (2007/2010)
- Member of Core Group of ABET, ITU EED (2012)

OTHER ACTIVITIES

Organization of Scientific Meetings

- ITU, 9th Industrial Pollution Control Symposium, EKK 2004, Istanbul. Member of Organizing Committee, (Secretary)
- 10th IWA International Specialized Conference on Diffuse Pollution and Basin Management, 18-22 September 2006, İstanbul. Member of Organizing Committee.

Educational Meetings (National and International)

- Minitab 17, DOE Module Education, GEMBA Academy, 20-21 May, 2017, İstanbul, Turkey.
- 6. Turkish-German Water Partnership, 18-19 October, 2016, Mersin, Turkey.
- Horizon 2020 Turkey Launch Event, 4-5 June 2014, Hilton İstanbul Bosphorus Hotel, Harbiye, İstanbul
- TÜBİTAK Bilgi Günleri, Uluslararası Bilimsel ve Teknolojik İşbirliği Fırsatları, 20 Haziran 2012, Marmara Üniversitesi, Göztepe Kampüsü, İstanbul.
- Duke University, Civil and Environmental Engineering Laboratory, Membrane Research Laboratory; Duke University Shared Materials Instrumentation Facility (SMIF) (2010-2011)
 - Transmission Electron Microscope (TEM), Model: FEI Tecnai G² Twin
 - X-Ray Photoelectron Spectrometer (XPS), Model: Kratos Analytical Axis Ultra

- X-Ray Diffractometer (XRD), Model: Philips X'Pert PRO MRD HR X-Ray Diffraction System
- Scanning Electron Microscope (SEM), Model: FEI XL30 SEM-FEG
- Fourier Transform Infrared Spectrometer (FT-IR), Model: Thermo Electron Nicolet 8700
- Dynamic and static light scattering goniometer (DLS), Model: ALV (Germany) CGS-3
- RAMAN spectroscopy, Model: Horiba Jobin Yvon LabRam ARAMIS
- ICEIN 2011, International Conference on the Environmental Implications of NanoTechnology & EPA Nano Grantees Meeting, Washington Duke Inn, Durham, NC, May 9-11, 2011.
- The Singer Retirement Symposium, Rosenau Auditorium, Apr 15, 2011, University of North Carolina at Chapel Hill, USA
- NanoInk, Duke University Workshop, Tip-Based Patterning for Bio and Nano Engineering, 16 February 2011, Duke University, NC, USA
- “Scaling Analysis in Modelling Transport and Reaction Processes” Prof.Dr. Willian B. Krantz, 14, 21, 28 Nisan 2009, İTÜ Kimya-Metalurji Fakültesi.
- Shimadzu, TOC Cihazı Eğitimi 28-29 Ocak 2008, İTÜ Çevre Mühendisliği Bölümü, İSTANBUL
- Hach-Lange TOC Cihazı Eğitimi, Temmuz 2007, İTÜ Çevre Mühendisliği Bölümü, İSTANBUL
- DSİ, Eğitim toplantısı, Atıksu Arıtma Tesisleri ve Visual Basic Uygulamaları, Prof.Dr. Ahmet Mete Saatçi, Prof. Dr. Ömer Akgiray, 07-11 Temmuz 2008, İstanbul.
- Uzman Akreditasyon Danışmanlık “Kimyasal Ölçümlerde Belirsizlik” eğitimi, 18 Mayıs 2007, İTÜ Çevre Mühendisliği Bölümü, İSTANBUL.
- Uzman Akreditasyon Danışmanlık “Metot Validasyonu” eğitimi, 18 Mayıs 2007, İTÜ Çevre Mühendisliği Bölümü, İSTANBUL
- “Sustainable Concepts Towards A Zero Outflow Municipality, Zero-m, projesi kapsamında “Sürdürülebilir Kalkınma için Atıksu Yönetimi”, 16-17 Nisan 2007, TÜBİTAK Kimya ve Çevre Enstitüsü, Gebze-Kocaeli.
- “Akreditasyon ve ISO 17025 Standardı” eğitim semineri, 20 Mart 2007, İstanbul.
- “Arıtma Tesislerinde ve Terfi Merkezlerinde Kullanılan Dalgıç Pompalar ve Mikserler”, WILO Pompa Sistemleri A.Ş. Altyapı Uygulamaları Bölümü, 26 Mayıs 2006, The Marmara Oteli, İstanbul.
- ‘Corrosion and its Prevention Practices in Industrial Cooling Water Circuits, Technical visit to HENKEL Oberfl. Techn., Düsseldorf-ALMANYA, 16-22 September, 2003.

