

Assoc. Prof. CEREN TAYRAN

Personal Information

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International Researcher IDs

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Publons / Web Of Science ResearcherID: AAB-1509-2019

ScopusID: 36807337000

Yoksis Researcher ID: 134469

Education Information

Doctorate, Gazi University, Fen Bilimleri Enstitüsü, Fizik (Dr), Turkey 2010 - 2014

Doctorate, Michigan State University, Department of Physics and Astronomy, United States Of America 2012 - 2013

Postgraduate, Gazi University, Fen Bilimleri Enstitüsü, Fizik (YI) (Tezli), Turkey 2007 - 2010

Undergraduate, Gazi University, Fen Fakültesi, Fizik Bölümü, Turkey 2003 - 2007

Dissertations

Doctorate, Silisyum ve galyum arsenit yüzeylerine tutunmuş grafitik nano yapıların elektronik özellikleri, Gazi University, Fen Bilimleri Enstitüsü, Fizik (Dr), 2014

Postgraduate, Titanya yüzeyine karbon nanotüp tutunması: Yapısal ve elektronik özellikler, Gazi University, Fen Bilimleri Enstitüsü, Fizik (YI) (Tezli), 2009

Research Areas

Physics

Academic Titles / Tasks

Associate Professor, Gazi University, Fen Fakültesi, Fizik, 2021 - Continues

Research Assistant, Gazi University, Fen Fakültesi, Fizik, 2009 - 2020

Academic and Administrative Experience

Deputy Head of Department, Gazi University, Fen Fakültesi, Fizik, 2022 - 2023

Courses

Surface Science, Undergraduate, 2022 - 2023

PHYSICS II, Undergraduate, 2020 - 2021
FİZİK I, Undergraduate, 2020 - 2021
FİZİK LABORATUVARI, Undergraduate, 2020 - 2021
FİZİK LABORATUVARI IV (ELEKTRONİK), Undergraduate, 2020 - 2021
PHYSICS LABORATORY, Undergraduate, 2018 - 2019
FİZİK LABORATUVARI, Undergraduate, 2018 - 2019

Advising Theses

Tayran C., Electrical properties of double-layer Si₃N₄ dielectric layer in GaN hemt devices, Postgraduate,
Y.DURMUŞ(Student), 2023

Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Novel two-dimensional Janus YMN (M= I, Br and N= Cl, Br) monolayers**
Tayran C., Mogulkoc Y., Çakmak M.
MATERIALS SCIENCE IN SEMICONDUCTOR PROCESSING, vol.166, pp.1-9, 2023 (SCI-Expanded)
- II. **Atomic, electronic, and superconducting properties of Zr₂Ir compound**
TAYRAN C., ÇAKMAK M.
Physica B: Condensed Matter, vol.661, 2023 (SCI-Expanded)
- III. **Electron–phonon coupling of the Ti₃Sb compound**
Tayran C., Kim M., Çakmak M.
JOURNAL OF APPLIED PHYSICS, vol.132, no.075103, pp.1-7, 2022 (SCI-Expanded)
- IV. **Charge density wave in a SnSe₂ layer on Sn/Si(111)-(root 3 x root 3)R30 degrees and the effect of surface hydrogenation**
TAYRAN C., ÇAKMAK M.
PHYSICAL CHEMISTRY CHEMICAL PHYSICS, vol.24, no.11, pp.6820-6827, 2022 (SCI-Expanded)
- V. **Biaxial Strain-Induced Electronic Structure and Optical Properties of SiP₂S Monolayer**
Tayran C., Caglayan R., Mogulkoc Y., ÇAKMAK M., Alkan B.
JOURNAL OF ELECTRONIC MATERIALS, vol.50, no.11, pp.6253-6260, 2021 (SCI-Expanded)
- VI. **Electronic, phononic and superconducting properties of trigonal Li₂MSi₂ (M = Ir, Rh)**
TAYRAN C., ÇAKMAK M.
JOURNAL OF PHYSICS-CONDENSED MATTER, vol.33, no.6, 2021 (SCI-Expanded)
- VII. **Quantum-well states for uniform Ag layers on the Ga-induced Si (111)-(root 3 x root 3)R30 degrees surface**
TAYRAN C., ÇAKMAK M., Srivastava G. P.
SURFACE SCIENCE, vol.701, 2020 (SCI-Expanded)
- VIII. **Adsorption of S on Si(111) with M-4 x 4 superstructure**
TAYRAN C., ÇAKMAK M., Srivastava G. P.
SURFACE SCIENCE, vol.701, 2020 (SCI-Expanded)
- IX. **Atomic and electronic structures of Sn covered W(110) surface**
TAYRAN C., ÇAKMAK M., Srivastava G. P.
EUROPEAN PHYSICAL JOURNAL B, vol.93, no.1, 2020 (SCI-Expanded)
- X. **Electronic structure, phonon and superconductivity for WP 5d-transition metal**
TAYRAN C., ÇAKMAK M.
JOURNAL OF APPLIED PHYSICS, vol.126, no.17, 2019 (SCI-Expanded)
- XI. **Electronic structure of the Pd₂Sn surface alloy on Pd(111)-(root 3 x root 3)R30 degrees**
TAYRAN C., ÇAKMAK M.
EUROPEAN PHYSICAL JOURNAL B, vol.92, no.10, 2019 (SCI-Expanded)

