

## Assoc. Prof. Oğuz Kaan ÖZDEMİR

### Personal Information

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### International Researcher IDs

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### Education Information

Doctorate, Gebze Technical University, Institute Of Science, Malzeme Bilimi Ve Mühendisliği, Turkey 2008 - 2012

Postgraduate, Gebze Technical University, Institute Of Science, Malzeme Bilimi Ve Mühendisliği, Turkey 2007 - 2008

Undergraduate, Yildiz Technical University, Faculty Of Chemical And Metallurgical Engineering, Turkey 2001 - 2006

### Foreign Languages

English, B2 Upper Intermediate

### Research Areas

Metallurgical and Materials Engineering, Material science and engineering, Corrosion and Corrosion Protection, Polymeric Materials, Material Characterization, Nanomaterials, Engineering and Technology

### Academic Titles / Tasks

Associate Professor, Yildiz Technical University, Faculty Of Chemical And Metallurgical Engineering, Department Of Metallurgical And Materials Engineering, 2021 - Continues

Assistant Professor, Yildiz Technical University, Kimya\_Metalurji Fakültesi, Metalurji Ve Malzeme Mühendisliği, 2018 - Continues

Research Assistant, Yildiz Technical University, Faculty Of Chemical And Metallurgical Engineering, Metalurji Ve Malzeme Müh., 2010 - Continues

Assistant Professor, Yildiz Technical University, Kimya\_Metalurji Fakültesi, Metalurji Ve Malzeme Mühendisliği, 2017 - 2018

### Academic and Administrative Experience

Vice Dean, Yildiz Technical University, Faculty Of Chemical And Metallurgical Engineering, Department Of Metallurgical And Materials Engineering, 2021 - Continues

### Courses

Metalurji Proses Lab., Undergraduate, 2017 - 2018  
Teknik Resim esasları, Undergraduate, 2017 - 2018  
Bilgi Teknolojileri, Undergraduate, 2017 - 2018  
Üretim Metalurjisi, Undergraduate, 2017 - 2018

## Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Vegetable oil-based epoxy coating materials for self-healing and anticorrosive applications**  
OKTAY B., Türkcan J. H., ÖZDEMİR O. K., KAYAMAN APOHAN N.  
Macromolecular Research, vol.31, no.11, pp.1077-1086, 2023 (SCI-Expanded)
- II. **Spatio-temporal distribution of microplastic pollution in surface sediments along the coastal areas of Istanbul, Turkey**  
SARI ERKAN H., Takatas B., Ozturk A., GÜNDOĞDU S., AYDIN F., KÖKER DEMO L., ÖZDEMİR O. K., ALBAY M., Onkal Engin G.  
Marine Pollution Bulletin, vol.195, 2023 (SCI-Expanded)
- III. **Investigation of the effects of supporting material modification on the nucleation behavior of Pt catalysts**  
Özdemir J. H., Erol M., Öztürk K., Özdemir O. K.  
International Journal of Hydrogen Energy, vol.48, no.60, pp.22967-22977, 2023 (SCI-Expanded)
- IV. **Enhancing the efficiency of sodium borohydride hydrolysis with a novel CoB-Triton catalyst**  
Kaya C., ÖZDEMİR J. H., ELÇİÇEK H., ÖZDEMİR O. K., KÖKKÜLÜNK G., ÜNLÜGENÇOĞLU K.  
International Journal of Hydrogen Energy, 2023 (SCI-Expanded)
- V. **Improving the electrical conductivity and electrochemical properties of PEDOT:PSS thin films by Ca and Mg doping**  
YAĞCI Ö., ÖZDEMİR O. K.  
POLYMER BULLETIN, vol.79, no.12, pp.11493-11509, 2022 (SCI-Expanded)
- VI. **Computational modeling and experimental verification of cathode catalyst layer on PEM fuel cells**  
Kil Ş., Özdemir O. K., İnsel M. A., Sadıkoğlu H.  
INTERNATIONAL JOURNAL OF HYDROGEN ENERGY, vol.47, no.62, pp.26665-26672, 2022 (SCI-Expanded)
- VII. **Polystyrene-Coated Magnetite Nanoparticles Based Dispersive Micro-Solid Phase Extraction of Active Pharmaceutical Ingredients of Antidepressant Drugs and Determination by GC-MS**  
DALGIÇ BOZYİĞİT G., Zaman B. T., ÖZDEMİR O. K., Kilinc Y., Chormey D. S., ENGİN G., BAKIRDERE S.  
CHEMISTRYSELECT, vol.7, no.10, 2022 (SCI-Expanded)
- VIII. **Surface modified iron magnetic nanoparticles assisted Fenton digestion and extraction method for cadmium determination**  
Ayyıldız M. F., Saylan M., DALGIÇ BOZYİĞİT G., Chormey D. S., ÖZDEMİR O. K., BÜYÜKPINAR Ç., BAKIRDERE S.  
ANALYTICAL BIOCHEMISTRY, vol.629, 2021 (SCI-Expanded)
- IX. **Preparation of highly efficient NiB catalyst via triton-stabilized for alkaline NaBH<sub>4</sub> hydrolysis reaction**  
Elcicek H., Erol M., Özdemir O. K.  
INTERNATIONAL JOURNAL OF ENERGY RESEARCH, vol.45, no.10, pp.14644-14657, 2021 (SCI-Expanded)
- X. **Optimization of synthesis parameters for catalytic performance of Ni-B catalysts using response surface methodology**  
TÜRKCAN J. H., Elçiçek H., ÖZDEMİR O. K.  
International Journal of Hydrogen Energy, vol.46, no.11, pp.7903-7911, 2021 (SCI-Expanded)
- XI. **Optimization of catalyst preparation conditions for hydrogen generation in the presence of Co-B using taguchi method**  
Sağır K., Elçiçek H., ÖZDEMİR O. K.  
INTERNATIONAL JOURNAL OF HYDROGEN ENERGY, vol.46, no.7, pp.5689-5698, 2021 (SCI-Expanded)
- XII. **Synthesis, characterization and an application of graphene oxide nanopowder: methylene blue**

**adsorption and comparison between experimental data and literature data**

Cigeroglu Z., HAŞİMOĞLU A., ÖZDEMİR O. K.

JOURNAL OF DISPERSION SCIENCE AND TECHNOLOGY, vol.42, no.5, pp.771-783, 2021 (SCI-Expanded)

