

Doç.Dr. SEZGİN AYDIN

Kişisel Bilgiler

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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, Yoğun Madde 1:Yapısal, Mekanik ve Termal Özellikler , Yoğun Madde 2:Elektronik Yapı, Elektrik, Manyetik ve Optik Özellikler

Akademik Unvanlar / Görevler

Doç.Dr., Gazi Üniversitesi, Fen Fakültesi, Fizik Bölümü, 2015 - Devam Ediyor

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

Verdiği Dersler

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

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

KUANTUM FİZİK LAB., Lisans, 2016 - 2017

SCI, SSCI ve AHCI İndekslerine Giren Dergilerde Yayınlanan Makaleler

- 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 İndekslerine Giren Dergi)
- Enhanced hydrogen storage of a functional material: Hf₂CF₂ MXene with Li decoration**
Gencer A., AYDIN S., Surucu O., Wang X., DELİGÖZ E., SÜRÜCÜ G.
APPLIED SURFACE SCIENCE, cilt.551, 2021 (SCI İndekslerine Giren Dergi)

- III. **Pressure-induced magnetic phase transitions of intermetallic Fe₂AlB₂**
AYDIN S., Simsek M.
JOURNAL OF MAGNETISM AND MAGNETIC MATERIALS, cilt.502, 2020 (SCI İndekslerine Giren Dergi)
- IV. **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 İndekslerine Giren Dergi)
- V. **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 İndekslerine Giren Dergi)
- VI. **Stability and superconductivity properties of metal substituted aluminum diborides (M_{0.5}Al_{10.5}B₂)**
AYDIN S., Simsek M.
COMPUTATIONAL MATERIALS SCIENCE, cilt.154, ss.234-242, 2018 (SCI İndekslerine Giren Dergi)
- VII. **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 İndekslerine Giren Dergi)
- VIII. **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 İndekslerine Giren Dergi)
- IX. **A superconducting battery material: Lithium gold boride (LiAu₃B)**
AYDIN S., Simsek M.
SOLID STATE COMMUNICATIONS, cilt.272, ss.8-11, 2018 (SCI İndekslerine Giren Dergi)
- X. **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 İndekslerine Giren Dergi)
- XI. **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 İndekslerine Giren Dergi)
- XII. **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 İndekslerine Giren Dergi)
- XIII. **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 İndekslerine Giren Dergi)
- XIV. **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 İndekslerine Giren Dergi)
- XV. **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 İndekslerine Giren Dergi)

- XVI. **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 İndekslerine Giren Dergi)
- XVII. **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 İndekslerine Giren Dergi)
- XVIII. **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 İndekslerine Giren Dergi)
- XIX. **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 İndekslerine Giren Dergi)
- XX. **A theoretical study for thorium monocarbide (ThC)**
 AYDIN S., Tatar A., Ciftci Y.
 JOURNAL OF NUCLEAR MATERIALS, cilt.429, ss.55-69, 2012 (SCI İndekslerine Giren Dergi)
- XXI. **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 İndekslerine Giren Dergi)
- XXII. **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 İndekslerine Giren Dergi)
- XXIII. **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 İndekslerine Giren Dergi)
- XXIV. **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 İndekslerine Giren Dergi)
- XXV. **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 İndekslerine Giren Dergi)
- XXVI. **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 İndekslerine Giren Dergi)
- XXVII. **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 (SCI Expanded İndekslerine Giren Dergi)
- XXVIII. **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 İndekslerine Giren Dergi)
- 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 İndekslerine Giren Dergi)
- XXX. **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 İndekslerine Giren Dergi)

XXXI. **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 İndekslerine Giren Dergi)

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 İndekslerine Giren Dergi)
- 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 İndekslerine Giren Dergi)
- 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 İndekslerine Giren Dergi)
- 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 İndekslerine Giren Dergi)
- V. **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 (Diğer Kurumların Hakemli Dergileri)

Hakemli Kongre / Sempozyum Bildiri Kitaplarında Yer Alan Yayınlar

- I. **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
- II. **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
- 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 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
- 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. **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

- VII. **Structural, Mechanical, and Electronic Properties of $XAlB_4$ (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
- VIII. **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
- IX. **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
- X. **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
- XI. **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
- XII. **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

Atıflar

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