

Asst. Prof. EBRU AKDOĞAN

Personal Information

Office Phone: [+90 312 546 1360](tel:+903125461360)

Email: ebru.akdogan@hbv.edu.tr

Web: <https://avesis.hacibayram.edu.tr/ebru.akdogan>

International Researcher IDs

ScholarID: Yf5Ia-QAAAAJ

ORCID: 0000-0002-1388-5595

Publons / Web Of Science ResearcherID: A-3525-2012

Yoksis Researcher ID: 308348

Education Information

Doctorate, Hacettepe University, Fen Bilimleri Enstitüsü, Biyomühendislik (Dr), Turkey 2006 - 2010

Postgraduate, Hacettepe University, Fen Bilimleri Enstitüsü, Gıda Mühendisliği (YI) (Tezli), Turkey 2003 - 2005

Undergraduate, Hacettepe University, Mühendislik Fakültesi, Gıda Mühendisliği Bölümü, Turkey 1997 - 2003

Dissertations

Doctorate, Beyin-omurilik sıvısı şantlarında bakteriyel kolonizasyonun önlenmesi, Hacettepe University, Fen Bilimleri Enstitüsü, Biyomühendislik (Dr), 2010

Postgraduate, Gıda endüstrisinde kullanılan enzimlerdeki tersinir enzimatik dönüşüm performansının membran reaktörlerle geliştirilmesi ve membran reaktörlerde kinetik davranışlarının incelenmesi, Hacettepe University, Fen Bilimleri Enstitüsü, Gıda Mühendisliği (YI) (Tezli), 2005

Research Areas

Biomaterials, Biomaterial, Biochemistry, Surface Chemistry

Academic Titles / Tasks

Assistant Professor, Ankara Hacı Bayram Veli University, Polatlı Faculty of Arts and Sciences, Department of Chemistry, 2019 - Continues

Academic and Administrative Experience

BAP Koordinatör Yardımcısı, Ankara Hacı Bayram Veli University, Rector's Office, 2021 - Continues

Deputy Head of Department, Ankara Hacı Bayram Veli University, Polatlı Faculty Of Arts And Sciences, Department Of Chemistry, 2021 - Continues

Head of Department, Ankara Hacı Bayram Veli University, Polatlı Faculty Of Arts And Sciences, Department Of Chemistry, 2019 - 2022

Courses

Biyokimya I, Undergraduate, 2023 - 2024, 2022 - 2023, 2021 - 2022
Biyokimya II, Undergraduate, 2022 - 2023, 2021 - 2022
Enzim Kimyası, Undergraduate, 2023 - 2024
Biyokimya Laboratuvarı, Undergraduate, 2022 - 2023, 2021 - 2022
Bilimin Doğası, Undergraduate, 2023 - 2024, 2022 - 2023, 2021 - 2022, 2020 - 2021
Araştırma Teknikleri ve Yayın Etiği, Postgraduate, 2023 - 2024, 2022 - 2023, 2021 - 2022, 2020 - 2021
Staj II, Undergraduate, 2023 - 2024, 2022 - 2023
Staj I, Undergraduate, 2023 - 2024, 2022 - 2023
Araştırma Projesi I, Undergraduate, 2021 - 2022, 2020 - 2021, 2019 - 2020
Araştırma Projesi II, Undergraduate, 2021 - 2022, 2020 - 2021, 2019 - 2020
Yüzey Modifikasyonu, Undergraduate, 2020 - 2021, 2019 - 2020
Girişimcilik, Undergraduate, 2020 - 2021, 2019 - 2020
Kimya II, Undergraduate, 2020 - 2021
Nano Teknoloji, Undergraduate, 2020 - 2021, 2019 - 2020
İngilizce İletişim III, Undergraduate, 2020 - 2021
Kimya I, Undergraduate, 2020 - 2021
Bilimsel Araştırmanın Temel İlkeleri, Undergraduate, 2020 - 2021
Polimerik Biyomateryaller, Undergraduate, 2020 - 2021
Organik Kimya I, Undergraduate, 2019 - 2020
Organik Kimya Lab I, Undergraduate, 2019 - 2020
Polimerik Biyomalzemeler, Undergraduate, 2019 - 2020

Jury Memberships

Doctoral Examination, Doctoral Examination, Konya Teknik Üniversitesi, November, 2021

Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Adsorption behavior of serum proteins on anodized titanium is driven by surface nanomorphology**
Akdoğan E., Şirin H. T., Öztatlı H., Kılıçarslan B., Bayram C., Garipcan B.
BIOINTERPHASES, vol.18, no.6, pp.1-11, 2023 (SCI-Expanded)
- II. **Plasma surface modification strategies for the preparation of antibacterial biomaterials: A review of the recent literature**
Akdoğan E., Şirin H. T.
Materials Science and Engineering C, vol.131, 2021 (SCI-Expanded)
- III. **In vitro and in vivo bacterial antifouling properties of phosphite of plasma-treated- silicone**
AKDOĞAN E., DEMİRBİLEK M., Sen Y., ONUR M. A., AZAP Ö., Sonmez E., ŞİRİN H. T., Mutlu M.
SURFACE INNOVATIONS, vol.7, no.2, pp.122-132, 2019 (SCI-Expanded)
- IV. **Plasma Polymerization Modified Polyvinylidene Fluoride (PVDF) Membrane Development and Characterization for Degumming of Soybean Oil**
ÖNAL ULUSOY B., Tur E., AKDOĞAN E., Mutlu M.
JOURNAL OF THE AMERICAN OIL CHEMISTS SOCIETY, vol.91, no.10, pp.1813-1822, 2014 (SCI-Expanded)
- V. **Surface Modification of Polyethersulfone Membrane to Improve Its Hydrophobic Characteristics for Waste Frying Oil Filtration: Radio Frequency Plasma Treatment**
Tur E., Onal-Ulusoy B., AKDOĞAN E., Mutlu M.
JOURNAL OF APPLIED POLYMER SCIENCE, vol.123, no.6, pp.3402-3411, 2012 (SCI-Expanded)
- VI. **Generation of amphoteric surfaces via glow-discharge technique with single precursor and the behavior of bovine serum albumin at the surface**
AKDOĞAN E., Mutlu M.

COLLOIDS AND SURFACES B-BIOINTERFACES, vol.89, pp.289-294, 2012 (SCI-Expanded)

VII. **Basic Principles of Optical Biosensors in Food Engineering**

AKDOĞAN E., Mutlu M.

BIOSENSORS IN FOOD PROCESSING, SAFETY, AND QUALITY CONTROL, pp.53-70, 2011 (SCI-Expanded)

VIII. **A Novel Approach for Improvement of the Interfacial Binding of Ceramics for Dental Materials: Chemical Treatment and Oxygen Plasma Etching**

ÇÖKELİLER D., ERKUT S., ŞARD A. G., AKDOĞAN E., Özden N., İmirzalıoğlu P., Mutlu M.

JOURNAL OF APPLIED POLYMER SCIENCE, vol.110, no.5, pp.2656-2664, 2008 (SCI-Expanded)

IX. **A new method for immunosensor preparation: Atmospheric plasma torch**

AKDOĞAN E., Cökeller D., Marcinauskas L., Valatkevicius P., Valincius V., Mutlu M.

SURFACE & COATINGS TECHNOLOGY, vol.201, no.6, pp.2540-2546, 2006 (SCI-Expanded)

Articles Published in Other Journals

I. **Accelerating the environmental biodegradation of poly-3-hydroxybutyrate (PHB) via plasma surface treatment**

Akdoğan E., Şirin H. T., ŞAHAL G., Deniz Z., Kaya A., Serdaroğlu D. Ç.

Bioresource Technology Reports, vol.25, 2024 (Scopus)

II. **The Effect of Nanostructured Titanium Surface on Protein Adsorption**

Şirin H. T., Akdoğan E.

Gazi University Journal of Science Part A: Engineering and Innovation, vol.9, no.3, pp.225-232, 2022 (Peer-Reviewed Journal)

III. **Promising Tools for Food Safety and Quality: Artificial Intelligence and Smartphones**

AKDOĞAN E., BAŞ D.

Journal of Food Health and Technology Innovations, vol.5, no.10, pp.368-375, 2022 (Peer-Reviewed Journal)

IV. **Protein Adsorption on Poly-3-hydroxybutyrate and Poly(3-hydroxybutyrate-co- 3-hydroxyvalerate): Adsorption Isotherms and Conformational Analysis of the Adsorbed Protein**

Akdoğan E.

