

Prof. ÖMER AKGİRAY

Personal Information

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Biography

Prof. Dr. Ömer Akgiray, 1962 yılında İstanbul'da doğdu. 1984 yılında Boğaziçi Üniversitesi Kimya Mühendisliği Bölümü'nde lisans eğitimini tamamlayan Akgiray, aynı yıl lisansüstü çalışmalar yapmak üzere ABD'ne gitti. Syracuse Üniversitesi'nde önce 1986 yılında Kimya Mühendisliği yüksek lisans öğrenimini bitirdi ve ardından 1989 yılında Matematik yüksek lisans derecesini aldı. Kimya Mühendisliği doktorasını aynı üniversitede 1990 senesinde tamamladı. 1984-1990 senelerindeki akademik çalışmaları sırasında Syracuse Üniversitesi tarafından araştırma görevlisi ve karşılıksız bursiyer olarak desteklendi. 1990-1993 Senelerinde San Diego'da Biosym Technologies firmasında önce yazılım mühendisi ve sonra polimer araştırmacısı olarak çalıştı. 1993 Senesinde Marmara Üniversitesi'ne Yardımcı Doçent olarak katılan Ömer Akgiray, 1998'de Doçent ve 2004 yılında Profesör ünvanını aldı. Marmara Üniversitesi'nde Su ve Atıksu Arıtma Teknolojileri üzerine bilimsel çalışmalar sürdüren Akgiray, TÜBİTAK BAYG/BİDEB Yürütme Komitesi Üyeliği (2004-2010) ve DSİ Su Arıtma Teknolojileri Danışmanlığı (2005-2009) görevlerini de yürüttü. Marmara Üniversitesi Çevre Mühendisliği Bölümü'nde 1993-2011 senelerinde Bölüm Başkan Yardımcısı, 2011-2018 senelerinde Bölüm Başkanı olarak görev yaptı. Üniversitemizde BAPKO Öndeğerlendirme Komisyonu Üyeliği, FBE Çevre Bilimleri ve Çevre Mühendisliği programlarında ABD Başkanlığı, Mühendislik Fakültesi'nde Yönetim Kurulu Üyeliği, Fakülte Kurulu Üyeliği, Üniversite Senatosu Üyeliği ve Üniversite Yönetim Kurulu Üyeliği gibi birçok idarî görevler üstlenen Akgiray, 2017 Yılından beri Mühendislik Fakültesi Dekanı olarak görev yapmaktadır.

Education Information

Doctorate, Syracuse University, Engineering, Chemical Engineering & Materials Science, United States Of America 1986 - 1990

Post Graduate, Syracuse University, College of Arts & Sciences, Mathematics, United States Of America 1986 - 1989

Post Graduate, Syracuse University, Engineering, Chemical Engineering & Materials Science, United States Of America 1984 - 1986

Under Graduate, Boğaziçi Üniversitesi, Mühendislik Fakültesi, Kimya Mühendisliği Bölümü, Turkey 1980 - 1984

Foreign Languages

English, C2 Proficiency

Dissertations

Doctorate, Process design using optimal control methodology, Syracuse University, Kimya Mühendisliği, 1990

Post Graduate, A Gradient Approximation Strategy for Chemical Process Optimization, Syracuse University, Kimya Mühendisliği, 1986

Research Areas

Environmental Technology, Water Pollution and Control, Water Supply and Treatment, Fluid Mechanics, Mechanical Physical Operations, Hydraulic

Academic Titles / Tasks

Professor, Marmara University, Faculty of Engineering, Environmental Engineering, 2004 - Continues
Associate Professor, Marmara University, Faculty of Engineering, Environmental Engineering, 1999 - 2004
Assistant Professor, Marmara University, Faculty of Engineering, Environmental Engineering, 1993 - 1999

Professional Experience

Vice Rector, Marmara University, Faculty of Engineering, Environmental Engineering, 2018 - Continues
Dean, Marmara University, Faculty of Engineering, 2017 - Continues
Head of Department, Marmara University, Faculty of Engineering, Environmental Engineering, 2013 - Continues
Head of Department, Marmara University, Faculty of Engineering, Environmental Engineering, 2011 - 2018
Deputy Head of Department, Marmara University, Faculty of Engineering, Environmental Engineering, 1993 - 2011
Scientist & Scientific Programmer, Biosym Technologies, San Diego, USA, 1990 - 1993