- XII. **Tl on the Si(111)-(root 7 x root 3) surface: Density Functional Theory**
TAYRAN C., Alkan B., ÇAKMAK M.
PHILOSOPHICAL MAGAZINE, vol.99, no.13, pp.1656-1668, 2019 (SCI-Expanded)
- XIII. **Electronic structure of Lanthanum induced pi-bonded Seiwatz chains on the Si(111)-(2 x 3) surface**
TAYRAN C.
SURFACE SCIENCE, vol.679, pp.214-217, 2019 (SCI-Expanded)
- XIV. **Co on the H-passivated Si(001) surface: Density-functional calculations**
TAYRAN C., ÇAKMAK M.
PHYSICA B-CONDENSED MATTER, vol.542, pp.44-50, 2018 (SCI-Expanded)
- XV. **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, vol.14, no.5, 2017 (SCI-Expanded)
- XVI. **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., Ellialtıoglu S.
COMPUTATIONAL MATERIALS SCIENCE, vol.124, pp.130-141, 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., Ellialtıoglu S.
SOLID STATE COMMUNICATIONS, vol.231, pp.57-63, 2016 (SCI-Expanded)
- XVIII. **Optimizing Electronic Structure and Quantum Transport at the Graphene-Si(111) Interface: An Ab Initio Density-Functional Study**
TAYRAN C., Zhu Z., Baldoni M., Selli D., Seifert G., Tomanek D.
PHYSICAL REVIEW LETTERS, vol.110, no.17, 2013 (SCI-Expanded)
- XIX. **Electronic and structural properties of armchair SWCNT/TiO₂(110)-(1 x 2) system**
TAYRAN C., ÇAKMAK M., Ellialtıoglu S.
SURFACE SCIENCE, vol.605, pp.593-596, 2011 (SCI-Expanded)

Articles Published in Other Journals

- I. **Effect of Pressure on Electronic, Mechanical and Dynamic Properties for Orthorhombic WP**
Tayran C., Çakmak M.
GAZI UNIVERSITY JOURNAL OF SCIENCE, vol.36, pp.1, 2024 (Scopus)
- II. **Theoretical study of B segregation in Mo(110)**
TAYRAN C.
BOR DERGİSİ, vol.3, no.3, pp.174-179, 2018 (Peer-Reviewed Journal)

Refereed Congress / Symposium Publications in Proceedings

- I. **Phagrafen Tipi Bor Nitrür Yapısının Atomik ve Elektronik Özellikleri**
TAYRAN C.
24. Yoğun Madde Fiziği Ankara Toplantısı, Turkey, 21 December 2018
- II. **Cerium Adsorption on the Si(111) Surface: Density Functional Theory**
TAYRAN C.
International Eurasian Conference on Science, Engineering and Technology (EurasianSciEnTech 2018), Turkey, 22 - 23 November 2018
- III. **Theoretical Study of Monolayer Sn Covered W(110) Surface**
TAYRAN C., ÇAKMAK M., SRIVASTAVA G. P.

