

Prof. PINAR ZEYNEP ÇULFAZ EMECEN

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Publons / Web Of Science ResearcherID: ABA-3189-2020

ScopusID: 56377303500

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Education Information

Doctorate, Universiteit Twente, Kimya Mühendisliği/Membran Bilimi Ve Teknolojisi, Netherlands 2006 - 2010

Postgraduate, Middle East Technical University, Graduate School of Natural and Applied Sciences, Kimya Mühendisliği (YI) (Tezli), Turkey 2003 - 2005

Undergraduate, Middle East Technical University, Faculty of Engineering, Department of Chemical Engineering, Turkey 1999 - 2003

Foreign Languages

English, C1 Advanced

Dissertations

Doctorate, Microstructured hollow fibers and microsieves: Fabrication, characterization and filtration applications, Universiteit Twente, Kimya Mühendisliği/Membran Bilimi Ve Teknolojisi, 2010

Postgraduate, Synthesis of MFI type zeolite membranes in a continuous system, Middle East Technical University, Graduate School of Natural and Applied Sciences, Kimya Mühendisliği (YI) (Tezli), 2005

Research Areas

Chemical Engineering and Technology, Chemical Technologies, Basic Operations and Thermodynamics, Engineering and Technology

Academic Titles / Tasks

Associate Professor, Middle East Technical University, Faculty of Engineering, Department of Chemical Engineering, 2017 - Continues

Assistant Professor, Middle East Technical University, Faculty of Engineering, Department of Chemical Engineering, 2011 - 2017

Research Assistant, Middle East Technical University, Faculty of Engineering, Department of Chemical Engineering, 2003

Advising Theses

- Erel Göktepe İ., Çulfaz Emecen P. Z., Nanocellulose membranes via layer-by-layer assembly, Postgraduate, O.KAAN(Student), 2024
- Çulfaz Emecen P. Z., Cellulose ultrafiltration membranes for separation of nanoparticles from organic solvents, Postgraduate, F.ÖZÇELİK(Student), 2023
- Büküşoğlu E., Çulfaz Emecen P. Z., Membrane fabrication via shear induced deposition and chemical stabilization of cellulose nanocrystals, Postgraduate, B.CAN(Student), 2023
- ÇULFAZ EMECEN P. Z., Effect of solvent choice on cellulose acetate membrane fabrication by phase inversion and deacetylation by alkaline hydrolysis, Postgraduate, F.SEDEN(Student), 2022
- ÇULFAZ EMECEN P. Z., BÜKÜŞOĞLU E., Processing cellulose nanocrystal suspensions for aligned deposition, Postgraduate, C.KOCAMAN(Student), 2022
- ÇULFAZ EMECEN P. Z., Application of ultrafiltration and nanofiltration processes in petroleum industry, Postgraduate, I.DİZVAY(Student), 2022
- Çulfaz Emecen P. Z., Cellulose membranes via alkaline hydrolysis of cellulose acetate membranes and their application in organic solvents, Postgraduate, Z.İmir(Student), 2019
- ÇULFAZ EMECEN P. Z., USE OF IONIC STRENGTH RESPONSIVE POLYMERIC MICROGELS FOR FOULING REMOVAL IN MEMBRANE FILTRATION, Postgraduate, F.ÇALILI(Student), 2019
- ÇULFAZ EMECEN P. Z., Effect of crosslinking on organic solvent nanofiltration performance of cellulose membranes, Postgraduate, K.KONCA(Student), 2018
- ÇULFAZ EMECEN P. Z., Responsive polymer particles for fouling removal during membrane filtrations, Postgraduate, C.AKSOY(Student), 2018
- ÇULFAZ EMECEN P. Z., Fabrication of helical polymeric hollow fiber membranes and characterization of their fouling behaviours, Postgraduate, H.YÜCEL(Student), 2018
- ÇULFAZ EMECEN P. Z., BAT E., Production of graphene oxide and polymer based nanocomposite microsieves via breath figure method, Postgraduate, A.ELİF(Student), 2017
- ÇULFAZ EMECEN P. Z., Investigation of phase inversion behavior of cellulose-ionic liquid solutions in relationship with membrane formation, Postgraduate, E.NUR(Student), 2017
- ÇULFAZ EMECEN P. Z., YETİŞ Ü., Fouling analysis for different ultrafiltration membranes in reactive dyeing wastewater treatment, Postgraduate, R.DİLARA(Student), 2017
- ÇULFAZ EMECEN P. Z., YETİŞ Ü., Process optimization on clean water recovery from real reactive dyeing effluents by nanofiltration, Postgraduate, B.KOÇER(Student), 2017
- ÇULFAZ EMECEN P. Z., BAT E., Investigation of parameters affecting morphologies of microfiltration and ultrafiltration membranes fabricated via phase separation microfabrication, Postgraduate, C.KAAN(Student), 2017
- ÇULFAZ EMECEN P. Z., BAT E., Investigation of parameters affecting morphology of microfiltration and ultrafiltration membranes fabricated via phase separation microfabrication, Postgraduate, C.Kaan(Student), 2017
- ÇALIK P., ÇULFAZ EMECEN P. Z., Separation and purification of recombinant proteins by using ultrafiltration membranes, Postgraduate, B.AKCAN(Student), 2017
- ÇULFAZ EMECEN P. Z., ÇALIK P., Separation and purification of recombinant proteins by using ultrafiltration membranes, Postgraduate, B.Akcan(Student), 2017
- ÇULFAZ EMECEN P. Z., YETİŞ Ü., Treatment of reactive dyeing wastewater and recovery of brackish water by applying ultrafiltration, Postgraduate, M.ERKANLI(Student), 2016
- ÇULFAZ EMECEN P. Z., Cellulose membranes for organic solvent nanofiltration, Postgraduate, F.MUHAMMAD(Student), 2016
- ÇULFAZ EMECEN P. Z., Fabrication and characterization of corrugated microfiltration membranes, Postgraduate, Y.GENÇAL(Student), 2014
- ÇULFAZ EMECEN P. Z., KALIPÇILAR H., Fabrication of polyethersulfone hollow fibers for ultrafiltration, Postgraduate, G.KALTALI(Student), 2014

