

Prof. Dr. Ömer Akgiray

BİLİMSEL ÇALIŞMALARI

1. Uluslararası Hakemli Dergilerdeki Yayınları:

1. S.Y. Hunce, E. Soyer, **Ö. Akgiray** (2018). On the Backwash Expansion of Graded Filter Media. *Powder Technology*, 333, 262-268. <https://doi.org/10.1016/j.powtec.2018.04.032>
2. S.Y. Hunce, E. Soyer, **Ö. Akgiray** (2018). Use of filterability index in granular filtration: effect of filter medium type, size and shape. *Water Science & Technology: Water Supply* (in print) DOI: 10.2166/ws.2018.083.
3. E. Soyer, S.Y. Hunce, **Ö. Akgiray** (2017). Characterization of apricot stone shells as a rapid filter medium. *Desalination and Water Treatment*. 93, 318-323. DOI: 10.5004/dwt.2017.20823.
4. S.Y.Hunce, E.Soyer, **Ö.Akgiray** (2016). Characterization of granular materials with internal pores for hydraulic calculations involving fixed and fluidized Beds. *Industrial and Engineering Chemistry Research*, 55(31), 8636-8651.
5. E Erdim, **Ö. Akgiray**, İ Demir (2015). A revisit of pressure drop-flow rate correlations for packed beds of spheres. *Powder Technology* 283, 488–504.
6. M. Eyvaz, **Ö. Akgiray**, E. Yüksel (2013). An experimental investigation on the hydraulic behavior of declining rate filtration. *Desalination and Water Treatment* 51, 6137–6147.
7. E. Soyer, **Ö. Akgiray**, N. Ö. Eldem, A. M. Saatçı (2013). On the use of crushed recycled glass instead of silica sand in dual-media filters. *Clean – Soil, Air, Water* 41 (4), 325–33.
8. E. Soyer, **Ö. Akgiray**, N. Ö. Eldem, A. M. Saatçı (2010). On the use of crushed recycled glass as a filter medium and comparison with silica sand. *Clean – Soil, Air, Water* 38 (10), 927–935.
9. E. Soyer and **Ö. Akgiray** (2009). A New Simple Equation for the Prediction of Filter Expansion During Backwashing. *Journal of Water Supply: Research and Technology-Aqua* 58 (5): 336-345.
10. **Ö. Akgiray** and E. Soyer (2006). An Evaluation of Expansion Equations for Fluidized Solid-Liquid Systems. *Journal of Water Supply: Research and Technology-Aqua*, 55 (7-8): 517-526.
11. **Ö. Akgiray** (2006). Reply to the discussion by W. H. Hager on “Explicit solutions of the Manning Equation for Partially Filled Circular Pipes.” *Canadian J. of Civil Engg*, 33:351-352.
12. **Ö. Akgiray** (2006). Reply to the discussion by T. S. W. Wong on “Explicit solutions of the Manning Equation for Partially Filled Circular Pipes.” *Canadian J. of Civil Engg*, 33:353-354.
13. **Ö. Akgiray** (2005). “Explicit solutions of the Manning Equation for Partially Filled Circular Pipes.” *Canadian J. of Civil Engg*, 32:490-499.
14. **Ö. Akgiray**, E. Soyer, and E. Yüksel (2004). “Prediction of Filter Expansion During Backwashing.” *Water Science & Technology: Water Supply*. Vol:4, No:5-6, pp.131-138.

15. N. Eldem, **Ö. Akgiray**, İ. Öztürk, E. Soyer, B. Çallı (2004). "Ammonia and pH inhibition in anaerobic treatment of wastewaters, Part II: Model development." *J. Environ. Sci. Health, Part A*. Vol.A39, No.9.
16. N. Eldem, İ. Öztürk, E. Soyer, B. Çallı, **Ö. Akgiray** (2004), "Ammonia and pH inhibition in anaerobic treatment of wastewaters, Part I: Experimental." *J. Environ. Sci. Health, Part A*. Vol.A39, No.9.
17. **Ö. Akgiray** (2004). "Simple Formulae for Velocity, Depth of Flow, and Slope Calculations in Partially Filled Circular Pipes." *Environmental Engineering Science*, 21(3).
18. E. Yüksel, **Ö. Akgiray**, and E. Soyer (2003). "Direct Filtration with Preozonation for Small Water Treatment Systems." *Water Science & Technology*, Vol:48, Issue:11-12.
19. S. Aksoğan, A. Baştürk, E. Yüksel, and **Ö. Akgiray** (2003). "The Use of Crushed Shells of Apricot Stones as the Upper layer in Dual Media Filters." *Water Science & Technology*, Vol:48, Issue:11-12.
20. E. Yüksel, **Ö. Akgiray**, A. Saatçı, H. Sarıkaya, İ. Koyuncu (2002). "Effect of Ozone Injection Location on Filter Performance in Direct Filtration," *Water Science and Technology*, Vol:46, Issue:9.
21. **Ö. Akgiray** and A. M. Saatçı (2001). "A New Look at Filter Backwash Hydraulics," *Water Science and Technology: Water Supply*, Vol:1, Issue:2, pp.65-72.
22. **Ö. Akgiray** and A. M. Saatçı (1998). "A Critical Look At Declining Rate Filtration Design," *Water Science and Technology*, Vol:38, Issue:6, pp.89-96.
23. **Ö. Akgiray** and A. M. Saatçı (1998). "An Algorithm for Bank Operation of Declining Rate Filters," *Water Research*, Vol:32, Issue: 7, pp. 2095-2105.
24. **Ö. Akgiray** (1993). "Computer Simulation of the Formation of Polymer Networks," *Die Makromolekulare Chemie, Macromolecular Symposia*, Vol.76, 211-218.