Courses

Calculus II, Under Graduate, 2015 - 2016, 2016 - 2017, 2017 - 2018
Differential Equations, Under Graduate, 2015 - 2016, 2016 - 2017, 2017 - 2018
Calculus I, Under Graduate, 2015 - 2016, 2016 - 2017, 2017 - 2018

Advising Theses

AKGİRAY Ö., An experimental investigation of wall effects in liquid-solid fluidization, Post Graduate, Ö.KAPLAN(Student), 2017
AKGİRAY Ö., Filter backwash hydraulics: An investigation on porous and non-spherical media, Doctorate, S.YİĞİT(Student), 2016
AKGİRAY Ö., Azalan debili filtrasyon, Doctorate, M.EYVAZ(Student), 2013
Akgiray Ö., Küresel Olmayan Malzemelerin Sabit Yatak Hidroliği, Doctorate, E.ERDİM(Student), 2010
Akgiray Ö., Küresel Olmayan Malzemelerin Akışkanlaşma Sırasındaki Davranışlarının İncelenmesi, Doctorate, E.SOYER(Student), 2008
AKGİRAY Ö., Identification of nitrifier diversity and activity in biological wastewater treatment systems, Post Graduate, N.GÜLER(Student), 2006
AKGİRAY Ö., Investigation of microbial communities in sanitary and bioreactor landfills, Doctorate, B.MERTOĞLU(Student), 2005
AKGİRAY Ö., An experimental investigation of certain aspects of water filtration, Post Graduate, S.BURCU(Student), 2004
AKGİRAY Ö., Thermolysis of solid residue from olive oil production, Post Graduate, Ö.DOĞAN(Student), 2003
AKGİRAY Ö., Design, construction and operation of pilot declining rate filters in Kağıthane water treatment plant, Post Graduate, H.FATİH(Student), 2000

Articles Published in Journals That Entered SCI, SSCI and AHCI Indexes

- I. **Use of filterability index in granular filtration: effect of filter medium type, size and shape**
Hunçe S. Y. , Soyer E., Akgiray Ö.
WATER SCIENCE AND TECHNOLOGY-WATER SUPPLY, vol.19, pp.382-391, 2019 (Journal Indexed in SCI)
- II. **On the backwash expansion of graded filter media**
Hunçe S. Y. , Soyer E., Akgiray Ö.
POWDER TECHNOLOGY, vol.333, pp.262-268, 2018 (Journal Indexed in SCI)
- III. **Characterization of apricot stone shells as a rapid filter medium**
Soyer E., Hunçe S. Y. , Akgiray Ö.
DESALINATION AND WATER TREATMENT, vol.93, pp.318-323, 2017 (Journal Indexed in SCI)
- IV. **Characterization of Granular Materials with Internal Pores for Hydraulic Calculations Involving Fixed and Fluidized Beds**
Hunçe S. Y. , Soyer E., Akgiray Ö.
INDUSTRIAL & ENGINEERING CHEMISTRY RESEARCH, vol.55, pp.8636-8651, 2016 (Journal Indexed in SCI)
- V. **A revisit of pressure drop-flow rate correlations for packed beds of spheres**
Erdim E., Akgiray Ö., Demir İ.
POWDER TECHNOLOGY, vol.283, pp.488-504, 2015 (Journal Indexed in SCI)
- VI. **An experimental investigation on the hydraulic behavior of declining rate filtration**
Eyvaz M., Akgiray Ö., Yüksel E.
DESALINATION AND WATER TREATMENT, vol.51, pp.6137-6147, 2013 (Journal Indexed in SCI)
- VII. **On the Use of Crushed Recycled Glass Instead of Silica Sand in Dual-Media Filters**
Soyer E., Akgiray Ö., Eldem N. O. , Saatci A. M.
CLEAN-SOIL AIR WATER, vol.41, pp.325-332, 2013 (Journal Indexed in SCI)
- VIII. **Crushed recycled glass as a filter medium and comparison with silica sand**
Soyer E., AKGİRAY Ö., Eldem N. O. , Saatci A. M.
CLEAN-SOIL AIR WATER, vol.38, pp.927-935, 2010 (Journal Indexed in SCI)
- IX. **A new simple equation for the prediction of filter expansion during backwashing**
Soyer E., AKGİRAY Ö.
JOURNAL OF WATER SUPPLY RESEARCH AND TECHNOLOGY-AQUA, vol.58, pp.336-345, 2009 (Journal Indexed in SCI)
- X. **An evaluation of expansion equations for fluidized solid-liquid systems**
Akgiray O., Soyer E.
JOURNAL OF WATER SUPPLY RESEARCH AND TECHNOLOGY-AQUA, vol.55, pp.517-526, 2006 (Journal Indexed in SCI)
- XI. **Reply to the discussion by T.S.W. Wong on "Explicit solutions of the Manning equation for partially filled circular pipes"**
Akgiray O.
CANADIAN JOURNAL OF CIVIL ENGINEERING, vol.33, pp.353-354, 2006 (Journal Indexed in SCI)
- XII. **Reply to the discussion by W.H. Hager on "Explicit solutions of the Manning equation for partially filled circular pipes"**
Akgiray O.
CANADIAN JOURNAL OF CIVIL ENGINEERING, vol.33, pp.351-352, 2006 (Journal Indexed in SCI)
- XIII. **Explicit solutions of the Manning equation for partially filled circular pipes**
Akgiray O.
CANADIAN JOURNAL OF CIVIL ENGINEERING, vol.32, pp.490-499, 2005 (Journal Indexed in SCI)
- XIV. **Ammonia and pH inhibition in anaerobic treatment of wastewaters, part I: Experimental**
Eldem N. Ö. , Öztürk İ., Soyer E., ÇALLI B., AKGİRAY Ö.
Journal of Environmental Science and Health - Part A Toxic/Hazardous Substances and Environmental Engineering, vol.39, pp.2405-2420, 2004 (Journal Indexed in SCI)
- XV. **Ammonia and pH inhibition in anaerobic treatment of wastewaters, part II: Model development**
Eldem N. Ö. , AKGİRAY Ö., Öztürk İ., Soyer E., ÇALLI B.
Journal of Environmental Science and Health - Part A Toxic/Hazardous Substances and Environmental