Refereed Congress / Symposium Publications in Proceedings

- I. **Phase Inversion Kinetics of Polymer Ionic Liquid Solutions in Relation with Membrane Morphology and Macrovoid Formation**
DURMAZ E. N., ÇULFAZ EMECEN P. Z.
MACRO 2016 46th World Polymer Congress, 17 July 2016 - 21 July 2106
- II. **Use of stimuli-responsive polymeric microgels for fouling removal in membrane filtrations**
Aksoy C., Kaner P., Aro G., Asatekin A., Çulfaz Emecen P. Z.
Fifth International Symposium Frontiers in Polymer Science, Sevilla, Spain, 17 - 19 May 2017
- III. **Fabrication of cellulose membranes via phase inversion using ionic liquids as solvents**
Durmaz E. N., Çulfaz Emecen P. Z.
Fifth International Symposium Frontiers in Polymer Science, Sevilla, Spain, 17 - 19 May 2017
- IV. **Cellulose ultrafiltration membranes for cleaning solvent wastes of photolithography process**
Savaş Alkan A., Çulfaz Emecen P. Z.
ICOM 12th International Congress on Membranes and Membrane Processes, London, United Kingdom, 7 - 11 December 2020, pp.1513
- V. **Helical hollow fiber membranes via rope coiling**
Yücel H., Çulfaz Emecen P. Z.
Engineering With Membranes EWM 2019, Malmö, Sweden, 8 - 10 April 2019, pp.47
- VI. **Temperature responsive polymeric microgels for fouling removal during membrane filtrations**
Aksoy C., Kaner P., Saksiriwatekul M., Asatekin A., Çulfaz Emecen P. Z.
Euromembrane 2018, Valencia, Spain, 9 - 13 July 2018, pp.217-218
- VII. **Cellulose membranes for Organic Solvent Nanofiltration**
Sukma F., Konca K., Çulfaz Emecen P. Z.
North American Membrane Society Annual Meeting, Kentucky, United States Of America, 9 - 13 June 2018, pp.76-78
- VIII. **ÇÖZÜCÜYE DAYANIKLI NANOFİLTRASYON UYGULAMALARI İÇİN SELÜLOZ MEMBRANLARIN GELİŞTİRİLMESİ**
ÇULFAZ EMECEN P. Z., DURMAZ E. N., SUKMA F. M., İMİR Z., KONCA K.
5. Ulusal Membran Teknolojileri ve Uygulamaları Sempozyumu (MEMTEK) 2017, Turkey, 21 - 23 September 2017
- IX. **Fabrication of Poly(PEGMA) Grafted Graphene Oxide and Polysulfone Based Porous Films via Breath Figure Method**
KIRATLI A. E., ÇULFAZ EMECEN P. Z., BAT E.
14th International Conference on Polymers for Advanced Technologies, Manchester, United Kingdom, 11 - 13 September 2017
- X. **Düşük Sıcaklıkta Berrak Çözeltilerden MFI Tİpi Zeolit Sentezi**
Dinçer E., Çulfaz Emecen P. Z., Çulfaz A., Kalıpçılar H.
UKMK 2004, İzmir, Turkey, 6 - 10 September 2004
- XI. **Fouling Analysis for Different UF Membranes in Reactive Dyeing Wastewater Treatment**
Zaf R. D., Koçer B., Erkanlı M., Yılmaz L., Yetiş Ü., Çulfaz Emecen P. Z.
Frontiers International Conference on Wastewater Treatment and Modelling, Palermo, Italy, 21 - 24 May 2017, pp.650-655
- XII. **Cellulose Membranes for Organic Solvent Nanofiltration**
sukma f. m., ÇULFAZ EMECEN P. Z.
MACRO 2016 46th World Polymer Congress, 17 - 21 July 2016
- XIII. **Process Optimization on Water Recovery From Real Reactive Dyeing Effluents**
Koçer B., ERKANLI M., ZAF R. D., YILMAZ L., YETİŞ Ü., ÇULFAZ EMECEN P. Z.
PERMEA, 15 - 19 May 2016
- XIV. **Celulose Membranes for Organic Solvent Nanofiltration**