- XIII. **Low loaded Pt-Co catalyst surfaces optimized by magnetron sputtering sequential deposition technique for PEM fuel cell applications: physical and electrochemical analysis on carbon paper support**  
ÖZTÜRK O., Haimoglu A., ÖZDEMİR O. K., Karaaslan I., AHSEN A. Ş.  
TURKISH JOURNAL OF CHEMISTRY, vol.45, no.5, pp.1336-1354, 2021 (SCI-Expanded)
- XIV. **Investigation of graphene oxide as highly selective adsorbent in recovery of hydroxytyrosol from olive mill wastewater**  
Sahin S., Cigeroglu Z., ÖZDEMİR O. K., Elhussein E., Gulmez O.  
INTERNATIONAL JOURNAL OF ENVIRONMENTAL SCIENCE AND TECHNOLOGY, vol.17, no.12, pp.4803-4814, 2020 (SCI-Expanded)
- XV. **Bioenergy production from cotton straws using different pretreatment methods**  
Civelek Yörüklü H., Koroglu E. O., Özdemir O. K., Demir A., Özkaya B.  
International Journal of Hydrogen Energy, vol.45, pp.34720-34729, 2020 (SCI-Expanded)
- XVI. **Polyurethane graphene nanocomposites with self-healing properties by azide-alkyne click reaction**  
Akhan S., OKTAY B., ÖZDEMİR O. K., MADAKBAŞ S., KAYAMAN APOHAN N.  
MATERIALS CHEMISTRY AND PHYSICS, vol.254, 2020 (SCI-Expanded)
- XVII. **Electrodeposition of zinc and reduced graphene oxide on porous nickel electrodes for high performance supercapacitors**  
Yılmaz İ., Gelir A., Yargı Ö., Sahinturk U., Özdemir O. K.  
JOURNAL OF PHYSICS AND CHEMISTRY OF SOLIDS, vol.138, 2020 (SCI-Expanded)
- XVIII. **Naproxen Adsorption onto Graphene Oxide Nanopowders: Equilibrium, Kinetic, and Thermodynamic Studies**  
Cigeroglu Z., ÖZDEMİR O. K., Sahin S., HAŞİMOĞLU A.  
WATER AIR AND SOIL POLLUTION, vol.231, no.3, 2020 (SCI-Expanded)
- XIX. **Recovery of hydroxytyrosol onto graphene oxide nanosheets: Equilibrium and kinetic models**  
Sahin S., Cigeroglu Z., ÖZDEMİR O. K., BİLGİN M., Elhussein E., Gülmez Ö.  
JOURNAL OF MOLECULAR LIQUIDS, vol.285, pp.213-222, 2019 (SCI-Expanded)
- XX. **An integrated system development including PEM fuel cell/biogas purification during acidogenic biohydrogen production from dairy wastewater**  
KÖROĞLU E. O., ÖZDEMİR O. K., ÖZKAYA B., DEMİR A.  
INTERNATIONAL JOURNAL OF HYDROGEN ENERGY, vol.44, no.32, pp.17297-17303, 2019 (SCI-Expanded)
- XXI. **A novel method to produce few layers of graphene as support materials for platinum catalyst**  
ÖZDEMİR O. K.  
CHEMICAL PAPERS, vol.73, no.2, pp.387-395, 2019 (SCI-Expanded)
- XXII. **Analysis of kinetic properties for the hydrolysis reaction of NaBH<sub>4</sub> and environmental effects in the hydrogen production of activated Co-Ti(II)-B alloy catalysts**  
Ozdemir O. K.  
JOURNAL OF THE FACULTY OF ENGINEERING AND ARCHITECTURE OF GAZI UNIVERSITY, vol.34, no.3, pp.1586-1594, 2019 (SCI-Expanded)
- XXIII. **Phenol removal from synthetic solution using low pressure membranes coated with graphene oxide and carbon**  
Cetinkaya A. Y., ÖZDEMİR O. K.  
CHEMICAL PAPERS, vol.72, no.2, pp.327-335, 2018 (SCI-Expanded)
- XXIV. **Highly efficient recovery of biophenols onto graphene oxide nanosheets: Valorisation of a biomass**  
İlbay Z., HAŞİMOĞLU A., ÖZDEMİR O. K., Ateş F., Sahin S.  
JOURNAL OF MOLECULAR LIQUIDS, vol.246, pp.208-214, 2017 (SCI-Expanded)
- XXV. **Electricity Production and Characterization of High-Strength Industrial Wastewaters in Microbial Fuel Cell**

