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International Researcher IDs

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Publons / Web Of Science ResearcherID: AHB-5893-2022

ScopusID: 57202854951

Yoksis Researcher ID: 47969

Education Information

Doctorate, Gazi University, Fen Bilimleri Enstitüsü, Fizik (Dr), Turkey 2016 - 2021

Postgraduate, Giresun University, Institute Of Science, Fizik (YI) (Tezli), Turkey 2012 - 2015

Undergraduate, Karadeniz Technical University, Fen Fakültesi, Fizik Bölümü, Turkey 2007 - 2012

Foreign Languages

English, C1 Advanced

Dissertations

Doctorate, Investigation of the structural, electronic, half-metallic and magnetic properties of some XYZ, X₂YZ AND XX'YZ (X, X', Y: transition metals, Z: III-V A group elements) compounds, Gazi University, Fen Bilimleri Enstitüsü, 2021

Postgraduate, Bazı Karboksilik Asit-Metal Komplekslerinin K beta/K alfa Şiddet Oranlarının Hesaplanması, Giresun University, Institute Of Science, Fizik (YI) (Tezli), 2015

Research Areas

Intensive Article 2: Electronic Structure, Electric, Magnetic and Optical Properties

Academic Titles / Tasks

Associate Professor, Gazi University, Fen Fakültesi, Fizik, 2023 - Continues

Lecturer PhD, Gazi University, Fen Fakültesi, Fizik, 2021 - 2023

Lecturer, Gazi University, Fen Fakültesi, Fizik, 2020 - 2021

Research Assistant, Ankara Hacı Bayram Veli University, Polatlı Fen-Edebiyat Fakültesi, Fizik Bölümü, 2018 - 2020

Research Assistant, Gazi University, Polatlı Fen-Edebiyat Fakültesi, Fizik, 2014 - 2018

Academic and Administrative Experience

Faculty Board Member, Gazi University, Fen Fakültesi, Fizik, 2025 - Continues

Courses

Undergraduate

PHYSICS I, Undergraduate, 2023 - 2024

Fizik Laboratuvarı, Undergraduate, 2023 - 2024

Fizikteki Son Gelişmeler, Undergraduate, 2023 - 2024

Physics I, Undergraduate, 2023 - 2024

Fizik, Undergraduate, 2022 - 2023

Fizik Laboratuvarı, Undergraduate, 2021 - 2022

Physics II, Undergraduate, 2021 - 2022

Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Optoelectronic, thermoelectric, and EFG of atomic nuclei of trityl-functionalized fullerene C₆₀ using GGA and mBJ approximations**
Gharieh Safa R. K., Rahnamaye Aliabad H., Baghani H. R., ÖZDEMİR E. G., Asadpour Arzefooni A., Zeinab Sadati S.
Physica B: Condensed Matter, vol.704, 2025 (SCI-Expanded)
- II. **An alternative material obtained for spintronic applications using first-principles approximations: TiV₂Se₄ spinel**
Güleşçi Kartal Y., Ahmed W. A. A., Özdemir E. G., Doğruer S., Balmumcu F. I., Merdan Z.
THEORETICAL CHEMISTRY ACCOUNTS, vol.144, pp.16-30, 2025 (SCI-Expanded)
- III. **The structural and optoelectronic properties of CdIn₂Te₄ at three different phases by applying mBJ and GGA approximations**
Aliabad H. A. R., Sadati S. Z., Arzefooni A. A., Haghghatjoo S., Özdemir E. G.
OPTICAL AND QUANTUM ELECTRONICS, vol.57, pp.27-40, 2025 (SCI-Expanded)
- IV. **Structural, wide band gap half-metallic, and pressure-dependent thermodynamic predictions of Li₂TMMgO₆ (TM = V, Nb, and Ta) double perovskites**
Ahmed W. A. A., Özdemir E. G., Aliabad H. R.
JOURNAL OF MOLECULAR MODELING, vol.30, pp.305-318, 2024 (SCI-Expanded)
- V. **Spin-oriented magnetic phase, pressure-dependent elastic calculations, and band gap predictions of VPd₂Br₄ spinel**
ÖZDEMİR E. G.
Indian Journal of Physics, vol.98, no.6, pp.2005-2014, 2024 (SCI-Expanded)
- VI. **High-performance optoelectronic and thermoelectric properties of transparent conductors based on Ti₂O₃ under pressure**
Aliabad H. A. R., Arzefooni A. A., Sadati S. Z., Özdemir E. G., Khosrojerdi P.
SCIENTIFIC REPORTS, vol.14, pp.9237-9248, 2024 (SCI-Expanded)
- VII. **First-Principles Calculations to Investigate Spin-Oriented Magnetic Phases, Band Gaps, Elastic, and Thermodynamic Calculations of VNi₂O₄**
Ak F., Özdemir E. G., Merdan Z.
CHEMICAL PHYSICS, vol.581, pp.112252-112261, 2024 (SCI-Expanded)
- VIII. **Magnetic, pressure-dependent elastic, and band gap calculations of VCo₂O₄ oxide spinel via GGA, GGA+mBJ, and GGA+U**
ÖZDEMİR E. G., Balmumcu F. I.
Physica B: Condensed Matter, vol.674, 2024 (SCI-Expanded)
- IX. **Effects of applied different potentials on electronic and Half-Metallic characteristics and investigated Pressure-Dependent elastic and thermodynamic properties of VRu₂Br₄ spinel**

