

Assoc. Prof. SELİS ÖNEL KAYRAN

Personal Information

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International Researcher IDs

ScholarID: 8dt3RK4AAAAJ

ORCID: 0000-0001-5184-0323

Publons / Web Of Science ResearcherID: G-6091-2013

ScopusID: 6602469110

Yoksis Researcher ID: 168555

Education Information

Post Doctorate, Harvard University, Harvard Tıp Fakültesi, Center For Engineering İn Medicine / Biyomedikal Muhendisligi, United States Of America 2010 - 2010

Post Doctorate, Harvard University, Harvard Tıp Fakültesi, Center For Engineering İn Medicine / Biyomedikal Muhendisligi, United States Of America 2009 - 2009

Post Doctorate, Harvard University, Harvard Tıp Fakültesi, Center For Engineering İn Medicine / Biyomedikal Muhendisligi, United States Of America 2008 - 2008

Doctorate, Northeastern University, Graduate School Of Engineering, Makina Muhendisligi, United States Of America 2000 - 2006

Postgraduate, Middle East Technical University, Graduate School Of Natural And Applied Sciences, Kimya Muhendisligi, Turkey 1997 - 2000

Undergraduate, Middle East Technical University, Faculty Of Engineering, Kimya Muhendisligi, Turkey 1992 - 1997

Foreign Languages

English, C1 Advanced

Dissertations

Doctorate, Comparison and extension of free dendritic growth models through application to silver-15 mass percent copper alloy, Northeastern University, Department Of Mechanical And Industrial Engineering, 2006

Postgraduate, Energy optimization of the yankee-hood dryer, Orta Doğu Teknik Üniversitesi, Risk Analizi A.B.D., Kimya Mühendisliği (YI) (Tezli), 2000

Research Areas

Biomedical Engineering, Bioengineering and MEMS, Bioinstrumentation and Microelectromechanical Systems (MEMS), Chemical Engineering and Technology, Biotechnology, Biomedical Engineering, Basic Operations and Thermodynamics, Thermodynamics, Heat Transfer, Transport Events, Mechanical Engineering, Construction and Manufacturing, Non-

traditional manufacturing methods, Thermodynamics, Heat and Mass Transfer, Computational fluid dynamics, Thermal Systems, Metallurgical and Materials Engineering, Material science and engineering, Chemical and Electrochemical Properties, Mathematics, Numerical Analysis, Natural Sciences, Engineering and Technology

Academic Titles / Tasks

Associate Professor, Hacettepe University, Mühendislik Fakültesi, Kimya Mühendisliği Bölümü, 2017 - Continues
Associate Professor, Middle East Technical University Northern Cyprus Campus, Engineering, Mechanical Engineering, 2018 - 2019
Associate Professor, National Defense University, Alparslan Defense Sciences Institute, Department Of Weapon Systems, 2017 - 2019
Researcher, Harvard University, Harvard Medical School / Massachusetts General Hospital, Biomedical Engineering, 2016 - 2017
Assistant Professor, Hacettepe University, Mühendislik Fakültesi, Kimya Mühendisliği Bölümü, 2011 - 2017
Assistant Professor, Land War Academy Command, Institute Of Defense Sciences, 2012 - 2016
Researcher, Harvard University, Massachusetts General Hospital, Center for Engineering in Medicine, 2008 - 2015
Lecturer PhD, Land War Academy Command, Institute Of Defense Sciences, Department Of Operation Research, 2008 - 2011
Research Assistant, Northeastern University, College of Engineering, Department of Mechanical and Industrial Engineering, 2000 - 2006
Research Assistant, Middle East Technical University, Graduate School Of Natural And Applied Sciences, International Center for Heat and Mass Transfer (ICHMT), 1998 - 2000

Academic and Administrative Experience

Deputy Head of Department, Hacettepe University, Mühendislik Fakültesi, Kimya Mühendisliği Bölümü, 2023 - Continues
Fakülte Kurulu Üyesi, Hacettepe University, Mühendislik Fakültesi, Kimya Mühendisliği Bölümü, 2021 - Continues
Hacettepe Üniversitesi, Mühendislik Fakültesi, Kimya Mühendisliği Bölümü, 2008 - Continues