ÇULFAZ EMECEN P. Z., FAQIH MUHAMMAD S., ELİF NUR D.

5th International Conference on Organic Solvent Nanofiltration, 17 - 19 November 2015

- XV. **Reaktif Boyama Atıksularının Ultrafiltrasyon ile Geri Kazanımı**
ERKANLI M., YILMAZ L., YETİŞ Ü., ÇULFAZ EMECEN P. Z.
5. Ulusal Membran Teknolojileri Sempozyumu, Turkey, 6 - 07 October 2015
- XVI. **Patterned microfiltration membranes for crossflow yeast filtration**
Gençal Y., Çulfaz Emecen P. Z., Durmaz E. N.
Euromembrane 2015, Aachen, Germany, 08 September 2015, pp.168
- XVII. **Effect of PEO containing additives on fouling behaviour of PES based ultra filtration membranes**
Kaltalı G., KALIPÇILAR H., ÇULFAZ EMECEN P. Z.
Euromembrane 2015, 7 - 10 September 2015
- XVIII. **Antimicrobial membranes from chlorinated poly ether sulfone**
ESRA NUR D., AKDAĞ A., ÇULFAZ EMECEN P. Z.
Euromembrane, 6 - 11 September 2015
- XIX. **Poli eter sülfon bazlı antimikrobiyal membran üretimi**
ESRA NUR D., AKDAĞ A., ÇULFAZ EMECEN P. Z.
27. Ulusal Kimya Kongresi, Turkey, 23 - 28 August 2015
- XX. **Oluklu yüzeylere sahip mikrofiltrasyon membranlarının hazırlanması ve karakterizasyonu**
GENÇAL Y., ÇULFAZ EMECEN P. Z.
Ulusal Kimya Mühendisliği Kongresi (UKMK 11), Eskişehir, Turkey, 2 - 06 September 2014
- XXI. **Kirlenmeye karşı dirençli poli eter sülfon ultrafiltrasyon membranlarının üretimi**
KALTALI G., KALIPÇILAR H., ÇULFAZ EMECEN P. Z.
Ulusal Kimya Mühendisliği Kongresi (UKMK 11), Eskişehir, Turkey, 2 - 05 September 2014
- XXII. **Purification and concentration of caustic mercerization wastewater by membrane processes and evaporation**
TUNÇ M. S., ÇULFAZ EMECEN P. Z., YILMAZ L., YETİŞ Ü.
International Conference on Applications of Nanotechnology in Membranes for Water Treatment, İzmir, Turkey, 8 - 10 October 2013
- XXIII. **Effect of casting solution and coagulation medium on the morphology of poly ether sulfone microfiltration membranes**
GENÇAL Y., ÇULFAZ EMECEN P. Z.
International Conference on Applications of Nanotechnology in Membranes for Water Treatment, İzmir, Turkey, 8 - 10 October 2013
- XXIV. **Membran prosesleri ve buharlaştırma ile kot kumaşı üretim tekstil endüstrisi mercerizasyon prosesi atıksularından kostik geri kazanımı**
TUNÇ M. S., ÇULFAZ EMECEN P. Z., YILMAZ L., YETİŞ Ü.
3. Ulusal Membran Teknolojileri ve Uygulamaları Sempozyumu, Elazığ, Turkey, 26 - 27 September 2013
- XXV. **Tekstil endüstrisi alkali atıksularından basınç sürücülü membran prosesleriyle kostik geri kazanımı**
TUNÇ M. S., ÇULFAZ EMECEN P. Z., YILMAZ L., YETİŞ Ü.
3. Ulusal Membran Teknolojileri ve Uygulamaları Sempozyumu, Elazığ, Turkey, 26 - 27 September 2013
- XXVI. **Alumina destekler üzerinde MFI tipi zeolit membran sentezi**
ÇULFAZ EMECEN P. Z., KALIPÇILAR H., ÇULFAZ A.
18. Ulusal Kimya Kongresi (2004), Kars, Turkey, 22 - 26 July 2013
- XXVII. **Hollow fiber membranes with microstructured inner skin**
Çulfaz Emecen P. Z., Wessling M., Lammertnk R. G.
North American Membrane Society/International Congress on Inorganic Membranes (NAMS/ICIM 2010), Washington, United States Of America, 22 - 26 July 2013
- XXVIII. **Kovuklu elyaf tipi polietersülfon ultrafiltrasyon membranlarının üretimi**
KALTALI G., KALIPÇILAR H., ÇULFAZ EMECEN P. Z.
10. Ulusal Kimya Mühendisliği Kongresi (UKMK 2012), Turkey, 3 - 06 September 2012
- XXIX. **Structured membranes**