Özdemir E. G., Merdan Z., Rahnamaye Aliabad H.

JOURNAL OF MAGNETISM AND MAGNETIC MATERIALS, vol.590, 2024 (SCI-Expanded)

- X. **Electronic, magnetic, half-Metallic, pressure-induced elastic and curie temperature predictions of Zr₂RhTl Heusler alloy: DFT and EFT studies**
Özdemir E. G., Doğruer S., Merdan Z.
Philosophical Magazine, vol.104, no.2, pp.115-135, 2024 (SCI-Expanded)
- XI. **Optoelectronic and thermoelectric properties of Sb₂S₃ under hydrostatic pressure for energy conversion**
Azadparvar M., Aliabad H. A. R., Özdemir E. G.
AIP ADVANCES, vol.13, pp.65128-65240, 2023 (SCI-Expanded)
- XII. **Structural, half-metallic, electronic, magnetic and pressure-induced elastic changes of PdVSi, PdVGe, PdVSn, and PdVSb alloys**
Balmumcu F. I., Özdemir E. G., Merdan Z.
Journal of Materials Science, vol.58, no.12, pp.5349-5361, 2023 (SCI-Expanded)
- XIII. **The structural, magnetic, and pressure-induced elastic predictions of ZrPd₂O₄ oxide spinel via GGA, GGA+mBJ, and GGA+U approximations**
Özdemir E. G., Doğruer S.
JOURNAL OF MAGNETISM AND MAGNETIC MATERIALS, vol.568, pp.170417-170424, 2023 (SCI-Expanded)
- XIV. **Electronic, magnetic, and pressure-induced elastic investigations of MnY₂O₄ oxide spinel**
Özdemir E. G., Doğruer S.
EUROPEAN PHYSICAL JOURNAL PLUS, vol.138, pp.23-30, 2023 (SCI-Expanded)
- XV. **Comparisons of the Magnetic and Half-Metallic Properties of Sb-V-Te Compounds in Low and Rich Vanadium Region**
Özdemir E. G.
JOURNAL OF SUPERCONDUCTIVITY AND NOVEL MAGNETISM, vol.35, no.12, pp.3745-3759, 2022 (SCI-Expanded)
- XVI. **Effects of atomic displacements on band gaps of Na₂MgXO₆ (X= Co, Fe) double perovskite oxides: GGA and GGA+U approaches**
Özdemir E. G.
MATERIALS SCIENCE IN SEMICONDUCTOR PROCESSING, vol.152, pp.107078-107087, 2022 (SCI-Expanded)
- XVII. **The electronic, magnetic and half-metallic predictions of M-x (M = Ag, Cd, Y, Zr, Nb, and x=0, 0.125, 0.25, 1)W_{1-x}Sn alloys**
Özdemir E. G., Doğruer S.
PHILOSOPHICAL MAGAZINE, vol.102, no.20, pp.2074-2097, 2022 (SCI-Expanded)
- XVIII. **The half-metallic predictions of M (M = Y, Zr, Nb)-Sc-Sn diluted ternary alloys via GGA and GGA + mBJ**
Özdemir E. G.
EUROPEAN PHYSICAL JOURNAL B, vol.95, pp.129-143, 2022 (SCI-Expanded)
- XIX. **The effect of structural changes on half-metallic, elastic and magnetic properties of the FeWGa half-Heusler compound via first-principles studies**
Özdemir E. G., Doğruer S., Özcan A., Merdan Z.
JOURNAL OF MAGNETISM AND MAGNETIC MATERIALS, vol.546, pp.168872-168879, 2022 (SCI-Expanded)
- XX. **Electronic, magnetic and elastic calculations on halfmetallic Heusler Ti₂RuTl compound**
Güleşçi Kartal Y., Özdemir E. G., Merdan Z.
PHILOSOPHICAL MAGAZINE, vol.102, no.2, pp.153-165, 2022 (SCI-Expanded)
- XXI. **The electronic, half-metallic, elastic, and magnetic properties of new PtWZ (Z= In, Tl, Sn, and Pb) half-Heusler alloys via GGA and GGA +mBJ methods**
Özdemir E. G., Doğruer S.
PHYSICA SCRIPTA, vol.96, pp.125869-125880, 2021 (SCI-Expanded)
- XXII. **First-principles calculations to investigate half-metallic band gap and elastic stability of Co(Mo,Tc)MnSb compounds**
Ozdemir G. E., MERDAN Z.