Hacettepe Journal of Biology and Chemistry, vol.50, no.2, 2022 (Peer-Reviewed Journal)

V. **Preparation of Poly(DL-Lactide/ε-Caprolactone)-β-TCP Composites for Bone Tissue Repair**

ŞİRİN H. T., AKDOĞAN E., Piskin E.

Hacettepe journal of Biology and Chemistry, vol.47, no.1, pp.133-141, 2019 (Peer-Reviewed Journal)

Books & Book Chapters

I. **Basic Principles of Optical Biosensors in Food Engineering**

Akdoğan E., Mutlu M.

in: Biosensors in Food Processing, Safety, and Quality Control, Mehmet Mutlu, Editor, CRC, New York , New York, pp.53-71, 2010

Refereed Congress / Symposium Publications in Proceedings

I. **Protein Adsorption Behavior on Laser Patterned Titanium Surfaces**

Soykan Ş., Turgut Ç., Yavaş S., ŞİRİN H. T., GARİPCAN B., AKDOĞAN E.

5. Eurasia Biochemical Approaches & Technologies Congress (5. EBAT Congress), Antalya, Turkey, 02 November 2023

II. **Enhancing the Natural Lifecycle of Bioplastics: Plasma Technology as an Eco-Friendly Solution**

AKDOĞAN E., ŞİRİN H. T., ŞAHAL G., Deniz Z., Kaya A., ÇÖKELİLER SERDAROĞLU D.

5. Eurasia Biochemical Approaches & Technologies Congress (5. EBAT Congress), Antalya, Turkey, 04 November 2023

- III. **Nanostructures on Titanium Significantly Affects the Conformation of Surface Adsorbed Protein**
AKDOĞAN E., ŞİRİN H. T.
16th NANOSCIENCE & NANOTECHNOLOGY CONFERENCE, Ankara, Turkey, 05 September 2022
- IV. **Preparation of Poly(DL-Lactide/ε-Caprolactone)-β-TCP Composites for Bone Tissue Repair**
ŞİRİN H. T., AKDOĞAN E., PISKIN E.
24th International biomedical science and technology symposium, 17 - 20 October 2019
- V. **Membrane surface modification for protein separation: amphoteric surfaces by plasma polymerization**
ZİĞAL N., AKDOĞAN E., MUTLU M.
European Biotechnology Congress, 28 September - 01 October 2011
- VI. **Modification of Alginate Microspheres by Plasma Polymerization Technique for Biomedical Applications**
ŞEN Y., ŞAHİN Z., AKDOĞAN E., ÇATALKAYA H., GÜMÜŞDERELİOĞLU M., MUTLU M.
IPTB 2011 7th International Conference on Textile and Polymer Biotechnology, 2 - 04 March 2011
- VII. **Bacteria Antifouling Surfaces via Plasma Polymerization: Amphoteric- Polyzwitterionic Property**
AKDOĞAN E., MUTLU M.
16th International Biomedical Science and Technology Symposium, 28 September - 02 October 2010
- VIII. **Improving Frying Oil Quality by Using Membranes Modified with Plasma Polymerisation**
YURTDAŞ E., AKDOĞAN E., ÖNAL ULUSOY B., MUTLU M.
7th Fed Lipid Congress, Lipids, Fats And Oils, 18 - 21 October 2009
- IX. **Prevention of Bacterial Colonisation on Cerebrospinal Fluid (CSF) Shunts**
AKDOĞAN E., MUTLU M.
COST868 Meeting on Biotechnology and Biopolymers in Textile, Packaging, Cosmetics and Medical Applications, 19 February 2009 - 20 February 2010
- X. **A novel method for regeneration of used/waste frying oils: preparation of hydrophobic composite membranes with plasma polymerization technique and investigation of its' application possibilities**
YURTDAŞ E., AKDOĞAN E., ÖNAL ULUSOY B., MUTLU M.
COST868 Meeting on Biotechnology and Biopolymers in Textile, Packaging, Cosmetics and Medical Applications, 19 February - 20 September 2009
- XI. **Investigation of a novel aptamer immobilization technique via plasma polymerization**
AKDOĞAN E., SELVİ O., ORCAN S.
COST868 Meeting on Biotechnology and Biopolymers in Textile, Packaging, Cosmetics and Medical Applications, 19 - 20 February 2009
- XII. **Biomolecule Immobilization for Biosensor Construction: A Unique Step by Plasma Polymerization Technique**
AKDOĞAN E., ŞİR N., MUTLU M.
Biosensors 2008: The Tenth World Congress on Biosensors, 14 May 2008
- XIII. **Plazma Polimerizasyonu Yöntemiyle Tek Basamakta Biyomolekül İmmobilizasyonu**
AKDOĞAN E., MUTLU M.
15. Biyoteknoloji Kongresi, Turkey, 28 - 31 October 2007
- XIV. **Glow-Discharge Treated Polyethersulphone, Polycarbonate and Cellulose Acetate Ultrafiltration Membranes for Sugar Separation, Part I: Effect of Ethylenediamine and 2-Hydroxyethyl methacrylate as Precursors**
AKDOĞAN E., ÇÖKELİLER SERDAROĞLU D., AYDIN E., TAN E., MUTLU M.
17th International Symposium on Plasma Chemistry (ISPC'17), 7 - 12 August 2005