Lammertink R., Bikel M., Çulfaz Z., Wessling M.

Euromembrane Conference 2012, Westminster, London, United Kingdom, 23 - 27 September 2012, vol.44, pp.316-317

- XXX. **Microstructured hollow fiber membranes for ultrafiltration**
ÇULFAZ EMECEN P. Z., ERIK R., LAMMERTINK R. G., WESSLING M.
International Water Association Regional Conference and Exhibition on Membrane Technology and Water Reuse (IWA-MTWR 2010), İstanbul, Turkey, 18 - 22 October 2010
- XXXI. **Microstructured hollow fiber membranes for ultrafiltration**
Çulfaz Emecen P. Z., Buetehorn S., Melin T., Lammertink R., Wessling M.
NAMS/ICIM 2010, Washington, United States Of America, 10 - 13 July 2010
- XXXII. **Microstructured hollow fiber membranes for ultrafiltration**
Çulfaz Emecen P. Z., Janı J., Lammertink R., Wessling M.
ICOM 2008, Hawaii, United States Of America, 12 - 18 July 2008
- XXXIII. **Structured membranes for water treatment**
LAMMERTINK R. G., ÇULFAZ EMECEN P. Z., NIJDAM W., WESSLING M.
American Chemical Society (ACS) 2008 Spring Meeting, New Orleans, United States Of America, 6 - 10 April 2008
- XXXIV. **Separation of butane isomers by MFI membranes synthesized in a flow system**
ÇULFAZ EMECEN P. Z., ÇULFAZ A., KALIPÇILAR H.
Euromembrane 2006, Taormina, Italy, 24 - 28 September 2006
- XXXV. **Sürekli akış sisteminde sentez edilen MFI tipi zeolit membranların tek gaz geçirgenlik ölçümleri ve çift gaz karışımlarının ayrımı ile karakterizasyonu**
SOYDAŞ SÖZER B., ÇULFAZ EMECEN P. Z., ÇULFAZ A., KALIPÇILAR H.
7. Ulusal Kimya Mühendisliği Kongresi (UKMK 2006), Eskişehir, Turkey, 5 - 08 September 2006
- XXXVI. **Effect of batch composition on the morphology of MFI films synthesized in a continuous system**
Çulfaz Emecen P. Z., Çulfaz A., Kalıpçılar H.
4th Eastern Mediterranean Chemical Engineering Conference, Tel-Aviv-Yafo, Israel, 9 - 11 January 2006, pp.14-17
- XXXVII. **Research on zeolite membranes in Chemical Engineering Department of Middle East Technical University**
KALIPÇILAR H., DİNÇER E., ÇULFAZ EMECEN P. Z., SOYDAŞ SÖZER B., ÇULFAZ A.
Application of Nanotechnologies for Separation and recovery of volatile organic compounds (ANVOC 2005), İstanbul, Turkey, 30 May - 01 June 2005