- PHYSICA E-LOW-DIMENSIONAL SYSTEMS & NANOSTRUCTURES, vol.133, 2021 (SCI-Expanded)
- XXIII. **Bridge constant and atom between theoretical and experimental magnetism in Ni₂MnSb Heusler alloy: DFT and EFT studies**
Saatçi B., Şarlı N., Özdemir E. G., Merdan Z.
PHILOSOPHICAL MAGAZINE, vol.101, no.4, pp.501-516, 2021 (SCI-Expanded)
- XXIV. **The effect of structural changes on the half metallic properties by using Tran Blaha modified Becke Johnson (TB_mBJ) method**
ÖZDEMİR E. G., MERDAN Z.
JOURNAL OF MAGNETISM AND MAGNETIC MATERIALS, vol.514, 2020 (SCI-Expanded)
- XXV. **Comparisons of half-metallic results of Al_{0.75}Co_{0.25}Sb diluted magnetic semiconductor with generalized gradient approximation (GGA) and Tran Blaha modified Becke-Johnson (TB_mBJ) potential methods**
ÖZDEMİR E. G., MERDAN Z.
PHYSICA B-CONDENSED MATTER, vol.581, 2020 (SCI-Expanded)
- XXVI. **First principle predictions on half-metallic results of MnZrX (X = In, Tl, C, Si, Ge, Sn, Pb, N, P, As, Sb, O, S, Se, Te) half-Heusler compounds**
Özdemir E. G., Merdan Z.
JOURNAL OF MAGNETISM AND MAGNETIC MATERIALS, vol.491, 2019 (SCI-Expanded)
- XXVII. **Half-metal calculations of CoZrGe half-Heusler compound by using generalized gradient approximation (GGA) and modified Becke-Johnson (mBJ) methods**
Özdemir E. G., Merdan Z.
MATERIALS RESEARCH EXPRESS, vol.6, no.11, 2019 (SCI-Expanded)
- XXVIII. **First-principles calculations on half-metal ferromagnetic results of VZrAs and VZrSb half-heusler compounds and Al_{1-x}M_xAs (M = Co, Fe and x=0.0625, 0.125, 0.25) diluted magnetic semiconductors**
Özdemir E. G., Merdan Z.
JOURNAL OF ALLOYS AND COMPOUNDS, vol.807, 2019 (SCI-Expanded)
- XXIX. **Theoretical calculations on half-metallic results properties of FeZrX (X = P, As, Sb and Bi) half-Heusler compounds: density functional theory**
Özdemir E. G., Merdan Z.
MATERIALS RESEARCH EXPRESS, vol.6, no.8, 2019 (SCI-Expanded)
- XXX. **Key role of central antimony in magnetization of Ni_{0.5}Co_{1.5}MnSb quaternary Heusler alloy revealed by comparison between theory and experiment**
Sarlı N., Ak F., Özdemir E. G., Saatçi B., Merdan Z.
PHYSICA B-CONDENSED MATTER, vol.560, pp.46-50, 2019 (SCI-Expanded)
- XXXI. **First-principles predictions on structural, electronic, magnetic and elastic properties of Mn₂IrAl Heusler alloy**
ÖZDEMİR E. G., MERDAN Z.
MATERIALS RESEARCH EXPRESS, vol.6, no.3, 2019 (SCI-Expanded)
- XXXII. **Investigation of structural, half-metallic and elastic properties of a new full-Heusler compound- Ir₂MnSi**
Özdemir E. G., Eser E., Merdan Z.
CHINESE JOURNAL OF PHYSICS, vol.56, no.4, pp.1551-1558, 2018 (SCI-Expanded)