- CETINKAYA A. Y., ÖZDEMİR O. K., DEMİR A., ÖZKAYA B.  
APPLIED BIOCHEMISTRY AND BIOTECHNOLOGY, vol.182, no.2, pp.468-481, 2017 (SCI-Expanded)
- XXVI. **Corrosion Behavior of in-Situ AlB<sub>2</sub>/Al-Cu Metal Matrix Composite**  
Özdemir O. K.  
Acta Physica Polonica A, vol.129, no.4, pp.661-664, 2016 (SCI-Expanded)
- XXVII. **Kinetic properties of Cobalt-Titanium-Boride (Co-Ti-B) catalysts for sodium borohydride hydrolysis reaction**  
Aydin M., HAŞIMOĞLU A., ÖZDEMİR O. K.  
INTERNATIONAL JOURNAL OF HYDROGEN ENERGY, vol.41, no.1, pp.239-248, 2016 (SCI-Expanded)
- XXVIII. **The development of catalytic performance by coating Pt-Ni on CMI7000 membrane as a cathode of a microbial fuel cell**  
Cetinkaya A. Y., ÖZDEMİR O. K., KÖROĞLU E. O., Hasimoglu A., ÖZKAYA B.  
BIORESOURCETECHNOLOGY, vol.195, pp.188-193, 2015 (SCI-Expanded)
- XXIX. **Effect of Sputtering Power on the Electrochemical Properties of Low Loaded Pt Catalysts for PEM Fuel Cell**  
ÖZDEMİR O. K.  
ELECTROCHEMISTRY, vol.83, no.2, pp.76-79, 2015 (SCI-Expanded)
- XXX. **Kinetic properties of co-reduced Co-B/graphene catalyst powder for hydrogen generation of sodium borohydride**  
Aydin M., Hasimoglu A., BAYRAK Y., Ozdemir O. K.  
JOURNAL OF RENEWABLE AND SUSTAINABLE ENERGY, vol.7, no.1, 2015 (SCI-Expanded)
- XXXI. **Synthesis of graphene-based Co-B catalyst via simultaneous chemical reduction for hydrolysis of sodium borohydride**  
ÖZDEMİR O. K., HAŞIMOĞLU A., AHSEN A. Ş.  
JOURNAL OF RENEWABLE AND SUSTAINABLE ENERGY, vol.5, no.6, 2013 (SCI-Expanded)
- XXXII. **Corrosion inhibition of aluminum by novel phthalocyanines in hydrochloric acid solution**  
ÖZDEMİR O. K., AYTAÇ A., ATILLA D., DURMUŞ M.  
JOURNAL OF MATERIALS SCIENCE, vol.46, no.3, pp.752-758, 2011 (SCI-Expanded)
- XXXIII. **Effect of Ti sublayer on the ORR catalytic efficiency of dc magnetron sputtered thin Pt films**  
ÖZTÜRK O., ÖZDEMİR O. K., ULUSOY I., AHSEN A. Ş., Slavcheva E.  
INTERNATIONAL JOURNAL OF HYDROGEN ENERGY, vol.35, no.10, pp.4466-4473, 2010 (SCI-Expanded)

### Articles Published in Other Journals

- I. **GRAFEN OKSİT TAKVİYESİNİN AA1050 METAL MATRİSLİ KOMPOZİTLERİN ELEKTRİKSEL DİRENÇ VE KOROZYON ÖZELLİKLERİNE ETKİSİ**  
TÜRKCAN J. H., ÖZDEMİR O. K., SARAÇ M. F.  
Mühendislik Bilimleri ve Tasarım Dergisi, vol.10, no.4, pp.1272-1277, 2022 (Peer-Reviewed Journal)
- II. **Development of Ni-Ti-B Ternary Catalysts for NaBH<sub>4</sub> Hydrolysis Reaction and Evaluation of their Catalytic Activities**  
TÜRKCAN J. H., ÖZDEMİR O. K.  
Journal of Interfaces, Thin films, and Low dimensional systems, 2021 (Peer-Reviewed Journal)
- III. **Elektrik İle Biriktirme Yöntemiyle PEM Tipi Yakıt Hücreleri İçin Etkin Pt-Ni Elektrokatalizörlerinin Hazırlanması**  
ÖZDEMİR O. K.  
Fırat Üniversitesi Mühendislik Bilimleri Dergisi, vol.29, 2017 (Peer-Reviewed Journal)