Courses

Kimya Mühendisliği Termodinamiği I, Undergraduate, 2021 - 2022
Thermodynamics of Chemical Engineering II, Undergraduate, 2022 - 2023
Advanced Chemical Engineering Thermodynamics, Postgraduate, 2020 - 2021
Solid State Chemistry, Doctorate, 2018 - 2019
Advanced Engineering Mathematics, Postgraduate, 2019 - 2020, 2018 - 2019, 2017 - 2018
Introduction to Microfluidic Systems, Doctorate, 2019 - 2020
KMU600 ÖZEL KONULAR, Postgraduate, 2017 - 2018, 2016 - 2017
KMU700 ÖZEL KONULAR, Doctorate, 2017 - 2018, 2016 - 2017
NNT600 ÖZEL KONULAR, Postgraduate, 2017 - 2018, 2016 - 2017
KMU479 MALZEME BİLİMİ VE TEKNOLOJİSİ II, Undergraduate, 2017 - 2018
KMÜ403 KİMYA MÜHENDİSLİĞİ LABORATUVARI I, Undergraduate, 2017 - 2018
BYM600 ÖZEL KONULAR, Postgraduate, 2017 - 2018, 2016 - 2017
NNT700 ÖZEL KONULAR, Doctorate, 2016 - 2017

Advising Theses

- Gerçekçiođlu E., Önel Kayran S., 17-4 PH Paslanmaz Çeliđin Elektro Erozyon ve Elektrokimyasal İşleme Yöntemleriyle İşlenebilirliđinin Araştırılması ve İşleme Yüzeylerinde Korozyon Davranışının İncelenmesi, Doctorate, M.ALBAŞKARA(Student), 2022
- Önel Kayran S., DUYARSIZ PATLAYICILARIN DETONASYONU İÇİN LAZER TETİKLİ DETONATÖR DÜZENEGİ GELİŞTİRİLMESİ, Doctorate, G.ÖZKASAPÖĐLU(Student), 2022
- Önel Kayran S., OPTIMIZATION OF FLOW CONDITIONS AND INVESTIGATION OF CRYSTALLIZATION KINETICS FROM A SUPERSATURATED SOLUTION IN A TWO-PHASE MICROFLUIDIC SYSTEM, Postgraduate, T.AHMED(Student), 2022
- Önel Kayran S., Kùlah H., Investigation of the permeability of the cell membrane for different cryoprotectant agents in a continuous thermo-fluidic micro-channel system, Postgraduate, A.HATİBOĐLU(Student), 2021
- Önel Kayran S., Mikrokanaalı cihazlarda damlacık oluşturmak için iki-fazlı akış çalışma parametrelerinin optimizasyonu, Postgraduate, B.ÖZDEN(Student), 2021
- Önel S., Al-6061 alaşımı için uygun elektrokimyasal işleme parametrelerinin ve elektrolitin araştırılması, Postgraduate, G.ŞEHNAZ(Student), 2018
- Önel S., Yeni bir elektrokimyasal işleme tezgahında çalışma parametrelerinin titanyum alaşımları için eniyilemesi, Postgraduate, N.HANLIOĐLU(Student), 2018
- Önel S., Beyin damar akışında gaz halde emboli davranışının matematiksel modellemesi, Postgraduate, P.KIZILTAŞ(Student), 2018
- Önel S., Ekmeklik buđday kalitesini deđerlendirmede kullanılan kimyasal ve fiziksel özelliklerin incelenmesi, Postgraduate, Y.OKUR(Student), 2017
- Önel S., Examination and mathematical modelling of shrinkage rate of uniform droplets in a microfluidic system designed for biopreservation, Postgraduate, U.OKUMUŞ(Student), 2015
- ÖNEL S., Bir elektrokimyasal işleme uygulamasında atık elektrolitin ağır metal iyonlarından arındırılması ve geri kazanımı, Postgraduate, G.ERGİN(Student), 2012