- Engineering, vol.39, pp.2421-2435, 2004 (Journal Indexed in SCI)
- XVI. **Simple formulae for velocity, depth of flow, and slope calculations in partially filled circular pipes**
Akgiray O.
ENVIRONMENTAL ENGINEERING SCIENCE, vol.21, pp.371-385, 2004 (Journal Indexed in SCI)
- XVII. **On the use of crushed shells of apricot stones as the upper layer in dual media filters**
Aksoğan S., Baştürk A., Yüksel E., AKGİRAY Ö.
Water Science and Technology, vol.48, pp.497-503, 2004 (Journal Indexed in SCI Expanded)
- XVIII. **Direct filtration with preozonation for small water treatment systems**
YÜKSEL E., AKGİRAY Ö., SOYER E.
WATER SCIENCE AND TECHNOLOGY, vol.48, pp.473-479, 2003 (Journal Indexed in SCI)
- XIX. **Effect of ozone injection location on filter performance in direct filtration**
Yüksel E., Akgiray Ö., Saatci A., Sarıkaya H., Koyuncu I.
WATER SCIENCE AND TECHNOLOGY, vol.46, pp.171-177, 2002 (Journal Indexed in SCI)
- XX. **An algorithm for bank operation of declining rate filters**
AKGİRAY Ö., Saatçi A. M.
Water Research, vol.32, pp.2095-2105, 1998 (Journal Indexed in SCI)
- XXI. **A critical look at declining rate filter design Water Science and Technology**
AKGİRAY Ö., Ahmet Mete S.
Water Science And Technology, vol.38, pp.89-96, 1998 (Journal Indexed in SCI Expanded)
- XXII. **Computer simulation of the formation of polymer networks**
Akgiray O.
Makromolekulare Chemie. Macromolecular Symposia, vol.76, pp.211-218, 1993 (Journal Indexed in SCI)