2. Uluslararası (İngilizce) Kitapta Bölüm:

B. E. Eichinger and **Ö. Akgiray**. "Computer Simulation of Polymer Network Formation," *Computer Simulation of Polymers*, ISBN 0-582-08374-5, E.A.Colbourne (Ed.), Longman, Harlow (1994). Chapter 9.

3. Uluslararası Sempozyum/Konferans Bildirileri:

1. Kaplan, Ö., Soyer, E., **Akgiray, Ö.** (2017) An Experimental Investigation of Wall Effects in Liquid-Solid Fluidization. IWA-PPFW2017, 2nd IWA Regional Symposium on Water, Wastewater and Environment, 22-24 March, Izmir.
2. Soyer, E., Yiğit Hünce, S., **Akgiray, Ö.** (2017) Use of Filterability Index in Granular Filtration: Effect of Filter Medium & Pretreatment Conditions. IWA-PPFW2017, 2nd IWA Regional Symposium on Water, Wastewater and Environment, 22-24 March, Izmir.
3. Yiğit Hünce, S., Soyer, E., **Akgiray, Ö.** (2017) On the Backwash Expansion of Non-Uniform and Non-Spherical Filter Media. IWA-PPFW2017, 2nd IWA Regional Symposium on Water, Wastewater and Environment, 22-24 March, Izmir.
4. Soyer, E., Hünce, S.Y., **Akgiray, Ö.** (2016) Preparation and Characterization of Apricot Stone Shells for Rapid Filters. R&R 2016, 3rd International Conference on Recycling and Reuse, 28-30 September 2016, Istanbul