Articles Published in Other Journals

- I. **Ab-initio Calculations of the Half-metallic Ferromagnetic New Variant Perovskites Li₂CrO₆ and Li₂CuO₆**
Özdemir E. G.
GAZI UNIVERSITY JOURNAL OF SCIENCE, vol.36, no.2, pp.909-918, 2023 (ESCI)
- II. **Comparison of Electronic and Magnetic Properties of 4d Transition Metals Based NbAl₂F₄ and**

TcAl₂F₄ Spinels

Özdemir E. G.

Gazi University Journal of Science Part A: Engineering and Innovation, vol.9, pp.452-460, 2022 (Peer-Reviewed Journal)

- III. **The Electronic and Magnetic Properties of New Full-Heusler Compounds: M₂IrSi (M=Ti, Cr and Mn)**
MERDAN Z., ÖZDEMİR E. G.
GAZI UNIVERSITY JOURNAL OF SCIENCE, vol.31, no.3, pp.940-952, 2018 (ESCI)

Papers Published in Refereed Scientific Meetings

- I. **The Half-metallic and Magnetic Properties of CrAl₂F₄ Spinel: A Density Functional Theory Study**
Özdemir E. G.
9th International Materials Science and Nanotechnology for Next Generation Conference, Ankara, Turkey, 22 - 24 September 2022, pp.55
- II. **The Co₂FeGe Full Heusler Alloy Magnetic and Curie Temperature Investigations with EFT Method**
Doğruer S., Özdemir E. G., Merdan Z.
1st International Conference on Innovative Academic Studies, Konya, Turkey, 10 - 13 September 2022, pp.227-228
- III. **The Electronic and Magnetic Properties of TiAl₂F₄ Spinel via GGA, GGA+mBJ, LDA, and LDA+mBJ**
Özdemir E. G.
1st International Conference on Innovative Academic Studies, Konya, Turkey, 10 - 13 September 2022, pp.172-173
- IV. **The Magnetic and Curie Temperature Investigations of Co₂NbGa Full Heusler Alloy with EFT Method**
Doğruer S., Özdemir E. G., Merdan Z.
3rd International Conference on Applied Engineering and Natural Sciences, Konya, Turkey, 20 - 23 July 2022, pp.1238
- V. **Comparisons of Half-Metallic Band Gaps of Li₂TiMnO₆ Double Perovskite via GGA and GGA+mBJ**
Özdemir E. G.
3rd International Conference on Applied Engineering and Natural Sciences, Konya, Turkey, 20 - 23 July 2022, pp.2216
- VI. **Half-Metallic Ferromagnetic Predictions of Na₂MgTiO₆ Double Perovskite with Wide Band Gap**
Özdemir E. G.
1st International Conference on Engineering and Applied Natural Sciences, Konya, Turkey, 10 - 13 May 2022, pp.1517
- VII. **Electronic, Structural and Magnetic Properties of CrWBi Half-Heusler Alloy via Ab-Initio Method**
Özdemir E. G.
TURKISH PHYSICAL SOCIETY 37th INTERNATIONAL PHYSICS CONGRESS, Muğla, Turkey, 1 - 05 September 2021, pp.110-111
- VIII. **Crx (x= 0.25, 0.50 and 0.75) doping effect on half-metallic band gaps of CoTc_{1-x}MnSb quaternary compounds**
Özdemir E. G., Merdan Z.
3rd International Hydrogen Energy Congress & Exhibitions, Ankara, Turkey, 14 - 16 June 2021, pp.146-147
- IX. **First Principle Studies of Structural, Electronic, Elastic Properties of Pd₂MnTl Full Heusler Compound**
Fadime Irmak B., ÖZDEMİR E. G., MERDAN Z.
INTERNATIONAL CONFERENCE ON ADVANCED MATERIALS SCIENCE & ENGINEERING AND HIGH TECH DEVICE APPLICATIONS, Ankara, Turkey, 02 October 2020
- X. **The electronic, magnetic and half-metallic properties of new Ti₂RuTl full Heusler compound: An ab-initio investigation**
GÜLEŞCİ KARTAL Y., ÖZDEMİR E. G., MERDAN Z.
International Conference on Advanced Materials Science Engineering and High Tech Devices Applications Exhibition (ICMATSE 2020), Ankara, Turkey, 2 - 04 October 2020

