

Asst. Prof. SIDIKA MİNE TOKER

Personal Information

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International Researcher IDs

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Education Information

Doctorate, Koc University, Institute Of Science, Makine Mühendisliği (Dr), Turkey 2011 - 2014

Postgraduate, Middle East Technical University, Graduate School Of Natural And Applied Sciences, Biyomedikal

Mühendisliği Anabilim Dalı (Disiplinlerarası), Turkey 2007 - 2010

Undergraduate, Middle East Technical University, Faculty Of Engineering, Department Of Metallurgical And Materials Engineering, Turkey 2003 - 2007

Foreign Languages

English, C2 Mastery

Dissertations

Doctorate, Biocompatibility – mechanical property – microstructure relationship in conventional and potential biomedical alloys, Koc University, Fen Bilimleri Enstitüsü, Makine Mühendisliği (Dr), 2014

Postgraduate, An investigation of microstructure, microhardness and biocompatibility characteristics of yttrium hydroxyapatite doped with fluoride, Middle East Technical University, Görme Engelliler Eğitimi Abd, Biyomedikal Mühendisliği Anabilim Dalı (Disiplinlerarası), 2010

Research Areas

Biomaterials, Metallic Materials, Structure-Property Relationship

Academic Titles / Tasks

Assistant Professor, Eskisehir Osmangazi University, Mühendislik-Mimarlık Fakültesi, Metalurji ve Malzeme Müh.Böl., 2016 - Continues

Lecturer, California Polytechnic State University, San Luis Obispo, Mühendislik Fakültesi, Malzeme Mühendisliği, 2014 - 2016

Academic and Administrative Experience

Head of Department, Eskisehir Osmangazi University, Mühendislik-Mimarlık Fakültesi, Metalurji Ve Malzeme Müh.Böl,
2021 - Continues
Deputy Director of the Center, Eskisehir Osmangazi University, Merkezi Araştırma Laboratuvarı Uygulama Ve Araştırma
Merkezi (Arum), 2023 - 2023
Deputy Head of Department, Eskisehir Osmangazi University, Mühendislik-Mimarlık Fakültesi, Metalurji Ve Malzeme
Müh.Böl, 2019 - 2023

Courses

Transport Phenomena, Undergraduate, 2022 - 2023, 2020 - 2021, 2019 - 2020, 2018 - 2019, 2017 - 2018
Biomedical Materials, Doctorate, 2022 - 2023, 2021 - 2022
Materials-2, Undergraduate, 2022 - 2023, 2020 - 2021, 2019 - 2020, 2018 - 2019, 2017 - 2018, 2016 - 2017
Medical Materials, Postgraduate, 2022 - 2023, 2021 - 2022, 2019 - 2020, 2018 - 2019, 2017 - 2018
Basics of Materials Science, Postgraduate, 2022 - 2023
Report Writing Techniques in English, Undergraduate, 2022 - 2023, 2021 - 2022, 2020 - 2021, 2019 - 2020, 2018 - 2019
Introduction to Metallurgical and Materials Engineering, Undergraduate, 2022 - 2023, 2021 - 2022, 2020 - 2021, 2019 -
2020, 2018 - 2019, 2017 - 2018, 2016 - 2017
Materials-1, Undergraduate, 2022 - 2023, 2021 - 2022, 2020 - 2021, 2019 - 2020, 2018 - 2019, 2017 - 2018, 2016 - 2017

Advising Theses

Toker S. M., Ti-6Al-4V Alaşımı Yüzeyinin Ultrasonik Sprey Piroiliz Yöntemi ile Hidroksiapatit Kaplanması, Postgraduate,
E.SERHAD(Student), 2024
Toker S. M., Preliminary Examination and Characterization of the Application of Surface Micro-Deformation on The
Antibiofilm Properties of 316 L Stainless Steel, Postgraduate, B.TÜRK(Student), 2023
Toker S. M., Yüzey mikro-deformasyonunun 316L paslanmaz çeliğin biyoyoumluluğu üzerindeki etkileri, Postgraduate,
F.BİÇER(Student), 2022
Toker S. M., Yüzey Özellikleri Femto Saniye Lazer İle Değiştirilen Yeni Nesil Alaşımların Sentetik Vücut Sıvısı Ortamında
Biyoyoumluluk İncelemesi, Postgraduate, Ş.CULFA(Student), 2022

Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Nickel ion release and surface analyses on instrument fragments fractured beyond the apex: a laboratory investigation**
TOKER S. M., ORHAN E. O., BEKLEN A.
BMC ORAL HEALTH, vol.23, no.1, 2023 (SCI-Expanded)
- II. **Effects of surface micro-deformation on the cellular response to metallic implant materials**
BİÇER F., TOKER S. M.
MATERIALS TODAY COMMUNICATIONS, vol.37, 2023 (SCI-Expanded)
- III. **From corrosion behavior to radiation response: A comprehensive biocompatibility assessment of a CoCrMo medium entropy alloy for utility in orthopedic and dental implants**
Gurel S., Nazarahari A., Canadinc D., Gerstein G., Maier H., Cabuk H., Bukulmez T., Cananoglu M., Yagci M., TOKER S. M., et al.
INTERMETALLICS, vol.149, 2022 (SCI-Expanded)
- IV. **Effects of microstructural mechanisms on the localized oxidation behavior of NiTi shape memory alloys in simulated body fluid**
Toker S. M., Gerstein G., Maier H. J., Canadinc D.
Journal of Materials Science, vol.53, no.2, pp.948-958, 2018 (SCI-Expanded)

- V. **An exploration of plastic deformation dependence of cell viability and adhesion in metallic implant materials**
UZER YILMAZ B., Toker S. M., Cingoz A., Bagci-Onder T., Gerstein G., Maier H. J., Canadinc D.
JOURNAL OF THE MECHANICAL BEHAVIOR OF BIOMEDICAL MATERIALS, vol.60, pp.177-186, 2016 (SCI-Expanded)
- VI. **Incorporating the grain boundary misorientation effects on slip activity into crystal plasticity**
Biyikli E., Toker S. M., Canadinc D.
MECHANICS OF ADVANCED MATERIALS AND STRUCTURES, vol.23, no.8, pp.865-872, 2016 (SCI-Expanded)
- VII. **Evaluation of the biocompatibility of NiTi dental wires: A comparison of laboratory experiments and clinical conditions**
Toker S. M., Canadinc D.
MATERIALS SCIENCE & ENGINEERING C-MATERIALS FOR BIOLOGICAL APPLICATIONS, vol.40, pp.142-147, 2014 (SCI-Expanded)
- VIII. **Microstructure-based modeling of the impact response of a biomedical niobium-zirconium alloy**
Onal O., BAL B., Toker S. M., Mirzajanzadeh M., Canadinc D., Maier H. J.
JOURNAL OF MATERIALS RESEARCH, vol.29, no.10, pp.1123-1134, 2014 (SCI-Expanded)
- IX. **Evaluation of passive oxide layer formation-biocompatibility relationship in NiTi shape memory alloys: Geometry and body location dependency**
Toker S. M., Canadinc D., Maier H. J., Birer O.
MATERIALS SCIENCE & ENGINEERING C-MATERIALS FOR BIOLOGICAL APPLICATIONS, vol.36, pp.118-129, 2014 (SCI-Expanded)
- X. **On the role of slip-twin interactions on the impact behavior of high-manganese austenitic steels**
Toker S. M., Canadinc D., Taube A., Gerstein G., Maier H. J.
MATERIALS SCIENCE AND ENGINEERING A-STRUCTURAL MATERIALS PROPERTIES MICROSTRUCTURE AND PROCESSING, vol.593, pp.120-126, 2014 (SCI-Expanded)
- XI. **Anisotropy of ultrafine-grained alloys under impact loading: The case of biomedical niobium-zirconium**
Toker S. M., Rubitschek F., Niendorf T., Canadinc D., Maier H. J.
SCRIPTA MATERIALIA, vol.66, no.7, pp.435-438, 2012 (SCI-Expanded)
- XII. **Microstructure, microhardness, and biocompatibility characteristics of yttrium hydroxyapatite doped with fluoride**
Toker S. M., TEZCANER A., EVİS Z.
JOURNAL OF BIOMEDICAL MATERIALS RESEARCH PART B-APPLIED BIOMATERIALS, no.2, pp.207-217, 2011 (SCI-Expanded)

