

# MD MUSTAFA ERKARTAL

## Personal Information

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## International Researcher IDs

ORCID: 0000-0002-9772-128X

Publons / Web Of Science ResearcherID: H-6579-2016

ScopusID: 56946823600

Yoksis Researcher ID: 56181

## Education Information

Doctorate, Abdullah Gul University, Fen Bilimleri Enstitüsü, Malzeme Bilimi Ve Makine Mühendisliği, Turkey 2015 - 2019

Postgraduate, Abdullah Gul University, Fen Bilimleri Enstitüsü, İleri Malzemeler Ve Nanoteknoloji, Turkey 2013 - 2015

Undergraduate, Ankara University, Mühendislik Fakültesi, Fizik Mühendisliği, Turkey 2005 - 2010

## Foreign Languages

English, C1 Advanced

## Dissertations

Doctorate, Modelling and investigations of amorphous materials, Abdullah Gul University, Fen Bilimleri Enstitüsü, 2019

Postgraduate, Proton Conductive Polymer/Metal Organic Framework Composite Membranes, Abdullah Gül Üniversitesi, Fen Bilimleri Enstitüsü, İleri Malzemeler Ve Nanoteknoloji, 2015

## Research Areas

Physics, Intensive Article 2: Electronic Structure, Electric, Magnetic and Optical Properties, Magnetic Properties and Materials, Chemistry, Physical Chemistry, Polymeric Materials, Inorganic Chemistry, Coordination Chemistry, Natural Sciences

## Academic Titles / Tasks

Research Assistant PhD, Abdullah Gul University, Mühendislik Fakültesi, Nanoteknoloji Mühendisliği, 2014 - Continues

Research Assistant, Erciyes University, Sivil Havacılık Yüksekokulu, Uçak Gövde Motor, 2011 - 2013

## Courses

Renewable Energy Technologies, Undergraduate, 2022 - 2023

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

- I. **Enhancing the Properties of Yttria-Stabilized Zirconia Composites with Zeolitic Imidazolate Framework-Derived Nanocarbons**  
Cakan N., Issa A. A., Als Salman H., Aliyev E., Duden E. I., Gurcan Bayrak K., Caglar M., Turan S., ERKARTAL M., Sen U.  
ACS Applied Materials and Interfaces, vol.15, no.50, pp.58931-58939, 2023 (SCI-Expanded)
- II. **Unveiling the multifaceted properties of a 3d covalent-organic framework: Pressure-induced phase transition, negative linear compressibility and auxeticity**  
ERKARTAL M.  
Computational Materials Science, vol.227, 2023 (SCI-Expanded)
- III. **Boosting the Ceramics with In Situ MOF-Derived Nanocarbons**  
Duden E. I., Gurcan Bayrak K., Balkan M., Cakan N., Demiroglu A., Ayas E., Caglar M., Turan S., Islamoglu T., Farha O. K., et al.  
ACS Materials Letters, vol.5, no.6, pp.1537-1545, 2023 (SCI-Expanded)
- IV. **Extreme flexibility and unusual piezomechanical properties of zinc-alkyl-based metal-organic frameworks: A first principles study**  
ERKARTAL M.  
Materials Today Communications, vol.35, 2023 (SCI-Expanded)
- V. **Synthesis of benzotriazole functionalized ZIF-8 by postsynthetic modification for enhanced CH<sub>4</sub> and CO<sub>2</sub> uptakes**  
ERKARTAL M., Incekara K., Sen U.  
INORGANIC CHEMISTRY COMMUNICATIONS, vol.142, 2022 (SCI-Expanded)
- VI. **Mesoscale Morphologies of Nafion-Based Blend Membranes by Dissipative Particle Dynamics**  
Sen U., Ozdemir M., ERKARTAL M., KAYA A. M., Manda A. A., Oveisi A. R., Ali Aboudzadeh M., Tokumasu T.  
PROCESSES, vol.9, no.6, 2021 (SCI-Expanded)
- VII. **Poly(lauryl methacrylate)-Grafted Amino-Functionalized Zirconium-Terephthalate Metal-Organic Framework: Efficient Adsorbent for Extraction of Polycyclic Aromatic Hydrocarbons from Water Samples**  
Tabatabaai M., Khajeh M., Oveisi A. R., ERKARTAL M., Sen U.  
ACS OMEGA, vol.5, no.21, pp.12202-12209, 2020 (SCI-Expanded)
- VIII. **Pressure-induced amorphization, mechanical and electronic properties of zeolitic imidazolate framework (ZIF-8)**  
ERKARTAL M., DURANDURDU M.  
MATERIALS CHEMISTRY AND PHYSICS, vol.240, 2020 (SCI-Expanded)
- IX. **An in-depth investigation of Mg-Zn-Ca metallic glasses: A first principles study**  
ERKARTAL M., DURANDURDU M.  
COMPUTATIONAL MATERIALS SCIENCE, vol.153, pp.326-337, 2018 (SCI-Expanded)
- X. **Pressure-Induced Amorphization of MOF-5: A First Principles Study**  
ERKARTAL M., DURANDURDU M.  
CHEMISTRYSELECT, vol.3, no.28, pp.8056-8063, 2018 (SCI-Expanded)
- XI. **Boronic Acid Moiety as Functional Defect in UiO-66 and Its Effect on Hydrogen Uptake Capacity and Selective CO<sub>2</sub> Adsorption: A Comparative Study**  
ERKARTAL M., ŞEN Ü.  
ACS APPLIED MATERIALS & INTERFACES, vol.10, no.1, pp.787-795, 2018 (SCI-Expanded)
- XII. **Three-Dimensional Au-Coated Electrospayed Nanostructured BODIPY Films on Aluminum Foil as Surface-Enhanced Raman Scattering Platforms and Their Catalytic Applications**  
YILMAZ M., ERKARTAL M., Ozdemir M., ŞEN Ü., USTA H., DEMİREL G.