- XI. **Half-Metal Predictions on Sc₂As Compound: A First Principles Calculations**
 ÖZDEMİR E. G., MERDAN Z.
 Turkish Physical Society 35th International Physics Congress, Muğla, Turkey, 4 - 08 September 2019
- XII. **Theoretical Calculations of FeZrX (X= P, As, Sb and Bi) Half-Heusler Compounds**
 ÖZDEMİR E. G., MERDAN Z.
 Turkish Physical Society 35th International Physics Congress, Muğla, Turkey, 4 - 08 September 2019
- XIII. **Electronically, magnetically and elastically studies of Ti₂IrAl alloy**
 ÖZDEMİR E. G., MERDAN Z.
 International Congress on the World of Technology and Advanced Materials, 21 - 23 September 2018
- XIV. **Density functional investigations of structural and magnetic properties of full-Heusler alloy - Ti₂ReSi using GGA method**
 ÖZDEMİR E. G., MERDAN Z.
 International Congress on the World of Technology and Advanced Materials, 21 - 23 September 2018
- XV. **Theoretical Predictions of Ti₂ReSn Full-Heusler Compound Using Wien2k: Ab-Initio Calculations**
 ÖZDEMİR E. G., MERDAN Z.
 International Congress on the World of Technology and Advanced Materials, 21 - 23 September 2018
- XVI. **Half-Metallic Studies on Inverse Ti₂ReGe Full-Heusler Compound**
 MERDAN Z., ÖZDEMİR E. G.
 International Congress on the World of Technology and Advanced Materials, 21 - 23 September 2018
- XVII. **Ab-Initio Calculations of Ti₂IrTl full-Heusler Alloy**
 Güleşçi Kartal Y., ÖZDEMİR E. G., MERDAN Z.
 Turkish Physical Society 34th International Physics Congress, Bodrum/Muğla, Turkey, 5 - 09 September 2018
- XVIII. **First Principles Predictions on Structural, Electronic, Magnetic and Elastic Properties of Inverse Heusler Mn₂IrZ (Z=Al and Ge) Alloys**
 ÖZDEMİR E. G., MERDAN Z.
 Turkish Physical Society 34th International Physics Congress, Bodrum/Muğla, Turkey, 5 - 09 September 2018
- XIX. **The Half-Metallic Property of Ti₂RePb Heusler Alloy: Ab Initio Calculations**
 ÖZDEMİR E. G., MERDAN Z.
 Turkish Physical Society 34th International Physics Congress, Bodrum/Muğla, Turkey, 5 - 09 September 2018
- XX. **First Principles Study on Electronic and Magnetic Properties of Full-Heusler Compounds- M₂IrSi (M=Ti, Cr and Mn)**
 MERDAN Z., ÖZDEMİR E. G.
 TÜRK FİZİK DERNEĞİ 33. ULUSLARARASI FİZİK KONGRESİ, Muğla, Turkey, 6 - 10 September 2017
- XXI. **Structural Phase Transition of Cadmium Sulfide Under High Pressure Via The Conjugate Gradient Method**
 YAMÇIÇIER Ç., MERDAN Z., YAMÇIÇIER S., KÜRKÇÜ C., ÖZDEMİR E. G.
 TÜRK FİZİK DERNEĞİ 33. ULUSLARARASI FİZİK KONGRESİ, Muğla, Turkey, 6 - 10 September 2017
- XXII. **Theoretical Study of Structural Changes of ZnO Under High Hydrostatic Pressure**
 YAMÇIÇIER S., KÜRKÇÜ C., ÖZDEMİR E. G., YAMÇIÇIER Ç.
 TÜRK FİZİK DERNEĞİ 33. ULUSLARARASI FİZİK KONGRESİ, Muğla, Turkey, 6 - 10 September 2017
- XXIII. **Investigation of Half-Metallicity of Full-Heusler Compound - Ir₂MnSi**
 ÖZDEMİR E. G., MERDAN Z., ESER E.
 TÜRK FİZİK DERNEĞİ 33. ULUSLARARASI FİZİK KONGRESİ, Muğla, Turkey, 6 - 10 September 2017
- XXIV. **Spintronic, Electronic and Magnetic Properties of the Ti₂IrAl Full-Heusler Compound by Density Functional Theory**
 MERDAN Z., ÖZDEMİR E. G.
 TÜRK FİZİK DERNEĞİ 33. ULUSLARARASI FİZİK KONGRESİ, Muğla, Turkey, 6 - 10 September 2017
- XXV. **An Ab Initio Study on Half-Metallic States and Magnetic Properties of Mn₂IrAl And V₂IrAl Alloys**
 ÖZDEMİR E. G., MERDAN Z.
 TÜRK FİZİK DERNEĞİ 33. ULUSLARARASI FİZİK KONGRESİ, Muğla, Turkey, 6 - 10 September 2017
- XXVI. **First Principles Simulation of Pressure-Induced Phase Transition In BiOI: Structural Properties**

