



# BERRİN ÖZDEMİR

## ASSOC. PROF.

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### International Researcher IDs

ORCID: 0000-0001-9766-277X

Yoksis Researcher ID: 108039

### Learning Knowledge

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Doctorate  
1988 - 1995

Middle East Technical University, Graduate School Of Natural And Applied Sciences, Fizik, Turkey

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Postgraduate  
1985 - 1988

Middle East Technical University, Graduate School Of Natural And Applied Sciences, Fizik, Turkey

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Undergraduate  
1980 - 1985

Middle East Technical University, Fen Edebiyat, Fizik, Turkey

### Foreign Languages

English, B2 Upper Intermediate

### Dissertations

Doctorate, Oscillatory magnetoresistance in two dimensional semiconductor structures, Middle East Technical University, Graduate School Of Natural And Applied Sciences, Fizik, 1995

Postgraduate, Self-consistent field calculations for the electronic properties of semiconductor superlattices, Middle East Technical University, Fen Bilimleri Enstitüsü, Fizik, 1988

### Academic Titles / Tasks

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Associate Professor  
2018 - Continues

Cukurova University, Fen-Edebiyat Fakültesi, Fizik

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Assistant Professor

2018 - 2019

Cukurova University, Fen-Edebiyat Fakültesi, Fizik

Assistant Professor

1996 - 2018

Cukurova University, Fen-Edebiyat Fakültesi, Fizik

## Supported Projects

1. ÖZDEMİR B., Project Supported by Higher Education Institutions, Manyetik Alan Altındaki İki Boyutlu Elektron Gazının Kimyasal Potansiyeli, Isı Sığası ve Manyetizasyon, 2013 - 2016
2. ÖZDEMİR B., Project Supported by Higher Education Institutions, Katmanlı İki Boyutlu Yapıların Elektronik Özellikleri, 2013 - 2016

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

1. **Mobility Characteristics of ZnMgO/ZnO Heterostructures with Screening Effects**  
Yarar Z., Alyörük M., Çekil H., ÖZDEMİR B., ÖZDEMİR M.  
Physics of the Solid State, vol.66, no.4, pp.91-98, 2024 (SCI-Expanded)
2. **Screening effects on the mobility properties in AlGaIn/GaN heterostructures with varied Al content**  
Yarar Z., Cesur D., Alyoruk M. D., Cekil H. C., ÖZDEMİR B., ÖZDEMİR M.  
INTERNATIONAL JOURNAL OF MODERN PHYSICS C, vol.33, no.12, 2022 (SCI-Expanded)
3. **Electron transport properties of silicene: Intrinsic and dirty cases with screening effects**  
Ozdemir M., Cekil H. C., Atasever O., Ozdemir B., Yarar Z., Ozdemir M.  
JOURNAL OF MOLECULAR STRUCTURE, vol.1199, 2020 (SCI-Expanded)
4. **Transport Properties of Graphene and Suspended Graphene with EMC: The Role of Various Scattering Mechanisms**  
Ozdemir M. D., ATASEVER O. S., ÖZDEMİR B., Yarar Z., ÖZDEMİR M.  
JOURNAL OF ELECTRONIC MATERIALS, vol.45, no.8, pp.4468-4475, 2016 (SCI-Expanded)
5. **Electron-Transport Properties of a ZnMgO/ZnO Hetero Structure and the Effect of Interface Roughness and ZnMgO Thickness**  
ÖZDEMİR B., Yarar Z., Ozdemir M. D., ATASEVER O. S., ÖZDEMİR M.  
JOURNAL OF ELECTRONIC MATERIALS, vol.44, no.10, pp.3733-3737, 2015 (SCI-Expanded)
6. **A comparative study of transport properties of monolayer graphene and AlGaIn-GaN heterostructure**  
Ozdemir M. D., ATASEVER O., ÖZDEMİR B., Yarar Z., ÖZDEMİR M.  
AIP ADVANCES, vol.5, no.7, 2015 (SCI-Expanded)
7. **Tritium activity levels in drinking water of Adana, Turkey**  
Goren E., Turhan S., Ugur F. A., Gezer F., ÖZDEMİR B., UFUKTEPE Y.  
JOURNAL OF RADIOANALYTICAL AND NUCLEAR CHEMISTRY, vol.299, no.3, pp.1427-1431, 2014 (SCI-Expanded)
8. **Transport and mobility properties of bulk indium nitride (InN) and a two-dimensional electron gas in an InGaIn/GaN quantum well**  
YARAR Z., Ozdemir B., OZDEMİR M.  
JOURNAL OF ELECTRONIC MATERIALS, vol.36, no.10, pp.1303-1312, 2007 (SCI-Expanded)
9. **Electron mobility in a modulation doped AlGaIn/GaN quantum well**  
YARAR Z., Ozdemir B., OZDEMİR M.  
EUROPEAN PHYSICAL JOURNAL B, vol.49, no.4, pp.407-414, 2006 (SCI-Expanded)
10. **Mobility of electrons in a AlGaIn/GaN QW: Effect of temperature, applied field, surface roughness**