### Refereed Congress / Symposium Publications in Proceedings

- I. **Effective Hydrolysis of Alkaline Sodium Borohydride: CoB-Triton Catalysts**  
KAYA C., ÖZDEMİR J. H., ELÇİÇEK H., ÖZDEMİR O. K., KÖKKÜLÜNK G., ÜNLÜGENÇOĞLU K.  
23rd World Hydrogen Energy Conference, Turkey, 26 June 2022
- II. **Effect of Precipitation Hardening Parameters on Mechanical and Corrosion Properties of 7075 Aluminium Alloy**  
ÖZTÜRK K., ÖZDEMİR J. H., ÖZDEMİR O. K.  
International Conference On Emerging Sources In Science, İstanbul, Turkey, 27 May 2022, pp.157-164
- III. **EFFECTIVE HYDROLYSIS OF ALKALINE SODIUM BOROHYDRIDE: CoB-TRITON CATALYST**  
Kaya C., Türkcan J. H., ELÇİÇEK H., ÖZDEMİR O. K., KÖKKÜLÜNK G., ÜNLÜGENÇOĞLU K.  
23rd World Hydrogen Energy Conference: Bridging Continents by H<sub>2</sub>, WHEC 2022, İstanbul, Turkey, 26 - 30 June 2022, pp.580-582
- IV. **Modification and Modelling of Gas Diffusion Layer on PEM Fuel Cells**  
Kil Ş., ÖZDEMİR O. K., SADIKOĞLU H.  
4th International Hydrogen Technologies Congress, Edirne, Turkey, 20 - 23 June 2019
- V. **Kinetic properties of Nickel-Titanium-Boride (Ni-Ti-B) catalysts for sodium borohydride hydrolysis reaction**  
Özdemir O. K.  
4th International Hydrogen Technologies Congress, Edirne, Turkey, 20 - 22 June 2019, pp.58
- VI. **Analysis of The Electrochemical Properties of Catalysts by Thermal Analysis**  
ÖZDEMİR O. K.  
4TH INTERNATIONAL CONFERENCE ON ADVANCES IN MECHANICAL ENGINEERING, 19 - 21 December 2018
- VII. **Optimization of Gas Diffusion Layer on PEM Fuel Cells**  
Kil Ş., ÖZDEMİR O. K., SADIKOĞLU H.  
International Eurasian Conference on Science, Engineering and Technology, 22 - 23 November 2018
- VIII. **Effect of Rotational Motion on The Electrochemical Properties of Electrodeposited Platinum Catalysts**  
ÖZDEMİR O. K.  
International Eurasian Conference on Science, Engineering and Technology, 22 - 23 November 2018
- IX. **Effect of the Amount of Carbon Coated on Gas Diffusion Layer on the Performance of Platinum Electrocatalysts**  
ÖZDEMİR O. K.  
NANOTR14, İzmir/Çeşme, Turkey, 22 - 25 September 2018
- X. **Electrodeposition of Platinum Electrocatalyst Under Electrical Field**  
LUŞ H. M., HAŞİMOĞLU A., ÖZDEMİR O. K.  
International Eurasian Conference on Biological and Chemical Sciences (EurasianBioChem 2018), Ankara, Turkey, 26 - 27 May 2018, pp.1330
- XI. **Graphene oxide as an adsorbent for removal of dye from wastewater**  
HAŞİMOĞLU A., İlbay Z., ÖZDEMİR O. K.  
International Conference on Material Science and Technology, Niğde, Turkey, 11 - 13 October 2017
- XII. **PRODUCTION OF SUSTAINABLE ENERGY VIA INTEGRATION OF DIRECT BOROHYDRIDE**  
ÇETİNKAYA A. Y., ÖZDEMİR O. K., ÖZKAYA B.  
2nd International Energy Engineering Conference, Gaziantep, Turkey, 12 - 13 October 2017
- XIII. **Nano-Graphene Oxide As An Adsorbent For Isolation Of Drug From Wastewater**  
CİĞEROĞLU Z., HAŞİMOĞLU A., ÖZDEMİR O. K.  
2. Material Science and Technology in Cappadocia, 11 - 13 October 2017
- XIV. **Nano-Graphene Oxide as an adsorbent for removal of dye from wastewater**  
HAŞİMOĞLU A., CİĞEROĞLU Z., ÖZDEMİR O. K.  
2. Material Science and Technology in Cappadocia, 11 - 13 October 2017
- XV. **Air Cathode Microbial Fuel Cells with Pt-Co Coated CMI7000 Membrane as the Cathodic Catalyst**  
ÇETİNKAYA A. Y., ÖZDEMİR O. K., ÖZKAYA B., Sulonen M., Puhakka J.  
General Meeting of the International Society for Microbial Electrochemistry and Technology, 3 - 06 December

2016

**XVI. Katot Yüzeyi Pt Ni Katalizörle Kaplanmış CMI 7000 Membranının Mikrobiyal Yakıt Hücresindeki Performansının Değerlendirilmesi**

ÇETİNKAYA A. Y., ÖZDEMİR O. K., KÖROĞLU E. O., ÖZKAYA B.