CANPOLAT M., MERDAN Z., YAMÇIÇIER Ç., KÜRKÇÜ C., ÖZDEMİR E. G.

TÜRK FİZİK DERNEĞİ 33. ULUSLARARASI FİZİK KONGRESİ, Muğla, Turkey, 6 - 10 September 2017

XXVII. **Structural And Electronic Properties of Zirconium Oxide Under Pressure**

YAMÇIÇIER Ç., MERDAN Z., YAMÇIÇIER S., KÜRKÇÜ C., ÖZDEMİR E. G.

TÜRK FİZİK DERNEĞİ 33. ULUSLARARASI FİZİK KONGRESİ, Muğla, Turkey, 6 - 10 September 2017

Supported Projects

MERDAN Z., ÖZDEMİR E. G., Doğruer S., Project Supported by Higher Education Institutions, Zr₂RhTi Heusler alaşımının yapısal manyetik ve elektronik özelliklerinin DFT ve EFT ile incelenmesi, 2022 - 2023

Özdemir E. G., Saatçi B., Merdan Z., Project Supported by Higher Education Institutions, Ni_{2-x}MnCo_xSb alaşımına Cobalt katkılamanın (x=0.00 0.25 0.5 ve 1.0) teorik olarak modellenmesi ve manyetik özelliklere etkisinin incelenmesi, 2019 - 2021

Tasks In Event Organizations

Altındal Ş., Çiftçi Y., Şahingöz R., Şafak Asar Y., Çetinkaya H. G., Altındal Yerişkin S., Özdemir E. G., Bucurgat M., Erbilgen Tanrıkulu E., Ulusoy M., et al, 9th International Conference on Materials Science and Nanotechnology for Next Generation (MSNG-2022), Scientific Congress, Ankara, Turkey, Eylül 2022

Ketenoğlu B., Süsoy Doğan G., Şahin Ö., Kудay S., Şahin M., Ketenoğlu D., Canbaz Öztürk B., Culfa Ö., Akdoğan E., Kamaşcıoğlu Ç., et al., Turkish Physical Society 14th National Particle Accelerators and Detectors Summer School, Science / Art Camp or Summer School Organization, Muğla, Turkey, Eylül 2022

Metrics

Publication: 62

Citation (WoS): 287

Citation (Scopus): 293

H-Index (WoS): 12

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