and well width

YARAR Z., Ozdemir B., OZDEMİR M.

PHYSICA STATUS SOLIDI B-BASIC SOLID STATE PHYSICS, vol.242, no.14, pp.2872-2884, 2005 (SCI-Expanded)

11. **SELF-CONSISTENT FIELD CALCULATIONS FOR GAAS/GAALAS SAWTOOTH SUPERLATTICES**

USLU B., ERKOC S.

SOLID STATE COMMUNICATIONS, vol.68, no.2, pp.277-281, 1988 (SCI-Expanded)

### Articles Published in Other Journals

1. **MANYETİK ALAN ALTINDAKİ İKİ BOYUTLU ELEKTRON GAZININ KİMYASAL POTANSİYELİ ISI SIĞASI VE MANYETİZASYONU**

Tekin M., ÖZDEMİR B.

Ç.Ü. Fen ve Mühendislik Bilimleri Dergisi, 2016 (Peer-Reviewed Journal)

2. **KATMANLI GRAFENİN ELEKTRONİK ÖZELLİKLERİNİN MONTE CARLO YÖNTEMİ İLE HESABI VE GRAFENİN OPTİK ÖZELLİKLER**

Atasever Ö., ÖZDEMİR B.

Ç.Ü Fen ve Mühendislik Bilimleri Dergisi, vol.33, no.1, 2015 (Peer-Reviewed Journal)

3. **Adana İçme Sularında Trityum Aktivitesinin Belirlenmesi**

Gören E., ÖZDEMİR B.

ÇÜ Fen Bilimleri Enstitüsü Fen ve Mühendislik Bilimleri Dergisi, vol.30, no.5, pp.65-68, 2013 (Peer-Reviewed Journal)

4. **Delta Katkılı Yarıiletkenlerin Elektronik Özellikleri**

Öznur S., ÖZDEMİR B.

ÇÜ Fen Bilimleri Enstitüsü Fen ve Mühendislik Bilimleri Dergisi, vol.25, no.2, pp.190-199, 2011 (Peer-Reviewed Journal)

5. **ELECTRON TRANSPORT AND MOBILITY CALCULATION IN A ALGAAS GAAS 2DEG BY MONTE CARLO METHOD**

YARAR Z., ÖZDEMİR B., ÖZDEMİR M.

Erciyes Üniversitesi Fen Bilimleri Enstitüsü Dergisi, vol.21, pp.13-23, 2005 (Peer-Reviewed Journal)

6. **Variation of Chemical Potential Oscillations of a 2DEG in a Quantum Well Under a Magnetic Field for Multiple Sub-Band Occupation as Function of Temperature and Level-Broadening**

Özdemir B., Yazar Z., ÖZDEMİR M.

Turkish Journal of Physics, vol.28, pp.1-15, 2004 (Scopus)

7. **Manyetik Alan Altındaki İki Boyutlu Bir Elektron Gazında Fermi Enerjisinin Sıcaklığa Bağımlılığı**  
ÖZDEMİR B.

SDÜ Fen Bilimleri Enstitüsü Dergisi, vol.8, no.2, pp.193-196, 2004 (Peer-Reviewed Journal)

### Refereed Congress / Symposium Publications in Proceedings

1. **Electron Mobility in a Si-delta doped GaAs: a Monte Carlo study**

Özdemir B.