Articles Published in Other Journals

- I. **Çift tabakalı filtreler: Türkiye şartlarına uygun bir tasarım ve değerlendirme**
Soyer E., Akgiray Ö.
İTÜ Dergisi/E Su Kirlenmesi Kontrolü, vol.21, pp.13-22, 2011 (National Refreed University Journal)
- II. **Farklı filtre malzemeleri için temiz yatak yük kayıplarının belirlenmesi**
Erdim E., Demir İ., Akgiray Ö.
itüdergisi/e Su Kirlenmesi Kontrolü, vol.20, pp.111-119, 2010 (National Refreed University Journal)
- III. **Küresel olmayan malzemelerin akışkanlaşma sırasındaki davranışlarının incelenmesi**
Soyer E., Akgiray Ö.
itüdergisi/d mühendislik, vol.8, pp.3-12, 2009 (National Refreed University Journal)
- IV. **Prediction of filter expansion during backwashing**
AKGİRAY Ö., Soyer E., Yüksel E.
Water Science and Technology: Water Supply, vol.4, pp.131-138, 2004 (Refereed Journals of Other Institutions)
- V. **A new look at filter backwash hydraulics**
AKGİRAY Ö., Ahmet Mete S.
Water Science and Technology: Water Supply, vol.1, pp.65-72, 2001 (Refereed Journals of Other Institutions)

Books & Book Chapters

- I. **Su Arıtma Tesisleri İşletimi**
SAATÇI A. M. , AKGİRAY Ö., SOYER E., ERDİM E., YİĞİT HUNCE S.
Korza Yayıncılık Basım San. ve Tic. A.Ş., Ankara, 2016
- II. **Su Arıtma Tesisleri İşletimi El Kitabı**
Ahmet Mete S., AKGİRAY Ö., SOYER E., ERDİM E., YİĞİT HUNCE S.
Korza Yayıncılık Basım San. ve Tic. A.Ş., Ankara, 2016

III. Computer Simulation of Polymer Network Formation

Eichinger B. E. , Akgiray Ö.

in: Computer Simulation of Polymers, E.A.Colbourne, Editor, Longman see Addison-Wesley Longman, London, pp.1, 1994

Refereed Congress / Symposium Publications in Proceedings

- I. **On the Backwash Expansion of Non-Uniform and Non-Spherical Filter Media**
YİĞİT HUNCE S., SOYER E., AKGİRAY Ö.
IWA-PPFW2017, 2nd IWA Regional Symposium on Water, Wastewater and Environment, İzmir, Turkey, 22 - 24 March 2017
- II. **Use of Filterability Index in Granular Filtration: Effect of Filter Medium Pretreatment Conditions**
SOYER E., YİĞİT HUNCE S., AKGİRAY Ö.
IWA-PPFW2017, 2nd IWA Regional Symposium on Water, Wastewater and Environment, İzmir, Turkey, 22 - 24 March 2017
- III. **An Experimental Investigation of Wall Effects in Liquid-Solid Fluidization**
KAPLAN Ö., SOYER E., AKGİRAY Ö.
IWA-PPFW2017, 2nd IWA Regional Symposium on Water, Wastewater and Environment, İzmir, Turkey, 22 - 24 March 2017
- IV. **Preparation and Characterization of Apricot Stone Shells for Rapid Filters**
YİĞİT HUNCE S., SOYER E., AKGİRAY Ö.
3rd International Conference on Recycling and Reuse, İstanbul, Turkey, 28 - 30 September 2016
- V. **Characterization of Natural Zeolite for Granular Bed Filters**
YİĞİT HUNCE S., SOYER E., AKGİRAY Ö.
International Porous and Powder Materials Symposium and Exhibition, İzmir, Turkey, 15 - 18 September 2015, pp.294-298
- VI. **İçme Suyu Arıtma Teknolojileri**
AKGİRAY Ö.
Sağlıklı Su Yönetimi Kongresi, Erzurum, Turkey, 20 - 22 May 2015, pp.49
- VII. **Recycled Material in Water Filtration The Effect of Media Grain Shape**
SOYER E., YİĞİT HUNCE S., YILMAZ Z., BABAOĞLU C., ÜLKÜ Z. M. , AKGİRAY Ö.
2nd International Conference on Recycling & Reuse (R&R 2014), İstanbul, Turkey, İstanbul, Turkey, 4 - 06 June 2014
- VIII. **Particle Characterization of Crushed Recycled Glass**
YİĞİT HUNCE S., SOYER E., AKGİRAY Ö.
2nd International Conference on Recycling & Reuse (R&R 2014), İstanbul, Turkey, İstanbul, Turkey, 4 - 06 June 2014
- IX. **The use of anthracite sand dual media in rapid filtration and comparison with silica sand**
SOYER E., AKGİRAY Ö., ELDEM N., SAATÇI A. M.
4th IWA-ASPIRE Conference and Exhibition: Toward Sustainable Water Supply and Recycling Systems, 2-6 October 2011, Tokyo, Japan, Tokyo, Japan, 2 - 06 October 2011
- X. **Kirlenmiş Havzalardan Beslenen İçme Suyu Arıtma Tesisleri için İyileştirme Teknikleri**
SOYER E., ERDİM E., AKGİRAY Ö., SAATÇI A. M.
Kent Yönetimi İnsan ve Çevre Sorunları Sempozyumu, İstanbul, İstanbul, Turkey, 3 - 06 November 2008
- XI. **Expansion of Non Spherical Media during Fluidization**
AKGİRAY Ö., SOYER E.
Proceedings of IWA International Conference on Particle Separation, Seoul, S. Korea, Seoul, South Korea, 1 - 03 June 2005
- XII. **Preozonation Effects on Direct Filtration**
SOYER E., AKGİRAY Ö., YÜKSEL E.