4. ULUSAL MEMBRAN TEKNOLOJİLERİ VE UYGULAMALARI SEMPOZYUMU, Turkey, 7 - 09 October 2015

## Supported Projects

ÖZDEMİR O. K., TUBITAK Project, Oksijen İndirgenme Reaksiyonu İçin Düşük Maliyetli Ve Yeni Elektrokatalizör Sentezi, 2015 - Continues

ÜNLÜGENÇOĞLU K., ELÇİÇEK H., Kaya C., KÖKKÜLÜNK G., ÖZDEMİR O. K., Project Supported by Higher Education Institutions, Gemilerde hidrojen kullanımı için Amonyum Boran Hidrolizi ve Etkin Katalizör Geliştirilmesi, 2022 - 2023

Özdemir O. K., TUBITAK Project, Preparation and Investigation of Kinetic Properties of Effective Ni-Ti-B Ternary Catalysts for the Hydrolysis Reaction of Sodium Borohydride, 2019 - 2021

Özdemir O. K., Şahin Sevgili S., TUBITAK Project, Zeytin Atık Sularındaki Hidroksitörözölce Zengin Biyofenollerin Geri Kazanımında Yüksek Seçimli Adsorban Olarak Grafen Oksidin İncelenmesi: Denge Ve Kinetik Modelleri, 2017 - 2018

EKERİM A., ÖZDEMİR O. K., ŞAHİNTÜRK U., Project Supported by Higher Education Institutions, PEM Tipi Yakıt Hücreleri İçin Grafen Destekli Pt Katalizörlerinin Hazırlanması, 2013 - 2018

ÖZDEMİR O. K., EU Framework Program Project, Düşük maliyetli ve yüksek verimli mikrobiyal yakıt hücresi malzemeleri ile atık sudan enerji üretimi, 2014 - 2017

ÖZDEMİR O. K., TUBITAK Project, Soy dum Bor Hidrürün Hidroliz Reaksiyonu İçin Etkin Co-Ti-B Üçlü Katalizörlerin Hazırlanması Ve Kinetik Özelliklerinin İncelenmesi, 2013 - 2015

EKERİM A., ÖZDEMİR O. K., TUBITAK Project, Elektirik İle Biriktirme Yöntemiyle Pem Tipi Yakıt Hücreleri İçin Etkin İkili Pt-M (M=Ni, Mn) Ve Üçlü Pt-Ni-Mn Elektrokatalizörlerinin Hazırlanması, 2012 - 2014

## Patent

Özdemir O. K., PROTON DEĞİŞİM MEMBRANLI YAKIT HÜCRELERİ İÇİN MAGNETRON SPUTTER TEKNİĞİ İLE HAZIRLANMIŞ YÜKSEK PERFORMANSLI TRİMETALİK KATALİZÖR ÜRETİM YÖNTEMİ, Patent, CHAPTER C Chemistry; Metallurgy, The Invention Registration Number: TR 2015 17596 B , Standard Registration, 2019

## Metrics

Publication: 59

Citation (WoS): 318

Citation (Scopus): 462

H-Index (WoS): 11

H-Index (Scopus): 14

## Congress and Symposium Activities

Air - cathode microbial fuel cells with Pt - Co coated CMI7000 membrane as the cathodic catalyst, Attendee, Lisboa, Portugal, 2017

Preperation of Multi layered Pt Co Anodes for exchange Membrane Fuel Cells by DC Magnetron Sputter, Attendee, İstanbul, Turkey, 2010

Effect of substrate type on the ORR catalytic efficiency of dc magnetron sputtered thin Pt films, Attendee, Varna, Bulgaria, 2010

Yield of Hydrogen of Alloy AA6XXX in Alkaline Environment, Attendee, İstanbul, Turkey, 2007

Dolomitten Doloma Eldesinde Alümina Katkısının Etkisi, Attendee, Sakarya, Turkey, 2006