2nd International Congress on Scientific Advances (ICONSAD'22), Konya, Turkey, 21 - 24 December 2022, pp.800

2. **Electronic Transport Properties of WS<sub>2</sub> With Ensemble Monte Carlo Method**

Alyörük M. D., Cekil H. C., Özdemir B., Yazar Z., Özdemir M.

9 th International Conference on Materials Science and Nanotechnology for Next Generation, Ankara, Turkey, 22 - 24 September 2022, pp.77

3. **Electron Transport Properties of Silicene: Intrinsic and Dirty Cases with Screening Effects**

ÖZDEMİR M. D., ÇEKİL H. C., YARAR Z., ATASEVER Ö., ÖZDEMİR B., ÖZDEMİR M.

5th International Conference on Materials Science and Nanotechnology For Next Generation (MSNG2018),

Nevşehir, Turkey, 4 - 06 October 2018

4. **Transport properties of ZnMgO/ZnO structure with screening effects**  
YARAR Z., Uslu S., ÖZDEMİR M. D., ÖZDEMİR B., Atasever Ö., ÖZDEMİR M.  
INTERNATIONAL CONFERENCE ON CONDENSED MATTER AND MATERIAL SCIENCES, 11 - 15 October 2017
5. **Various Scattering Mechanisms in AlGa<sub>n</sub>/Ga<sub>n</sub> Hetero Structure and Investigation of Screening Effect**  
YARAR Z., Cessur D., ÖZDEMİR M. D., ÖZDEMİR B., Atasever Ö., ÖZDEMİR M.  
INTERNATIONAL CONFERENCE ON CONDENSED MATTER AND MATERIAL SCIENCES, 11 - 15 October 2017
6. **A Comparison of Silicene and Graphene Mobilities with an EMC Technique**  
ÖZDEMİR M. D., Çekil C., Atasever Ö., ÖZDEMİR B., YARAR Z., ÖZDEMİR M.  
INTERNATIONAL CONFERENCE ON CONDENSED MATTER AND MATERIAL SCIENCES, 11 - 15 October 2017
7. **Various Scattering Mechanisms in AlGa<sub>n</sub>/Ga<sub>n</sub> Hetero Structure and Investigation of Screening Effect**  
YARAR Z., Cessur D., ÖZDEMİR M. D., ÖZDEMİR B., Atasever Ö., ÖZDEMİR M.  
INTERNATIONAL CONFERENCE ON CONDENSED MATTER AND MATERIAL SCIENCES, 11 - 15 October 2017
8. **TRANSPORT CHARACTERISTICS OF AL DOPED GAN**  
YARAR Z., Cessur D., ÖZDEMİR M. D., ÖZDEMİR B., Atasever Ö., ÖZDEMİR M.  
TURKISH PHYSICAL SOCIETY 33rd INTERNATIONAL PHYSICS CONGRESS, 6 - 10 September 2017
9. **Ensemble Monte Carlo Analysis of Electron transport in Silicene**  
ÖZDEMİR M. D., Atasever Ö., ÖZDEMİR B., YARAR Z., ÖZDEMİR M.  
Türk Fizik Derneği 33. Uluslararası Fizik Kongresi, 6 - 10 September 2017
10. **THE EFFECT OF SCREENING ON THE PHONON SCATTERINGS IN ZNMGO/ZNO STRUCTURES**  
YARAR Z., Uslu S., ÖZDEMİR M. D., ÖZDEMİR B., Atasever Ö., ÖZDEMİR M.  
TURKISH PHYSICAL SOCIETY 33rd INTERNATIONAL PHYSICS CONGRESS, 6 - 10 September 2017
11. **Transport Properties of Intrinsic and Dirty Graphene with EMC The Role of Various Scattering Mechanisms**  
ÖZDEMİR M. D., Atasever Ö., ÖZDEMİR B., YARAR Z., ÖZDEMİR M.  
European Symposium on Surface Science, 21 - 23 September 2016
12. **Transport properties of intrinsic and dirty graphene The role of surface roughness scattering**  
ÖZDEMİR M. D., atasever ö., YARAR Z., ÖZDEMİR B., ÖZDEMİR M.  
European Graphene Forum, Advanced Materials World Congress 2015, 23 - 25 August 2015
13. **Calculation of The Low Field Mobility of Bilayer Graphene With Monte Carlo Method**  
Atasever Ö., ÖZDEMİR M. D., ÖZDEMİR B., YARAR Z., ÖZDEMİR M.  
9th International Physics Conference of the Balkan Physical Union, 24 - 27 August 2015
14. **Transport properties of intrinsic and dirty graphene The role of interface roughness scattering**  
ÖZDEMİR M. D., Atasever Ö., YARAR Z., ÖZDEMİR B., ÖZDEMİR M.  
European Graphene Forum 2015, 23 - 26 August 2015
15. **A Comparative Study of Transport Properties of Monolayer Graphene and AlGa<sub>n</sub>/Ga<sub>n</sub> Heterostructure**  
Özdemir M. D., ATASEVER Ö. S., ÖZDEMİR B., YARAR Z., ÖZDEMİR M.  
European Symposium on Surface Science, Roma, Italy, 26 November 2014, pp.1
16. **Dynamical Conductivity of a Single Layer Graphene**  
Atasever Ö., ÖZDEMİR M. D., ÖZDEMİR B.  
GRM2014-Graphene and Related Materials, İzmir, Turkey, 9 - 11 July 2014
17. **İki Boyutlu Yapılarda Perdeleme ve Elektron Saçılma Mekanizmalarına Etkisi**  
Atasever Ö., ÖZDEMİR M. D., ÖZDEMİR B.  
Türk Fizik Derneği 30. Uluslararası Fizik Kongresi, 2 - 05 September 2013
18. **Değiş Tokuş Potansiyelin Delta Katkılı Yarıiletkenlerin Elektronik Özelliklerine Etkisi**  
Öznur S., ÖZDEMİR B.  
Türk Fizik Derneği 27. Uluslararası Fizik Kongresi, 14 - 17 September 2010
19. **Manyetik Alan Altındaki İki Boyutlu Bir Elektron Gazında Fermi Enerjisinin Sıcaklığa Bağımlılığı**  
ÖZDEMİR B.  
Türk Fizik Derneği 21. Fizik Kongresi, 11 - 14 September 2002