Supported Projects

Çulfaz Emecen P. Z., Erel Göktepe İ., Büküşoğlu E., Ondaral S., TUBITAK Project, Selüloz Nanokristal Ve Nanofibriller Kullanılarak Katman-Katman Kendiliğinden Yapılanma Yöntemi İle Nanofiltrasyon Membranlarının Geliştirilmesi, 2021 - 2024

ÇULFAZ EMECEN P. Z., İÇTEN B. C., BÜKÜŞOĞLU E., Project Supported by Higher Education Institutions, Selüloz nanokristal membranlar, 2022 - 2023

Baker D. K., Tari I., Okutucu Özyurt H. T., Akata Kurç B., Çulfaz Emecen P. Z., Kurt Z., Erden Topal Y., Taylan O., H2020 Project, SolarTwins: Solar Twinning to Create Solar Research Twins, 2020 - 2023

ÇULFAZ EMECEN P. Z., YILMAZ L., ÇAĞLAR T., Project Supported by Higher Education Institutions, Misel Destekli Ultrafiltrasyon ile Aseton-Bütanol-Etanol-Su Karışımlarından Bütanol Eldesi, 2020 - 2021

ÇULFAZ EMECEN P. Z., TUBITAK Project, Tamamı Selüloz Nanokompozit Membranların Organik Çözücü İle Nanofiltrasyon Performansının İncelenmesi, 2018 - 2019

ÇULFAZ EMECEN P. Z., TÜBİTAK International Bilateral Joint Cooperation Program Project, Membran Filtrasyonunda Kirlenmeyi Temizlemek Amaçlı Uyarana Duyarlı Polimerik Mikroenjellerin Kullanımı, 2017 - 2019

ÇALIK P., AKCAN B., ÇULFAZ EMECEN P. Z., Project Supported by Higher Education Institutions, Rekombinant İnsan Büyüme Hormonunun Ultrafiltrasyon İle Üretim Ortamından Ayrılması, 2016 - 2017

ÇULFAZ EMECEN P. Z., YÜCEL H., Project Supported by Higher Education Institutions, Kıvrımlı Kovuklu Elyaf

Membranların Üretimi ve Membran Kirlenmesinin Karakterizasyonu, 2016 - 2017

ÇulfaZ Emecen P. Z., Bat E., Kalıpçılar H., TUBITAK Project, TÜBİTAK MAG 115M635, 2015 - 2017

YILMAZ L., ÇULFAZ EMECEN P. Z., YETİŞ Ü., TUBITAK Project, Reaktif Boyama Atıksularının Temiz/Tuzlu Su Olarak GeriKazanımı: Membran Temelli Süreç Tasarımı Ve Membran Kirlenme Analizi, 2014 - 2017

ÇULFAZ EMECEN P. Z., SUKMA F. M., KONCA K., Project Supported by Higher Education Institutions, İyonik Sıvı-Selüloz Çözeltilerinden Membran Üretiminde Faz Değişim Özellikleri ve Çözücü Direncinin İncelenmesi, 2015 - 2016

ÇULFAZ EMECEN P. Z., Project Supported by Higher Education Institutions, FEN BİLİMLERİ ENSTİTÜSÜ/LİSANSÜSTÜ TEZ PROJESİ, 2014 - 2016

ÇULFAZ EMECEN P. Z., Project Supported by Higher Education Institutions, FEN BİLİMLERİ ENSTİTÜSÜ/LİSANSÜSTÜ TEZ PROJESİ, 2014 - 2016