International Congress on the World of Technology and Advanced Materials (WITAM-2018), Turkey, 21 - 23 September 2018

- IV. **Theoretical Study of Tl Single and Double Layer on the Si(111)-(root7 x root3) Surface**
TAYRAN C., ALKAN Ş. B., ÇAKMAK M.
International Congress on the World of Technology and Advanced Materials (WITAM-2018), Turkey, 21 - 23 September 2018
- V. **Frictional Force and Sliding Mechanism of Functionalized Graphene Systems**
TAYRAN C., GÜLSEREN O.
European Materials Research Society 2017 Fall Meeting (E-MRS), Poland, 18 - 21 September 2017
- VI. **Katkılı ve Katkısız İki Tabakalı Grafen Sistemlerinde İlk-Prensipler ile Sürtünme Kuvvetinin İncelenmesi**
TAYRAN C., SAYIN C. S., GÜLSEREN O.
22. Yoğun Madde Fiziği Ankara Toplantısı, Turkey, 16 December 2016
- VII. **Grafenin 4H-SiC{0001} Yüzeyleri Üzerinde Sürtünmesinin İlk Prensipler Hesaplarıyla İncelenmesi**
SAYIN C. S., TAYRAN C., GÜLSEREN O.
22. Yoğun Madde Fiziği Ankara Toplantısı, Turkey, 16 December 2016
- VIII. **Friction of Graphene over 4H-SiC{0001} Surfaces**
SAYIN C. S., TAYRAN C., GÜLSEREN O.
2016 Graphene Related Materials Conference (GRM-2016), Turkey, 13 - 15 July 2016
- IX. **Superlubricity and Frictional Force of Bilayer Graphene System**
TAYRAN C., SAYIN C. S., GÜLSEREN O.
2016 Graphene and Related Materials Conference (GRM-2016), Turkey, 13 - 15 July 2016
- X. **Grafen Yüzeyinde Kayan Grafen Parçacığı**
TAYRAN C., SAYIN C. S., GÜLSEREN O.
V. Yoğun Madde Fiziği İzmir Toplantısı, Turkey, 15 April 2016
- XI. **Ab Initio Study of Friction of Graphene Flake on Graphene/Graphite or SiC Surface**
GÜLSEREN O., TAYRAN C., SAYIN C. S.
APS March Meeting 2016, United States Of America, 14 - 18 March 2016
- XII. **Nano Ölçekte Sürtünmenin İlk-Prensipler ile İncelenmesi: Grafen Üzerinde Grafen Parçacıkları**
TAYRAN C., SAYIN C. S., GÜLSEREN O.
21. Yoğun Madde Fiziği Ankara Toplantısı, Turkey, 25 December 2015
- XIII. **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 August 2015
- XIV. **First-Principles Investigation of Friction: Graphene Flake on Graphene or SiC Surface**
TAYRAN C., SAYIN C. S., GÜLSEREN O.
9th International Physics Conference of the Balkan Physical Union (BPU9), Turkey, 24 August 2015 - 27 August 2016
- XV. **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), Turkey, 24 - 27 August 2015
- XVI. **Graphene Flake on Graphene: First Principles Study of Nanofriction**
TAYRAN C., SAYIN C. S., GÜLSEREN O.
The International Conference on Understanding and Controlling Nano and Mesoscale Friction, Turkey, 22 - 26 June 2015
- XVII. **First-Principles Study of Layer-Intercalated Trilayer Graphene**
TAYRAN C., AYDIN S., ÇAKMAK M., ELLİALTIOĞLU S. Ş.
11th Nanoscience and Nanotechnology Conference (NanoTR-11), Turkey, 22 - 25 June 2015
- XVIII. **Investigation of Friction Between Graphene Flake and Graphene From First Principles**
TAYRAN C., SAYIN C. S., GÜLSEREN O.
11th Nanoscience and Nanotechnology Conference (NanoTR-11), Turkey, 22 - 25 June 2015