Jury Memberships

- Post Graduate, Post Graduate, Hacettepe Üniversitesi, December, 2023
- Post Graduate, Post Graduate, Hacettepe Üniversitesi, December, 2023
- PhD Thesis Monitoring Committee Member, PhD Thesis Monitoring Committee Member, İhsan Doğramacı Bilkent Üniversitesi, August, 2023
- Post Graduate, Post Graduate, Hacettepe Üniversitesi, July, 2023
- Post Graduate, Post Graduate, Hacettepe Üniversitesi, July, 2023
- PhD Thesis Monitoring Committee Member, PhD Thesis Monitoring Committee Member, İhsan Doğramacı Bilkent Üniversitesi, April, 2023
- PhD Thesis Monitoring Committee Member, PhD Thesis Monitoring Committee Member, Orta Dođu Teknik Üniversitesi, December, 2019
- Doctoral Examination, Doctoral Examination, Orta Dođu Teknik Üniversitesi, December, 2019
- Doctorate, Doctorate, Orta Dođu Teknik Üniversitesi, November, 2019
- Post Graduate, Post Graduate, Orta Dođu Teknik Üniversitesi, September, 2019
- Doctoral Examination, Doctoral Examination, Hacettepe Üniversitesi, June, 2019
- Doctoral Examination, Doctoral Examination, Hacettepe Üniversitesi, February, 2019

Designed Lessons

- Önel Kayran S., Introduction to Microfluidic Systems, Doctorate, 2019 - 2020
- Önel Kayran S., Solid State Chemistry, Doctorate, 2018 - 2019
- Önel Kayran S., Materials Science and Technology II, Undergraduate, 2008 - 2009
- Önel Kayran S., Materials Science and Engineering III, Undergraduate, 2007 - 2008
- Önel Kayran S., Numerical Analysis, Mathematical Modeling, and Simulation with MATLAB, Postgraduate, 2007 - 2008

Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Multistep Treatment of a Complex Electrolyte for Removal of Heavy Metal Ions and Recycling in Electrochemical Machining**
ÖNEL S., Ergin G.
JOURNAL OF MANUFACTURING SCIENCE AND ENGINEERING-TRANSACTIONS OF THE ASME, vol.142, no.7, 2020 (SCI-Expanded)
- II. **Permeability and fluid flow-induced wall shear stress in bone scaffolds with TPMS and lattice architectures: A CFD analysis**
ALI D., ÖZALP M., Blanquer S. B. G., ÖNEL S.
EUROPEAN JOURNAL OF MECHANICS B-FLUIDS, vol.79, pp.376-385, 2020 (SCI-Expanded)
- III. **Application of a simple subregular solution model to the computation of phase boundaries and free dendritic growth in the Ag-Cu system**
ÖNEL S., Ando T.
ACTA MATERIALIA, vol.113, pp.109-115, 2016 (SCI-Expanded)
- IV. **Simulations of nanoscale Ni/Al multilayer foils with intermediate Ni₂Al₃ growth**
GUNDUZ I. E., ÖNEL S., DOUMANIDIS C. C., Rebholz C., SON S. F.
JOURNAL OF APPLIED PHYSICS, vol.117, no.21, 2015 (SCI-Expanded)
- V. **INVESTIGATION AND APPLICATION OF AUTOMATIC CONTROLLED ELECTROCHEMICAL MACHINING (ECM)**
Onel S.
JOURNAL OF THE FACULTY OF ENGINEERING AND ARCHITECTURE OF GAZI UNIVERSITY, vol.29, no.1, pp.1-8, 2014 (SCI-Expanded)
- VI. **DETERMINATION AND REMOVAL OF COPPER IONS (Cu²⁺) IN THE WASTE ELECTROLYTE IN AN ELECTROCHEMICAL MACHINING APPLICATION**
ERGIN G., ÖNEL S.
JOURNAL OF THE FACULTY OF ENGINEERING AND ARCHITECTURE OF GAZI UNIVERSITY, vol.29, no.3, pp.487-494, 2014 (SCI-Expanded)
- VII. **Comparison and extension of free dendritic growth models through application to a Ag-15 mass pct Cu alloy**
Onel S., Ando T.
METALLURGICAL AND MATERIALS TRANSACTIONS A-PHYSICAL METALLURGY AND MATERIALS SCIENCE, no.10, pp.2449-2458, 2008 (SCI-Expanded)
- VIII. **Energy optimization of the Yankee-Hood dryer**
Onel S., Guruz G.
STROJNISKI VESTNIK-JOURNAL OF MECHANICAL ENGINEERING, vol.47, no.8, pp.512-518, 2001 (SCI-Expanded)