Articles Published in Other Journals

- I. **Interaction of Ti-6Al-7Nb alloy with simulated body fluid; a preliminary biocompatibility investigation**
CULFA Ş., TOKER S. M.
Frontiers in Life Sciences and Related Technologies (Online), vol.4, no.3, pp.111-117, 2023 (Peer-Reviewed Journal)
- II. **Biomimetic Coating of 316L Stainless Steel with Microdeformation Areas on The Surface**
Sarikayak A., Koc E., Kalkan M., Toker S. M.
JOURNAL OF POLYTECHNIC-POLITEKNIK DERGISI, 2022 (ESCI)
- III. **A preliminary Investigation of Surface Micro Modification Effects on the Biocompatibility of 316L Stainless Steel**
Toker S. M., Özbulut E. S., Kolçak Z., Güner E.
European Mechanical Science, vol.5, no.3, pp.109-115, 2021 (Peer-Reviewed Journal)
- IV. **Biyomedikal Alaşımların Yüzey İşlemlerinde Güncel Yaklaşımlar; Lazer İşlemleri**

GEDİKOĞLU M., KOLSAL A., Tutuş H., TOKER S. M.

Gazi Üniversitesi Fen Bilimleri Dergisi Part C: Tasarım ve Teknoloji, vol.9, no.3, pp.413-431, 2021 (Peer-Reviewed Journal)

- V. **Mikrodeformasyon ile Yüzey Özellikleri Değiştirilen 316L Paslanmaz Çeliğin Sentetik Vücut Sıvısı ile Etkileşimi**
TOKER S. M., Battal E., Demir Z., Çevik K. E.
Düzce Üniversitesi Bilim ve Teknoloji Dergisi, vol.8, no.4, pp.2455-2467, 2020 (Peer-Reviewed Journal)
- VI. **Effects of Surface Characteristics on the in Vitro Biocompatibility Response of Niti Shape Memory Alloys**
TOKER S. M., Sugerman G., Frey E. C.
Academic Platform Journal of Engineering and Science, vol.7, no.2, pp.112-116, 2019 (Peer-Reviewed Journal)
- VII. **Surface Property Dependent Biocompatibility Analysis of NiTi Shape Memory Alloys to be used in Root Canal Shaping Applications**
TOKER S. M.
International Journal of Dentistry and Oral Science (IJDOS), vol.2, pp.1-4, 2018 (Scopus)
- VIII. **NİKEL-TİTANYUM ŞEKİL BELLEKLİ ALAŞIMLARIN ÖRNEK GEOMETRİSİNE BAĞLI MEKANİK ÖZELLİK VE BİYOUYUMLULUK ANALİZİ**
Toker S. M.
Eskişehir Osmangazi Üniversitesi Mühendislik ve Mimarlık Fakültesi Dergisi, vol.26, no.1, pp.8-13, 2018 (Peer-Reviewed Journal)
- IX. **A Critical Approach to the Biocompatibility Testing of Niti Orthodontic Archwires**
UZER B., Gumus B., TOKER S. M., Sahbazoglu D., Doruk S., Yildirim C., Polat-Altintas S., Canadinc D.
International Journal of Metallurgy and Metal Physics, vol.1, no.1, pp.1-7, 2016 (Peer-Reviewed Journal)