ÇULFAZ EMECEN P. Z., Project Supported by Higher Education Institutions, FEN BİLİMLERİ ENSTİTÜSÜ/LİSANSÜSTÜ TEZ PROJESİ, 2014 - 2016

ÇULFAZ EMECEN P. Z., AKDAĞ A., DOĞRU E. N., Project Supported by Higher Education Institutions, Poli(eter sülfon) bazlı antimikrobiyel membranların hazırlanması ve biyokirlenme özelliklerinin incelenmesi, 2015 - 2015

ÇULFAZ EMECEN P. Z., Koçer B., YETİŞ Ü., Project Supported by Higher Education Institutions, REAKTİF BOYAMA ATIKSULARININ MEMBRAN SÜREÇLERİ İLE TEMİZ SU OLARAK GERİ KAZANIMI, 2014 - 2015

ÇULFAZ EMECEN P. Z., Ergün E. G., Project Supported by Higher Education Institutions, Lignoselülozik Biyokütleden Membran Üretimi, 2013 - 2014

ÇULFAZ EMECEN P. Z., KALTALI G., Project Supported by Higher Education Institutions, POLİETERSÜLFON (PES) BAZLI KOVUKLU ELYAF TİPİ ULTRAFİLTRASYON MEMBRANLARIN HAZIRLANMASI VE KİRLENME DAVRANIŞLARININ ANALİZİ, 2013 - 2013

ÇULFAZ EMECEN P. Z., KALIPÇILAR H., Kaltalı G., Project Supported by Higher Education Institutions, Polietersülfon Bazlı Kovuklu Elyaf Tipi Ultrafiltrasyon Membranlarının Hazırlanması Ve Karakterizasyonu., 2012 - 2013

Activities in Scientific Journals

Journal Of Membrane Science, Committee Member, 2021 - Continues

Scientific Refereeing

JOURNAL OF MEMBRANE SCIENCE, Journal Indexed in SCI-E, January 2023

JOURNAL OF APPLIED POLYMER SCIENCE, SCI Journal, December 2021

JOURNAL OF MEMBRANES SCIENCE, SCI Journal, December 2021

CARBOHYDRATE POLYMERS, SCI Journal, November 2021

JOURNAL OF MEMBRANE COMPUTING, SCI Journal, October 2021

JOURNAL OF MEMBRANES SCIENCE, SCI Journal, October 2021

JOURNAL OF MEMBRANES SCIENCE, SCI Journal, September 2021

DESALINATION, SCI Journal, August 2021

JOURNAL OF MEMBRANES SCIENCE, SCI Journal, August 2021

CELLULOSE, SCI Journal, July 2021

JOURNAL OF MEMBRANES SCIENCE, SCI Journal, June 2021

DESALINATION, SCI Journal, June 2021

JOURNAL OF MEMBRANES SCIENCE, SCI Journal, May 2021

JOURNAL OF MEMBRANES SCIENCE, SCI Journal, March 2021

ADVANCED ENGINEERING MATERIALS, SCI Journal, January 2021

CARBOHYDRATE POLYMERS, Journal Indexed in SCI-E, December 2019

JOURNAL OF MEMBRANE SCIENCE, Journal Indexed in SCI-E, September 2019

CELLULOSE, Journal Indexed in SCI-E, May 2019

JOURNAL OF MEMBRANE SCIENCE, Journal Indexed in SCI-E, May 2019

SEPARATION AND PURIFICATION TECHNOLOGY, Journal Indexed in SCI-E, May 2019

RSC ADVANCES, Journal Indexed in SCI-E, April 2019

JOURNAL OF MEMBRANE SCIENCE, Journal Indexed in SCI-E, March 2019

JOURNAL OF MEMBRANE SCIENCE, Journal Indexed in SCI-E, March 2019

Metrics

Publication: 67

Citation (WoS): 1116

Citation (Scopus): 1241

H-Index (WoS): 16

H-Index (Scopus): 16

Congress and Symposium Activities

Gordon Research Conference on Physics and Chemistry of Microfluidics, Invited Speaker, Lucca, Italy, 2023

9th Eastern Mediterranean Chemical Engineering Conference, EMCC 9, Invited Speaker, Ankara, Turkey, 2018

Non Academic Experience

Procter& Gamble Avrupa Teknik Merkezi (Brüksel, Belçika)

Ataş Petrol Rafinerisi (Mersin, Türkiye)