## Other Publications

1. **Optik (Bölüm Çevirisi)**  
Özdemir B.  
Other, pp.1-650, 2014
2. **Parçacıklar ve Sistemler için Klasik Dinamik (Bölüm Çevirisi)**  
Özdemir B.  
Other, pp.1-650, 2011
3. **Fen Bilimcileri ve Mühendisler için FİZİK (Bölüm çevirisi)**  
Önengüt G., Özdemir B., Özdemir M.  
Other, pp.1200, 2009

## Courses

Teorik Mekanik II, Undergraduate, 2022 - 2023, 2021 - 2022, 2020 - 2021, 2019 - 2020  
Kuantum Mekaniği II, Undergraduate, 2022 - 2023, 2021 - 2022, 2020 - 2021  
Physics II, Undergraduate, 2022 - 2023, 2021 - 2022, 2020 - 2021, 2019 - 2020  
Kuantum Mekaniği II, Doctorate, 2022 - 2023, 2021 - 2022, 2020 - 2021, 2019 - 2020  
Malzeme Bilimine Giriş, Undergraduate, 2022 - 2023, 2021 - 2022, 2020 - 2021  
Analitik Mekanik, Postgraduate, 2022 - 2023, 2021 - 2022, 2020 - 2021, 2019 - 2020, 2018 - 2019  
Düşük Boyutlu Kuantum Sistemleri II, Postgraduate, 2021 - 2022, 2020 - 2021  
Physics I, Undergraduate, 2022 - 2023, 2021 - 2022, 2020 - 2021, 2019 - 2020  
Kuantum Mekaniği I, Undergraduate, 2022 - 2023, 2021 - 2022, 2020 - 2021  
Teorik Mekanik I, Undergraduate, 2022 - 2023, 2021 - 2022, 2020 - 2021, 2019 - 2020  
Düşük Boyutlu Kuantum Sistemleri I, Postgraduate, 2021 - 2022, 2020 - 2021

## Metrics

Publication: 40  
Citation (WoS): 57  
Citation (Scopus): 65  
H-Index (WoS): 4  
H-Index (Scopus): 5

## Research Areas

Physics, Intensive Article 2: Electronic Structure, Electric, Magnetic and Optical Properties, Electrical properties of electronic structures, interfaces, thin films and low-dimensional structures, Natural Sciences