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Kişisel Bilgiler

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Publons / Web Of Science ResearcherID: A-1590-2017

ScopusID: 57191604310

Yoksis Araştırmacı ID: 134458

Eğitim Bilgileri

Doktora, Gazi Üniversitesi, Fen Bilimleri Enstitüsü, Fizik (Dr), Türkiye 2004 - 2010

Yüksek Lisans, Gazi Üniversitesi, Fen Bilimleri Enstitüsü, Fizik (YI) (Tezli), Türkiye 2002 - 2004

Lisans, Gazi Üniversitesi, Fen Fakültesi, Fizik Bölümü, Türkiye 1995 - 2002

Yaptığı Tezler

Doktora, Bor tabanlı kristal yapıların fiziksel özellikleri, Gazi Üniversitesi, Fen Bilimleri Enstitüsü, Fizik (Dr), 2010

Yüksek Lisans, Duffing denklemi, Gazi Üniversitesi, Fen Bilimleri Enstitüsü, Fizik (YI) (Tezli), 2004

Araştırma Alanları

Atom ve Molekül Fiziği, Atom ve Moleküllerin Elektronik Yapısı Kuramı, Atomik ve moleküler etkileşimler, Disiplinlerarası Fizik ve İlgili Bilim ve Teknoloji Alanları, Fiziksel Kimya ve Kimyasal Fizik, Malzeme Bilimi, Fiziğin Matematiksel Yöntemleri, Yoğun Madde 1:Yapısal, Mekanik ve Termal Özellikler, Yoğun Madde 2:Elektronik Yapı, Elektrik, Manyetik ve Optik Özellikler

Akademik Unvanlar / Görevler

Prof. Dr., Gazi Üniversitesi, Fen Fakültesi, Fizik, 2022 - Devam Ediyor

Doç. Dr., Gazi Üniversitesi, Fen Fakültesi, Fizik, 2015 - 2022

Araştırma Görevlisi, Gazi Üniversitesi, Fen Fakültesi, Fizik, 2006 - 2014

Verdiği Dersler

GENEL FİZİK II (ELEKTRİK VE MAGNETİZMA), Lisans, 2017 - 2018, 2016 - 2017

GENEL FİZİK I (MEKANİK), Lisans, 2017 - 2018, 2016 - 2017

SCI, SSCI ve AHCI İndekslerine Giren Dergilerde Yayınlanan Makaleler

- I. **Stability of lithium boron carbides with defective chains and a new phase from strain-induced phase transition**
Kutay K., AYDIN S.
Computational Materials Science, cilt.231, 2024 (SCI-Expanded)
- II. **Mechanical and dynamic properties of stable two-dimensional boron-substituted ThMoB₄-type graphene: First-Principles Study**
Aydın S., Çiftçi Y.
MATERIALS TODAY COMMUNICATIONS, cilt.27, 2021 (SCI-Expanded)
- III. **Enhanced hydrogen storage of a functional material: Hf₂CF₂ MXene with Li decoration**
Gencer A., Aydın S., Surucu O., Wang X., Deligöz E., Sürücü G.
APPLIED SURFACE SCIENCE, cilt.551, 2021 (SCI-Expanded)
- IV. **211-MAX borides: The stable boron-substituted 211-MAX compounds by first-principles**
AYDIN S.
MATERIALS TODAY COMMUNICATIONS, cilt.25, 2020 (SCI-Expanded)
- V. **Pressure-induced magnetic phase transitions of intermetallic Fe₂AlB₂**
AYDIN S., Simsek M.
JOURNAL OF MAGNETISM AND MAGNETIC MATERIALS, cilt.502, 2020 (SCI-Expanded)
- VI. **Effect of boron substitution on hydrogen storage in Ca/DCV graphene: A first-principle study**
Eroglu E., AYDIN S., Simsek M.
INTERNATIONAL JOURNAL OF HYDROGEN ENERGY, cilt.44, sa.50, ss.27511-27528, 2019 (SCI-Expanded)
- VII. **The enhancement of hydrogen storage capacity in Li, Na and Mg-decorated BC₃ graphene by CLICH and RICH algorithms**
AYDIN S., Simsek M.
INTERNATIONAL JOURNAL OF HYDROGEN ENERGY, cilt.44, sa.14, ss.7354-7370, 2019 (SCI-Expanded)
- VIII. **Stability and superconductivity properties of metal substituted aluminum diborides (M_{0.5}Al_{0.5}B₂)**
AYDIN S., Simsek M.
COMPUTATIONAL MATERIALS SCIENCE, cilt.154, ss.234-242, 2018 (SCI-Expanded)
- IX. **First-principles hydrogen adsorption properties of Li-decorated ThMoB₄-type graphene**
Alp İ., AYDIN S., ÇİFTÇİ Y.
INTERNATIONAL JOURNAL OF HYDROGEN ENERGY, cilt.43, sa.33, ss.16117-16127, 2018 (SCI-Expanded)
- X. **Stability and Pressure Dependent Properties of Ternary Lithium Borides of Gold and Silver**
AYDIN S., Simsek M.
PHYSICA STATUS SOLIDI B-BASIC SOLID STATE PHYSICS, cilt.255, sa.6, 2018 (SCI-Expanded)
- XI. **A superconducting battery material: Lithium gold boride (LiAu₃B)**
AYDIN S., Simsek M.
SOLID STATE COMMUNICATIONS, cilt.272, ss.8-11, 2018 (SCI-Expanded)
- XII. **Changing of the structural, electronic and mechanical properties of lithium boron carbide (LiBC) with pressure**
AYDIN S.
JOURNAL OF THE FACULTY OF ENGINEERING AND ARCHITECTURE OF GAZI UNIVERSITY, cilt.33, sa.1, ss.1-12, 2018 (SCI-Expanded)
- XIII. **The structural, mechanical, and electronic properties of LiAlB₄ under pressure from first principles**
TAYRAN C., AYDIN S.
PHYSICA STATUS SOLIDI C: CURRENT TOPICS IN SOLID STATE PHYSICS, VOL 14 NO 5, cilt.14, sa.5, 2017 (SCI-Expanded)
- XIV. **Alkali and Alkaline earth metal doped aluminum tetraborides containing intrinsic planar boron**