- ACS APPLIED MATERIALS & INTERFACES, vol.9, no.21, pp.18199-18206, 2017 (SCI-Expanded)
- XIII. **A Solution-Processable Liquid-Crystalline Semiconductor for Low-Temperature-Annealed Air-Stable N-Channel Field-Effect Transistors**  
ÖZDEMİR R., CHOI D., OZDEMİR M., KIM H., Kostakoglu S. T., ERKARTAL M., KIM H., Kim C., USTA H.  
CHEMPHYSICHEM, vol.18, no.7, pp.850-861, 2017 (SCI-Expanded)
- XIV. **From 2-methylimidazole to 1,2,3-triazole: a topological transformation of ZIF-8 and ZIF-67 by post-synthetic modification**  
ERKARTAL M., ERKILIC U., TAM B., USTA H., YAZAYDIN O., HUPP J. T., Farha O. K., Sen U.  
Chemical Communications, vol.53, no.12, pp.2028-2031, 2017 (SCI-Expanded)
- XV. **Proton Conducting Self-Assembled Metal-Organic Framework/Polyelectrolyte Hollow Hybrid Nanostructures**  
SEN U., ERKARTAL M., Kung C., Ramani V., Hupp J. T., Farha O. K.  
ACS APPLIED MATERIALS & INTERFACES, vol.8, no.35, pp.23015-23021, 2016 (SCI-Expanded)
- XVI. **Anhydrous proton conducting poly(vinyl alcohol) (PVA)/poly(2-acrylamido-2-methylpropane sulfonic acid) (PAMPS)/1,2,4-triazole composite membrane**  
ERKARTAL M., Asian A., ERKILIC U., DADI Ş., Yazaydin O., USTA H., SEN U.  
INTERNATIONAL JOURNAL OF HYDROGEN ENERGY, vol.41, no.26, pp.11321-11330, 2016 (SCI-Expanded)
- XVII. **Proton conducting poly(vinyl alcohol) (PVA)/poly (2-acrylamido-2-methylpropane sulfonic acid) (PAMPS)/zeolitic imidazolate framework (ZIF) ternary composite membrane**  
ERKARTAL M., USTA H., Citir M., Sen U.  
JOURNAL OF MEMBRANE SCIENCE, vol.499, pp.156-163, 2016 (SCI-Expanded)

## Articles Published in Other Journals

- I. **Development of Boronic Acid Containing Zirconium-Based Metal-Organic Frameworks and Determination of Their Sugar Molecules Adsorption Capabilities**  
Erkartal M.  
Erciyes Üniversitesi Fen Bilimleri Enstitüsü Dergisi, vol.38, no.1, pp.1-11, 2022 (Peer-Reviewed Journal)