Refereed Congress / Symposium Publications in Proceedings

- I. **EFFECT OF MINIATURIZATION USING DROPLET BASED MICRO FLUIDIC SYSTEMS ON THE SYNTHESIS OF UiO-66 MOF NANOPARTICLES**
ÖNEL KAYRAN S., Parlak B., Korkmaz G., DİLCİ E. G.
ASME 2023 International Mechanical Engineering Congress and Exposition, IMECE 2023, Louisiana, United States Of America, 29 October - 02 November 2023, vol.4
- II. **Effect of Blood Viscosity on Pressure and Shear Stress on the Walls of an Artery with Stenosis**
Ali D., ÖNEL S.
Medical Technologies National Congress (TIPTEKNO), Magusa, CYPRUS, 8 - 10 November 2018
- III. **Entropy based classification of road-profiles**
Caglar Baslamisli S. Ç., ÖNEL S.
ASME 2010 10th Biennial Conference on Engineering Systems Design and Analysis, ESDA2010, İstanbul, Turkey,

Supported Projects

ÖNEL KAYRAN S., Project Supported by Higher Education Institutions, Biyomalzemeleri Önderiştirme için geliştirilen BiyoMEMS Cihazda Biyomalzemelerle Performans Testleri, 2015 - 2016

ÖNEL KAYRAN S., Project Supported by Higher Education Institutions, Biyosaklama ve Önderiştirme Yöntemlerinde İlerlemeler, 2015 - 2015

ÖNEL KAYRAN S., Project Supported by Higher Education Institutions, Biomedikal amaçlı mikro-kanallı akışkan bir sistemde kütle aktarımının matematiksel modellemesi, 2014 - 2015

ÖNEL S., TUBITAK Project, Otomatik Kontrollü Elektrokimyasal İşleme Tezgahında Geliştirme Çalışmaları Elektrolit Devri Tasarımı ve Modellemesi, 2011 - 2012

ÖNEL S., Industrial Thesis Project, CNC Kontrollü Elektrokimyasal İşleme Tezgahı, 2010 - 2011

Project Supported by Other Private Institutions, Yankee Hood Kurutucusunda Enerji Optimizasyonu, 1998 - 2000

Activities in Scientific Journals

Technology, Assistant Editor/Section Editor, 2016 - Continues

Scientific Refereeing

TUBITAK Project, 1001 - Program for Supporting Scientific and Technological Research Projects, Hacettepe University, Turkey, November 2019

Metrics

Publication: 11

Citation (WoS): 32

Citation (Scopus): 29

H-Index (WoS): 3

H-Index (Scopus): 3

Non Academic Experience

Kara Harp Okulu- Savunma Bilimleri Enstitüsü

Harvard University, Massachusetts General Hospital

EKİ Elektrokimya Metalurji ve Makine Sanayi ve Ticaret Limited Şirketi

Northeastern University

Northeastern University

Northeastern University

International Center for Heat and Mass Transfer (ICHMT)

Eczacıbaşı İpekkağıt A.Ş., Yalova

Çukurova Tekstil Fabrikası

Çanakkale Çimento Fabrikası

El-Fouladh Iron & Steel Co, Bizerte, Tunisia