5. Yigit Huncce, S., Soyer, E., **Akgiray, Ö.** (2015) Characterization of Natural Zeolite for Granular-Bed Filters. International Porous and Powder Materials Symposium and Exhibition. PPM2015, İzmir, Turkey. 15-18 September 2015, pp 294-298.
6. Soyer, E., Yiğit Huncce, S., Yilmaz, Z., Babaoğlu, C., Ülkü, Z.M., **Akgiray, Ö.** (2014) Recycled Material in Water Filtration: The Effect of Media Grain Shape. 2nd International Conference on Recycling & Reuse (R&R 2014), Istanbul, Turkey, 4-6 June, 2014
7. Yiğit Huncce, S., Soyer, E., **Akgiray, Ö.** (2014) Particle Characterization of Crushed Recycled Glass. 2nd International Conference on Recycling & Reuse (R&R 2014), Istanbul, Turkey, 4-6 June, 2014
8. E. Soyer and **Ö. Akgiray**. "Expansion of non-spherical media during fluidization." *2005 Particle Separation Conference*, Korea.
9. **Ö. Akgiray**, E. Soyer, and E. Yüksel. "Prediction of Filter Expansion During Backwashing." *IWA World Water Congress*, 19-24 September 2004, Marrakech. (makale olarak basıldı.)
10. N. Eldem, İ. Öztürk, E. Soyer, B. Çallı, B. Mertoğlu, and **Ö. Akgiray**. "Ammonia and pH Inhibition in Anaerobic Treatment." *10th World Congress: Anaerobic Digestion 2004*. Montreal, Canada, August 29-September 2, 2004.
11. A. Saatçı and **Ö. Akgiray**. "Length-Diameter Relations in Tubular Membrane Reactors." *International Conference on Conformation of the water supply and sewerage systems to the European Directives (IWA and IAWD)*. Parliament Palace, Bucharest, Romania, 20-21 May 2004.
12. A. Saatçı and **Ö. Akgiray**. "Process Selection for Municipal Wastewater Treatment Plants in Turkey," *International Conference on Wastewater Management and its Effect on the Environment in Hot and Arid Countries*, Muscat, Oman, 12-14 October 2002.
13. **Ö. Akgiray**. "Design of a Slow Sand Filtration System: A Case Study." *5th Specialized Conference on Small Water and Wastewater Treatment Systems*, Istanbul, Turkey, 24-26 September 2002.
14. E. Yüksel, **Ö. Akgiray**, and E. Soyer. "Direct Filtration with Preozonation for Small Water Treatment Systems." *5th Specialized Conference on Small Water and Wastewater Treatment Systems*, Istanbul, Turkey, 24-26 September 2002. (Makale olarak basıldı.)
15. S. Aksoğan, A. Baştürk, E. Yüksel, and **Ö. Akgiray**. "The Use of Crushed Shells of Apricot Stones as the Upper layer in Dual Media Filters." *5th Specialized Conference on Small Water and Wastewater Treatment Systems*, Istanbul, Turkey, 24-26 September 2002. (Makale olarak basıldı.)
16. E. Yüksel, **Ö. Akgiray**, A. Saatçı, H. Sarıkaya, İ. Koyuncu. "Effect of Ozone Injection Location on Filter Performance in Direct Filtration," *The IWA Conference on Water & Wastewater Management for Developing Countries*, Volume-2, 29-31 October 2001, Kuala Lumpur- Malaysia. (Makale olarak basıldı.)
17. **Ö. Akgiray** and A. M. Saatçı. "Evaluation of Design Methods for Declining Rate Filtration," *4th International Conference on Water Supply and Water Quality*, Krakow, Poland, 2000 (Conference Proceedings, pp.473-484).
18. **Ö. Akgiray** and A. M. Saatçı. "A New Look at Filter Backwash Hydraulics," *4th International Conference on Water Supply and Water Quality*, Krakow, Poland, 2000 (Conference Proceedings, pp.485-496). (Makale olarak basıldı.)
25. **Ö. Akgiray** and A. M. Saatçı. "A Critical Look At Declining Rate Filtration Design," *IAWQ 19th Biennial Conference*, Vancouver, Canada, 1998. (Makale olarak basıldı.)
26. **Ö. Akgiray**. "Computer Simulation of the Formation of Polymer Networks," 11th Polymer Networks Group Meeting, San Diego, USA, 1992. (Makale olarak basıldı.)
27. **Ö. Akgiray** and J. Heydweiller. "Optimal Temperature Control Policy for Parallel Reactions in a Batch Reactor," *1990 AIChE Annual Meeting*, Chicago.

28. **Ö. Akgiray** and J. Heydweiller. "Numerical Methods for Optimal Control Problems," *1990 AIChE Annual Meeting*, Chicago.
29. **Ö. Akgiray** and J. Heydweiller. "Optimization of Differential Chemical Reactor Models," *1989 AIChE Annual Meeting*, San Francisco.
30. **Ö. Akgiray** and J. Heydweiller. "Adaptive Polynomial Approximations for Optimal Reactor Profiles," *1988 AIChE Annual Meeting*, Washington.
31. J. Heydweiller and **Ö. Akgiray**. "Adaptive Polynomial Approximations for Optimal Catalyst Profiles," *1987 AIChE Annual Meeting*, New York.

4. Uluslararası Konferanslarda Sunulan Poster Tebliğler:

1. Soyer, E., **Akgiray, Ö.**, Eldem, N.Ö., Saatçı, A.M. (2011) The use of anthracite-sand dual media in rapid filtration and comparison with silica sand. *4th IWA-ASPIRE Conference and Exhibition: Toward Sustainable Water Supply and Recycling Systems*, 2-6 October 2011, Tokyo, Japan.
2. E. Soyer, **Ö. Akgiray**, and E. Yüksel. "Preozonation Effects on Direct Filtration." *IWA World Water Congress*, 19-24 September 2004, Marrakech.
3. **Ö. Akgiray**, N. Eldem, İ. Öztürk, E. Soyer, and B. Çallı. "Modeling Ammonia and pH Inhibition in Anaerobic Treatment." *IWA World Water Congress*, 19-24 September 2004, Marrakech.