sheet: XAlB₄ (X = Li, Mg, Ca, and Na)

TAYRAN C., AYDIN S., ÇAKMAK M., Ellialtioglu S.

COMPUTATIONAL MATERIALS SCIENCE, cilt.124, ss.130-141, 2016 (SCI-Expanded)

- XV. **The Structural, Elastic, Electronic, Thermodynamic and Vibrational Properties of Protactinium Monocarbide (PaC) from First-Principles Calculations**
Ciftci Y., Coban C., AYDIN S., Tatar A., Evecen M.
JOURNAL OF NANOELECTRONICS AND OPTOELECTRONICS, cilt.11, sa.4, ss.506-513, 2016 (SCI-Expanded)
- XVI. **Effect of pressure on structural, electronic, mechanical and optical properties of ruthenium diboride with oP(12)-type structure**
AYDIN S., Ciftci Y., Mogulkoc Y., Tatar A.
INDIAN JOURNAL OF PHYSICS, cilt.90, sa.7, ss.767-779, 2016 (SCI-Expanded)
- XVII. **Structural and electronic properties of AB- and AA-stacking bilayer-graphene intercalated by Li, Na, Ca, B, Al, Si, Ge, Ag, and Au atoms**
TAYRAN C., AYDIN S., ÇAKMAK M., Ellialtioglu S.
SOLID STATE COMMUNICATIONS, cilt.231, ss.57-63, 2016 (SCI-Expanded)
- XVIII. **Some new members of MAX family including light-elements: Nanolayered Hf₂XY (X= Al, Si, P and Y=B, C, N)**
AYDIN S., Tatar A., ÇİFTÇİ Y.
SOLID STATE SCIENCES, cilt.53, ss.44-55, 2016 (SCI-Expanded)
- XIX. **Site-different structures from dilithium hexaboride (Li₂)b(6) to dimagnesium hexaboride (Mg₂B₆) by first-principles**
AYDIN S.
JOURNAL OF ALLOYS AND COMPOUNDS, cilt.569, ss.118-125, 2013 (SCI-Expanded)
- XX. **The elastic and mechanical properties of MB₁₂ (M = Zr, Hf, Y, Lu) as a function of pressure**
Korozlu N., Colakoglu K., DELİGÖZ E., AYDIN S.
JOURNAL OF ALLOYS AND COMPOUNDS, cilt.546, ss.157-164, 2013 (SCI-Expanded)
- XXI. **First-principles study of hypothetical boron crystals: B-n(n=13, 14, 15)**
AYDIN S., Simsek M.
SOLID STATE SCIENCES, cilt.14, ss.1636-1642, 2012 (SCI-Expanded)
- XXII. **A theoretical study for thorium monocarbide (ThC)**
AYDIN S., Tatar A., Ciftci Y.
JOURNAL OF NUCLEAR MATERIALS, cilt.429, ss.55-69, 2012 (SCI-Expanded)
- XXIII. **Pressure-dependent properties of a multifunctional material: Lithium platinum boride (LiPt₃B)**
AYDIN S., Simsek M.
PHYSICA STATUS SOLIDI B-BASIC SOLID STATE PHYSICS, cilt.249, sa.9, ss.1744-1755, 2012 (SCI-Expanded)
- XXIV. **Superhard transition metal tetranitrides: XN₄ (X=Re, Os, W)**
AYDIN S., ÇİFTÇİ Y., Tatar A.
JOURNAL OF MATERIALS RESEARCH, cilt.27, sa.13, ss.1705-1715, 2012 (SCI-Expanded)
- XXV. **First-principles study of thiophene on beta-SiC (001)-(2 x 1) surface**
Simsek M., AYDIN S.
PHYSICA B-CONDENSED MATTER, cilt.406, sa.14, ss.2880-2884, 2011 (SCI-Expanded)
- XXVI. **First-principles calculations of elemental crystalline boron phases under high pressure: Orthorhombic B-28 and tetragonal B-48**
AYDIN S., Simsek M.
JOURNAL OF ALLOYS AND COMPOUNDS, cilt.509, sa.17, ss.5219-5229, 2011 (SCI-Expanded)
- XXVII. **The structural, elastic and thermodynamic properties of thorium tetraboride**
AYDIN S., Tatar A.
SOLID STATE COMMUNICATIONS, cilt.151, sa.8, ss.628-633, 2011 (SCI-Expanded)
- XXVIII. **The Mechanical Properties of CaX₆ (X = B and C)**
AYDIN S., Simsek M.
NONLINEAR AND COMPLEX DYNAMICS: APPLICATIONS IN PHYSICAL, BIOLOGICAL, AND FINANCIAL SYSTEMS,