Books & Book Chapters

- I. **Polimerlerin Mekanik Özellikleri**
TOKER S. M.
in: Polimerler: Özellikleri ve Uygulamaları, Avcı Hüseyin, Editor, Eskişehir Osmangazi Üniversitesi Yayınları, Eskişehir, pp.69-86, 2021

Refereed Congress / Symposium Publications in Proceedings

- I. **Effects of Controlled Surface Micro Modification on the Biocompatibility of Biomedical Alloys**
TOKER S. M., BİÇER F.
16th Nanoscience and Nanotechnology Conference, Ankara, Turkey, 5 - 08 September 2022
- II. **Biocompatibility dependence of metallic biomaterials on microstructural mechanisms**
TOKER S. M.
AAAFM-UCLA 2019, International Conference on Advances in Functional Materials in UCLA, Los-Angeles, Chile, 19 - 22 August 2019
- III. **LOCALIZED OXIDATION AND CORROSION BEHAVIOR OF BIOMEDICAL NiTi SHAPE MEMORY ALLOYS IN RELATION TO THEIR MICROSTRUCTURAL FEATURES**
TOKER S. M., Canadinc D.
The International Conference on Materials Science, Mechanical and Automotive Engineering and Technology in ÇEŞME/İZMİR (IMSMATEC'18), İzmir, Turkey, 10 - 12 April 2018
- IV. **Geometry and Surface Characteristic Dependent Biocompatibility Analysis of NiTi Alloys**
TOKER S. M.
INTERNATIONAL CONGRESS ON CHEMISTRY AND MATERIALS SCIENCE, 5 - 07 October 2017
- V. **Surface characteristic dependent ex situ and in vitro biocompatibility analysis of NiTi alloys**

TOKER S. M., UZER B., Canadinc D.

BIOMED 2017, 12 - 14 May 2017

VI. **“Evaluation of Geometry Dependence of Biocompatibility of NiTi Shape Memory Alloys in Different Human Body Locations**

TOKER S. M., Canadinc D.

THERMEC' 2013 International Conference on Processing and Manufacturing of Advanced Materials, 2 - 06 December 2013

VII. **A preliminary investigation of surface micro modification effects on the biocompatibility of 316L stainless steel**

TOKER S. M., Özbulut E. S., Kolçak Z., Güner E.

5th International Mediterranean Science and Engineering Congress (IMSEC 2020), Antalya, Turkey, 21 - 23 October 2020

VIII. **İtriyum ve Flor İlave Edilmiş Hidroksiapatitin Mikroyapı, Mikrosertlik ve Biyouyumluluk Yönlerinden İncelenmesi**

TOKER S. M., EVİS Z., TEZCANER A.

15th National Biomedical Engineering Conference (BİYOMUT2010), Antalya, Antalya, Turkey, 21 April 2010

Supported Projects

Toker S. M., Uysal O., Eker Sarıboyacı A., Canadinc D., TUBITAK Project, Yüksek Entropili TiTaHfNbZr Alaşımının Yüzeyinin Femtosaniye Lazer ile İşlenerek Alternatif Bir Ortopedik Implant Malzemesi Olarak Geliştirilmesi, 2022 - 2025

TOKER S. M., Project Supported by Higher Education Institutions, Biyomedikal Alaşım Yüzeyine Uygulanan Mikrodeformasyon İşleminin Biyoaktivite ve Antibakteriyel Özellikler Üzerindeki Etkileri, 2021 - 2022

Uysal O., Toker S. M., Project Supported by Higher Education Institutions, Metalik implant malzemelerinde mikroyapı kontrolü ile biyouyumluluğu iyileştirecek yöntemler geliştirilmesi, 2018 - 2021

Activities in Scientific Journals

Eskişehir Osmangazi Üniversitesi Mühendislik Mimarlık Fakültesi Dergisi, Committee Member, 2019 - 2023

Metrics

Publication: 30

Citation (WoS): 51

Citation (Scopus): 171

H-Index (WoS): 4

H-Index (Scopus): 8