5. Ulusal Dergilerdeki yayınlar:

1. E. Soyer, **Ö. Akgiray**, N. Ö. Eldem, A. M. Saatçı (2011) "Çift tabakalı filtreler: Türkiye şartlarına uygun bir tasarım ve değerlendirme" *İTÜ Dergisi – e/Su Kirlenmesi Kontrolü*, Cilt:21, Sayı:2, Sayfalar: 13-22.
2. Erdim, E., Demir, İ., **Akgiray, Ö.** (2010) "Farklı filtre malzemeleri için temiz yatak yük kayıplarının belirlenmesi" *İTÜ Dergisi – e/Su Kirlenmesi Kontrolü*, Cilt 20, Sayı:1, Sayfalar: 111-119.
3. Soyer, E., Sarıkaya, H.Z., **Akgiray, Ö.** (2009) "Küresel olmayan malzemelerin akışkanlaşma sırasındaki davranışlarının incelenmesi" *İTÜ Dergisi – d/Mühendislik Serisi*, Cilt 8, Sayı 6, syf. 3-12.
4. **Ö. Akgiray**. "İçme Sularında Florür," *Tesisat Dergisi*, Aralık 2003.
5. **Ö. Akgiray**. "İçme Sularının Dezenfeksiyonunda Temel Prensipler," *Tesisat Dergisi*, Kasım 2003.
6. **Ö. Akgiray**. "Su ve Atıksuların Arıtımında Klor Kullanımı," *Tesisat Dergisi*, Eylül 2003.
7. **Ö. Akgiray**. "İçme Sularında Demir ve Manganez Problemi," *Tesisat Dergisi*, Ağustos 2003.
8. **Ö. Akgiray**. "İçme Suyu Arıtma Teknolojileri," *Tesisat Dergisi*, Haziran 2003.
9. **Ö. Akgiray**. "İçme Suyu Kalitesi Parametreleri," *Tesisat Dergisi*, Mayıs 2003.

6. Ulusal Sempozyum/Kongre/Konferans Bildirileri:

1. M. Eyvaz, Tuğrul Selami Aktaş, Ebubekir Yüksel, **Ömer Akgiray**, Ahmet Mete Saatçı, "Yüzeysel Suların Direkt Filtrasyonunda Kesikli Polielektrolit İlavesinin Filtre Verimi ve Su Kalitesine Etkisi", *Su Tüketimi, Arıtma Yeniden Kullanım Sempozyumu*, 3-5 Eylül 2008, İznik-Bursa.
2. **Ö. Akgiray**. "İçme Suyu ve Su Arıtımı", *22 Mart Dünya Su Günü: Suyumuzun Geleceği ve Türkiye Su Politikaları Paneli*, Su Vakfı, 2003.
3. B. Çallı, B. İnanç ve **Ö. Akgiray**. "İlaç Endüstrisi Atıksularının Anaerobik Arıtımında Toksikite ve Giderilmesi Üzerine Bir Araştırma," *İTÜ 6. Endüstriyel Kirlenme Kontrolü Sempozyumu*, 3-5 Haziran 1998, İstanbul.

4. **Ö. Akgiray** and A. M. Saatçı. "Büyükçekmece Tasfiye Tesisi Filtrelerinin Azalan Debiliye Dönüştürülmesi," *İSKİ/İTÜ/Su Vakfı Su Kaynaklarının Korunması ve İşletilmesi Sempozyumu*, Haziran 1997, İstanbul.
5. **Ö. Akgiray** and A. M. Saatçı. "Azalan Debili Filtrasyon," *İSKİ/İTÜ İçme Suyu Sempozyumu*, Ekim 1996, İstanbul.

7. Lisans Ders Kitabı:

Ö. Akgiray (2000) "Programming in FORTRAN" (1996-2011 yılları arasında ES 124/CSE 123 dersinde kullanıldı).

8. Ulusal Kitap:

Çevre El Kitapları, 2015. "Su Arıtma Tesisi İşletme El Kitabı." Ahmet Saatçı, **Ömer Akgiray**, Elif Soyer, Esra Erdim, Selda Yiğit Huncce. Türkiye Belediyeler Birliği. ([Kitap](#))

9. Davetli Konuşmacı Olarak Katıldığı Organizasyonlar:

2015	Sağlıklı Su Yönetimi Kongresi/ 20 - 22 Mayıs 2015 / Erzurum
2013	3W Istanbul 2013 Istanbul International Solid Waste, Water & Wastewater Congress
2010	SU VE SAĞLIK SEMPOZYUMU, 1.KORUYUCU HEKİMLİK GÜNLERİ, Ankara
2009	Sağlık Bakanlığı Sempozyumu, Nisan 2009 Antalya
2008	İSKİ 16 Haziran 2008
2008	DSİ Temmuz 2008 Maltepe Eğitim Tesisleri, İstanbul
2008	Dünya Su Günü 21-22 Mart 2008 (World Water Forum) İstanbul
2008	Vakıflar Genel Müdürlüğü, Ankara, Mayıs 2008
2007	DSİ İçme Suyu Semineri 3-7 Temmuz 2007 İstanbul