World Water Congress, Marrakech, Morocco, Marrakech, Morocco, 19 - 24 September 2004

XIII. Modelling Ammonia and pH Inhibition in Anaerobic Treatment

AKGİRAY Ö., ELDEM N., ÖZTÜRK İ., SOYER E., ÇALLI B.

IWA 4th World Water Congress, Marrakech, Morocco, Marrakech, Morocco, 19 - 24 September 2004

XIV. Ammonia and pH inhibition in anaerobic treatment

Akgiray Ö.

10th World Congress on Anaerobic Digestion (AD10-2004), Montreal, Canada, 29 August - 02 September 2004, pp.306-311

XV. Direct Filtration with Preozonation for Small Water Treatment Systems

YÜKSEL E., AKGİRAY Ö., SOYER E.

5th Specialized Conference on Small Water and Wastewater Treatment Systems, Istanbul, Turkey, İstanbul, Turkey, 24 - 26 September 2002

XVI. Optimal Temperature Control Policy for Parallel Reactions in a Batch Reactor

Akgiray Ö., Heydweiller J. C.

Annual Meeting of AIChE, Illinois, United States Of America, 11 - 16 November 1990, pp.1-14

XVII. Numerical Methods for Optimal Control Problems

Akgiray Ö., Heydweiller J. C.

Annual Meeting of AIChE, Illinois, United States Of America, 11 - 16 November 1990, pp.1-40

Supported Projects

Akgiray Ö., Project Supported by Higher Education Institutions, Mühendislik Fakültesinin Bilimsel Zenginliklerinin Bilgi ve Teknoloji Transferi Yönünden Değerlendirilmesi ve İyileştirilmesi, 2018 - 2020

Akgiray Ö., TUBITAK Project, Sıvı-Katı Akışkanlaşmasında Duvar Etkisinin Deneysel Olarak Araştırılması, 2017 - 2018

Akgiray Ö., TUBITAK Project, Marmara Üniversitesi Ar Ge Strateji Belgesi Çevre Teknolojileri, 2016 - 2018

Can Z. S. , Kocamemi B., Akgiray Ö., Project Supported by Other Official Institutions, Pilot Granular Activated Carbon Study for Potable Water , 2016 - 2016

Akgiray Ö., TUBITAK Project, Farklı Özelliklerdeki Parçacıklardan Oluşan Granüler Yatakların Sıvılarla Akışkanlaşması Sırasındaki Genişlemesi, 2012 - 2014

Akgiray Ö., TUBITAK Project, Hızlı Filtrasyonda Çift Malzemeli Filtre Yatağı ve Geri Kazanılmış Pulverize Cam Kullanımı ve Silika Kumu ile Mukayesesi, 2005 - 2007

Invited Congress and Symposium Activities

Sağlıklı Su Yönetimi Kongresi, Invited Speaker, Erzurum, Turkey, 2015

3W International Solid Waste, Water & Wastewater Congress, Invited Speaker, İstanbul, Turkey, 2013

Citations

Total Citations (WOS):185

h-index (WOS):9