ss.127-133, 2011 (SCI-Expanded)

- XXIX. **Thermodynamic properties of UB₆ under high temperature and pressure**
Tatar A., AYDIN S.
OPTOELECTRONICS AND ADVANCED MATERIALS-RAPID COMMUNICATIONS, cilt.4, sa.9, ss.1342-1345, 2010 (SCI-Expanded)
- XXX. **The structural, mechanical and electronic properties of LiX₆(X=C,B): a first principle study**
Tatar A., AYDIN S.
OPTOELECTRONICS AND ADVANCED MATERIALS-RAPID COMMUNICATIONS, cilt.4, sa.9, ss.1329-1331, 2010 (SCI-Expanded)
- XXXI. **First-principles calculations of MnB₂, TcB₂, and ReB₂ within the ReB₂-type structure**
AYDIN S., Simsek M.
PHYSICAL REVIEW B, cilt.80, sa.13, 2009 (SCI-Expanded)
- XXXII. **Hypothetically superhard boron carbide structures with a B₁₁C icosahedron and three-atom chain**
AYDIN S., Simsek M.
PHYSICA STATUS SOLIDI B-BASIC SOLID STATE PHYSICS, cilt.246, sa.1, ss.62-70, 2009 (SCI-Expanded)

Diğer Dergilerde Yayınlanan Makaleler

- I. **Stability of intrinsic and extrinsic co-decorated boron sheets with Li and Mg**
Eroglu E., AYDIN S., Simsek M.
COMPUTATIONAL CONDENSED MATTER, cilt.17, 2018 (ESCI)
- II. **First-principles stability investigation of XBC (X=Li, Na, Mg ve Ca) compounds with graphene-like planar boron-carbide layer**
AYDIN S.
JOURNAL OF POLYTECHNIC-POLITEKNİK DERGISI, cilt.18, sa.4, ss.197-201, 2015 (ESCI)
- III. **First-Principles Study of Ta₃B₄-type TiX₂B₄ (X=Li, Na, Mg ve Ca) Compounds**
AYDIN S.
JOURNAL OF POLYTECHNIC-POLITEKNİK DERGISI, cilt.18, sa.3, ss.133-139, 2015 (ESCI)
- IV. **Spin-Polarized Ground State Properties of Cr₂AlX (X=C, N and B) Ceramics**
AYDIN S.
GAZI UNIVERSITY JOURNAL OF SCIENCE, cilt.28, sa.2, ss.185-193, 2015 (ESCI)
- V. **The investigation of hardness and bonding behavior in XB₄, X = {Ce, Th, U, Pa}, tetraborides by first-principles**
AYDIN S., ÖZCAN A.
Turkish Journal of Physics, cilt.34, sa.1, ss.1-12, 2010 (ESCI)
- VI. **The investigation of hardness and bonding behavior inXB₄ X Ce Th U Pa tetraborides by first principles**
AYDIN S., ÖZCAN A.
TURKISH JOURNAL OF PHYSICS, 2009 (Scopus)

Hakemli Kongre / Sempozyum Bildiri Kitaplarında Yer Alan Yayınlar

- I. **Üçlü-zincir yapılarına sahip ortorombik lityum bor karbürlerin (o-LiBC) ilk-prensiplerle incelenmesi**
Öztürk K., Aydın S.
27. Yoğun Madde Fiziği Ankara, Ankara, Türkiye, 16 Aralık 2022, ss.5
- II. **Ag Dekore Edilmiş ThMoB₄ Tipi Grafen Allotropunun Hidrojen Depolama Özelliklerinin İlk İlkeler Yöntemi İle İncelenmesi**
ALP İ., ÇİFTÇİ Y., AYDIN S.
22. Yoğun Madde Fiziği Ankara Toplantısı, Ankara, Türkiye, 16 Aralık 2016