Supported Projects

AKDOĞAN E., DEMİRİLİK M., Project Supported by Higher Education Institutions, Plazma ile Aktive Edilmiş Sıvıların Protein Konformasyonu Üzerindeki Etkisinin İncelenmesi, 2023 - Continues

Akdoğan E., Deniz Z., TUBİTAK Project, Plazma Yüzey Modifikasyonu Yöntemi Kullanılarak Polihidroksibütiratın Doğal Ortamdaki Biyodegradasyonunun Hızlandırılması, 2022 - 2023

Akdoğan E., Şirin H. T., Project Supported by Higher Education Institutions, Farklı Boyutlardaki Nano Tüp İçeren Titanyum Yüzeylerine Protein Adsorpsiyonunun İncelenmesi, 2020 - 2022

Akdoğan E., Şirin H. T., Project Supported by Higher Education Institutions, Polihidroksibütirat ve Poli(hidroksibütirat-ko-valerat) Yüzeylerine Protein Adsorpsiyonunun ve Adsorbe Olan Proteinin Konformasyonel Değişikliklerinin Araştırılması, 2020 - 2021

AKDOĞAN E., TUBİTAK Project, Yeni Nesil PCR Pürifikasyon Kiti Geliştirilmesi, 2018 - 2019

Akdoğan E., Mergen L., TUBİTAK Project, Morphologically Engineered Scaffold for Soft Tissue Application and Regeneration, 2011 - 2013

Akdoğan E., Mergen L., FP7 Project, Targeting of material's antimicrobial activity by newly engineered peptides, 2010 - 2012

Akdoğan E., Mergen L., Development Agency, Enfeksiyon Riskini Azaltan İmplant Geliştirilmesi, 2010 - 2012

AKDOĞAN E., Industrial Thesis Project, Beyin-Omurilik Sıvısı Şantlarında Bakteriyel Kolonizasyonun Önlenmesi, 2009 - 2011

Akdoğan E., Mutlu M., TÜBİTAK - AB COST Project, A New Method for Degumming Process of Vegetable Oils: Preparation of Hydrophobic Composite Membranes with Plasma Polymerization Technique and It's Application for Filtration of Crude Oil, 2006 - 2009

Akdoğan E., Mutlu M., FP6 Project, Development of Quartz Crystal Microbalance (QCM) Based Diagnosis Systems and Instruments to be used for Hemoglobinopaties and Genetically Modified Organism Detection, 2006 - 2009

Patent

Akdoğan E., Mutlu M., Mergen L., Plazma polimerizasyonu tekniği ile malzeme elde edilme yöntemi, Patent, CHAPTER C Chemistry; Metallurgy, The Invention Registration Number: 2010 07878 , Standard Registration, 2015

Scientific Refereeing

SURFACE INNOVATIONS, SCI Journal, May 2022

ADVANCED MATERIALS INTERFACES, SCI Journal, October 2019

SURFACE INNOVATIONS, SCI Journal, May 2019

SURFACE INNOVATIONS, SCI Journal, December 2018

Metrics

Publication: 29

Citation (WoS): 83

Citation (Scopus): 120

H-Index (WoS): 4

H-Index (Scopus): 6