## Refereed Congress / Symposium Publications in Proceedings

- I. **Mixed-Ligand Boronic Acid UiO Type Metal-Organic Frameworks and Their Sugar Capture Properties**  
ERKARTAL M.  
INTERNATIONAL CONGRESS ON CHEMISTRY AND MATERIALS SCIENCE, Ankara, Turkey, 5 - 07 October 2017, pp.122
- II. **Kristal Kusur Mühendisliği Metal-Organik Çerçeve Yapıların Hidrojen Depolama Özelliklerinin İyileştirilmesi**  
ERKARTAL M.  
VI. Ulusal Anorganik Kimya Kongresi, Burdur, Turkey, 18 - 21 May 2017, pp.47
- III. **Proton Conducting PVA PAMPS ZIF8 Composite Membranes for PEMFC**  
ERKARTAL M., USTA H., ÇITIR M., ŞEN Ü.  
1st European Conference on Metal Organic Frameworks and Porous Polymers, 11 - 14 October 2015
- IV. **Proton Conducting MOF-Polymer Composites**  
ERKARTAL M., Aslan A., USTA H., ÇITIR M., ŞEN Ü.  
International Porous Powder Materials (PPM) 2015, İzmir, Turkey, 15 - 18 September 2015, pp.28
- V. **High Proton Conductive PVA/PAMPS/Triazole Composite Membranes for PEMFC**  
ERKARTAL M., DADI Ş., USTA H., ÇITIR M., ŞEN Ü.  
International Symposium on Materials for Energy Storage and Conversion, Ankara, Turkey, 7 - 09 September 2015, pp.34

## VI. High Proton Conductive PVA PAMPS Triazole Composite Membranes for PEMFC PEM Membrane

ERKARTAL M., DADI Ş., USTA H., ÇITIR M., ŞEN Ü.

International Symposium on Materials for Energy Storage and Conversion, Ankara, Turkey, 7 - 09 September 2015, pp.34

## Other Publications

### I. Proton Conducting PVA/PAMPS/ZIF8 Composite Membranes for PEMFC

ERKARTAL M.

Presentation, pp.50, 2015

### II. Poisoning of Fuel Cell Catalysts by Triazole-like Molecules

ERKARTAL M.

Other, pp.609, 2014

### III. Proton Conducting MOF/Polymer Composite Materials

ERKARTAL M.

Other, 2014

## Supported Projects

Erkartal M., Şen Ü., TUBITAK Project, Spark Plazma Sinterleme Sırasında Metal Organik Kafeslerden Yerinde Türetilen Nanokarbon Esaslı Yapılarla Güçlendirilmiş İletken Seramiklerin Geliştirilmesi, 2023 - 2025

Erkartal M., Erdem T., Büküşoğlu E., Şen Ü., TUBITAK Project, Uçucu Organik Bileşik, Gaz Ve Nem Algılama Uygulamaları İçin Metal-Organik Kafes Ve Metal-Oksit Melez Yapılar İçeren Bir Boyutlu Fotonik Yapıların Geliştirilmesi, 2023 - 2025

Erkartal M., Şen Ü., TUBITAK Project, Elektrokimyasal Uygulamalar İçin Metal-Organik Kafes Ve Bakteriyel Selüloz Hibrit Yapılardan Türetilmiş Karbon Bazlı Nanomalzemelerin Geliştirilmesi, 2021 - 2023

Erkartal M., Şen Ü., TUBITAK Project, Yüksek Kapasitede Hidrojen Ve Metan Depolanması İçin Bor Esaslı Gözenekli Malzemelerin Geliştirilmesi, 2015 - 2023

DURANDURDU M., ERKARTAL M., Project Supported by Higher Education Institutions, Kristal Kusur Mühendisliği ile Metal-Organik Kafes Yapıların (MOF) Karbondioksit (CO<sub>2</sub>) Yakalama ve Depolama Özelliklerinin İyileştirilmesi, 2017 - 2019

ŞEN Ü., ÇELİK M., ERKARTAL M., Project Supported by Higher Education Institutions, Polimer Elektrolit Yakıt Hücreleri için Metal-Organik Kafes Yapılar İçeren Proton İletken Nano-kompozit Membranların Üretilmesi, 2015 - 2017

ERKARTAL M., Project Supported by Other Official Institutions, Ultrasonik Temizleyici Banyo, 2015 - 2016

ŞEN Ü., ERKARTAL M., Project Supported by Higher Education Institutions, Zeolitik İmidazolat Kafes Yapılara Dayalı Proton İletken Kompozit Malzemeler, 2014 - 2016

## Scientific Refereeing

SMALL, SCI Journal, June 2021

## Metrics

Publication: 27

Citation (WoS): 134

Citation (Scopus): 279

H-Index (WoS): 6

H-Index (Scopus): 7

## **Congress and Symposium Activities**

International Symposium on Materials for Energy Storage&Conversion, Attendee, Ankara, Turkey, 2015