- III. **Hydrogen adsorption geometries on magnesium decorated planar ThMoB₄ type graphene allotrope: A first principles study**
ALP İ., AYDIN S., ÇİFTÇİ Y.
European Advanced Materials Congress 2016, Stockholm, İsveç, 23 - 25 Ağustos 2016
- IV. **Hydrogen adsorption on lithium and beryllium decorated planar ThMoB₄ type graphene allotrope**
ALP İ., AYDIN S., ÇİFTÇİ Y.
European Advanced Materials Congress 2016, Stockholm, İsveç, 23 - 25 Ağustos 2016
- V. **Hydrogen adsorption on Ca decorated hexagonal planar carbon pentaheptite**
ALP İ., ÇİFTÇİ Y., AYDIN S.
12th Nanoscience and Nanotechnology Conference, Kocaeli, Türkiye, 3 - 05 Haziran 2016
- VI. **Hydrogen storage on nano level optimized pentaheptite graphene allotrope with sodium decoration**
ALP İ., AYDIN S., ÇİFTÇİ Y.
12th Nanoscience and Nanotechnology Conference, Kocaeli, Türkiye, 3 - 05 Haziran 2016
- VII. **Structural mechanical and electronic properties of XAlB₄ X Li N Ca and Na**
TAYRAN C., AYDIN S., ÇAKMAK M., ELLİALTIOĞLU S. Ş.
9th International Physics Conference of the Balkan Physical Union, 24 - 27 Ağustos 2015
- VIII. **Structural, Mechanical, and Electronic Properties of XAlB₄ (X=Li, Mg, Ca, and Na)**
TAYRAN C., AYDIN S., ÇAKMAK M., ELLİALTIOĞLU S. Ş.
9th International Physics Conference of the Balkan Physical Union (BPU9), Türkiye, 24 - 27 Ağustos 2015
- IX. **First-Principles Study of Layer-Intercalated Trilayer Graphene**
TAYRAN C., AYDIN S., ÇAKMAK M., ELLİALTIOĞLU S. Ş.
11th Nanoscience and Nanotechnology Conference (NanoTR-11), Türkiye, 22 - 25 Haziran 2015
- X. **Li-Katkılı Üç-Tabakalı Grafen Sistemlerinin Yapısal ve Elektronik Özellikleri**
TAYRAN C., AYDIN S., ÇAKMAK M., ELLİALTIOĞLU S. Ş.
20. Yoğun Madde Fiziği Ankara Toplantısı, Türkiye, 26 Aralık 2014
- XI. **The Structural and Electronic Properties of X (Li, Ag, Au)-Intercalated AB Stacking Bilayer-Graphene**
TAYRAN C., AYDIN S., ÇAKMAK M., ELLİALTIOĞLU S. Ş.
30th European Conference on Surface Science (ECOSS-30), Türkiye, 31 Ağustos - 05 Eylül 2014
- XII. **Structural and Electronic Properties of Li-Intercalated AA-Stacking Bilayer-Graphene: A First-Principles Study**
TAYRAN C., AYDIN S., ÇAKMAK M., ELLİALTIOĞLU S. Ş.
Turkish Physical Society 31st International Physical Congress, Türkiye, 21 - 24 Temmuz 2014
- XIII. **X(=Li, Na, Ca, B, Al, Si, Ge, Ag, Au)-Intercalated AA-Stacking Bilayer-Graphene**
TAYRAN C., AYDIN S., ÇAKMAK M., ELLİALTIOĞLU S. Ş.
Turkish Physical Society 31st International Physical Congress, Türkiye, 21 - 24 Temmuz 2014

Bilimsel Hakemlikler

INTERNATIONAL JOURNAL OF HYDROGEN ENERGY, SCI-E Kapsamındaki Dergi, Temmuz 2021

JOURNAL OF PHYSICS-CONDENSED MATTER, SCI-E Kapsamındaki Dergi, Temmuz 2021

SUSTAINABLE ENERGY & FUELS, SCI-E Kapsamındaki Dergi, Temmuz 2021

INTERNATIONAL JOURNAL OF HYDROGEN ENERGY, SCI-E Kapsamındaki Dergi, Temmuz 2020

COMPUTATIONAL MATERIALS SCIENCE, SCI-E Kapsamındaki Dergi, Temmuz 2020

Metrikler

Yayın: 52

Atf (WoS): 479

Atf (Scopus): 593

H-İndeks (WoS): 11

H-İndeks (Scopus): 11