- XIX. **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, Turkey, 26 December 2014
- XX. **Optimizing Electronic Structure and Quantum Transport at the Graphene-Si(111) Interface: An Ab-Initio Density-Functional Study**
TAYRAN C., ZHU Z., BALDONI M., SELLI D., SEIFERT G., TOMANEK D.
30th European Conference on Surface Science (ECOSS-30), Turkey, 31 August - 05 September 2014
- XXI. **Atomic and Electronic Properties of Wavy Graphene/Bi/GaAs(001)-alpha2(2x4) Surface**
TAYRAN C., USANMAZ D., ÇAKMAK M., ALKAN Ş. B., ELLİALTIOĞLU S. Ş.
30th European Conference on Surface Science (ECOSS-30), Turkey, 31 August - 05 September 2014
- XXII. **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), Turkey, 31 August - 05 September 2014
- XXIII. **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, Turkey, 21 - 24 July 2014
- XXIV. **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, Turkey, 21 - 24 July 2014
- XXV. **Grafen'in Bi/GaAs(001)-alfa2(2x4) Yüzeyine Tutunması**
TAYRAN C., USANMAZ D., ÇAKMAK M., ELLİALTIOĞLU S. Ş.
19. Yoğun Madde Fiziği Ankara Toplantısı, Turkey, 20 December 2013
- XXVI. **Rutil TiO₂ Yüzeyi Üzerinde İçi Platin Katkılanmış Karbon Nanotüp Tutunması**
TAYRAN C., ÇAKMAK M., ELLİALTIOĞLU S. Ş.
17. Yoğun Madde Fiziği Ankara Toplantısı, Turkey, 05 November 2010
- XXVII. **Armchair Double-Walled Carbon Nanotube on Rutile TiO₂(110)-(1x2)**
TAYRAN C., ÇAKMAK M., ELLİALTIOĞLU S. Ş.
International Conference "Physics 2010", Azerbaijan, 30 June - 02 July 2010, vol.16, pp.126-128
- XXVIII. **Rutil TiO₂(110)-(1x2) Yüzeyine Tutunmuş Karbon Nanotüpün Elektronik Özellikleri**
TAYRAN C., ÇAKMAK M., ELLİALTIOĞLU S. Ş.
16. Yoğun Madde Fiziği Ankara Toplantısı, Turkey, 06 November 2009
- XXIX. **Electronic Properties of Carbon Nanotubes Adsorbed on Reconstructed Rutile TiO₂(110) Surface: A DFT Study**
TAYRAN C., ÇAKMAK M., ELLİALTIOĞLU S. Ş.
26th European Conference on Surface Science (ECOSS-26), Italy, 30 August - 04 September 2009
- XXX. **Electronic Properties of Carbon Nanotubes Adsorbed on Reconstructed Rutile TiO₂(110)-(1x2) Surface**
TAYRAN C., ÇAKMAK M., ELLİALTIOĞLU S. Ş.
5. Ulusal Nanobilim ve Nanoteknoloji Konferansı (NanoTR-V), Turkey, 8 - 12 June 2009
- XXXI. **Rutil TiO₂(110)-(1x2) Yüzeyi Üzerindeki Karbon Nanotüp'ün Yapısal ve Elektronik Özellikleri**
TAYRAN C., ÇAKMAK M., METE E., ELLİALTIOĞLU S. Ş.
15. Yoğun Madde Fiziği Ankara Toplantısı, Turkey, 07 November 2008
- XXXII. **Structural and Electronic Properties of Carbon Nanotubes on the TiO₂(110)-(1x2) Surface**
TAYRAN C., ÇAKMAK M., ELLİALTIOĞLU S. Ş.
Turkish Physical Society 25th International Physical Congress, Turkey, 25 - 29 August 2008

Activities in Scientific Journals

Scientific Refereeing

JOURNAL OF PHYSICS CONDENSED MATTER, SCI Journal, August 2023
GAZI UNIVERSITY JOURNAL OF SCIENCE, National Scientific Refreed Journal, July 2023
JOURNAL OF PHYSICS CONDENSED MATTER, SCI Journal, June 2023
SAKARYA UNIVERSITY JOURNAL OF SCIENCE, National Scientific Refreed Journal, June 2023
JOURNAL OF PHYSICS CONDENSED MATTER, SCI Journal, April 2023
JOURNAL OF MATERIALS ENGINEERING AND PERFORMANCE, SCI Journal, February 2023
ECS JOURNAL OF SOLID STATE SCIENCE AND TECHNOLOGY, SCI Journal, December 2022
PHYSICA SCRIPTA, SCI Journal, November 2022
PHYSICA SCRIPTA, SCI Journal, September 2022
JOURNAL OF PHYSICS D - APPLIED PHYSICS, SCI Journal, April 2022
INTERNATIONAL JOURNAL OF QUANTUM CHEMISTRY, Journal Indexed in SCI-E, February 2022
JOURNAL OF PHYSICS-CONDENSED MATTER, SCI Journal, July 2021
JOURNAL OF PHYSICS-CONDENSED MATTER, SCI Journal, June 2021
JOURNAL OF PHYSICS-CONDENSED MATTER, SCI Journal, October 2020
SAKARYA UNIVERSITY JOURNAL OF SCIENCE, National Scientific Refreed Journal, February 2020
SAKARYA UNIVERSITY JOURNAL OF SCIENCE, National Scientific Refreed Journal, February 2020

Metrics

Publication: 53
Citation (WoS): 77
Citation (Scopus): 75
H-Index (WoS): 5
H-Index (Scopus): 5

Non Academic Experience

MICHIGAN STATE UNIVERSITY