



# SEFER BORA LIŞESİVDİN

## PROF.

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Teknikokullar Ankara

### International Researcher IDs

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Publons / Web Of Science ResearcherID: A-9748-2008

ScopusID: 16242267700

Yoksis Researcher ID: 41995



## Biography

He was graduated from Hacettepe University, Department of Physics Engineering in 2003. Then, he completed his M.Sc. studies about electron and magnetotransport properties of AlGaAs/GaAs and InGaAs/GaAs heterostructures at Gazi University, Advanced Technologies Department in 2005. He went to the University of Essex (UK) as a visiting research student for 6 months. He completed his Ph.D. studies about electron and magnetotransport properties, scattering properties of 2D electrons, and hot electron transport of AlGaIn/GaN HEMT structures grown by MOCVD in 2008. He worked as a postdoc at Bilkent University, Nanotechnology Research Center between 2008-2009. He started to work at Gazi University in 2009 as a faculty member. He went to the University of Essex (UK) and Universität Ulm (Germany) as a visiting researcher in 2013 and 2019, respectively. He is still working as a full professor at Gazi University, Physics Department.

## Learning Knowledge

Doctorate  
2005 - 2008

Gazi University, Fen Bilimleri Enstitüsü, Fizik (Dr), Turkey

Postgraduate  
2004 - 2005

Gazi University, Fen Bilimleri Enstitüsü, İleri Teknolojiler Anabilim Dalı (Disiplinlerarası), Turkey

Undergraduate  
1997 - 2003

Hacettepe University, Mühendislik Fakültesi, Fizik Mühendisliği Bölümü, Turkey

## Foreign Languages

English, C1 Advanced

## Dissertations

Doctorate, AlGa<sub>N</sub>/Ga<sub>N</sub> temelli yüksek elektron hareketlilikli transistörlerin (HEMT) elektron ve manyeto iletim özellikleri, Gazi University, Fen Bilimleri Enstitüsü, Fizik (Dr), 2008

Postgraduate, MBE tekniği ile büyütülen InGaAs/GaAs ve AlGaAs yarıiletkenlerinin iletim özellikleri, Gazi University, Fen Bilimleri Enstitüsü, İleri Teknolojiler Anabilim Dalı (Disiplinlerarası), 2005

## Academic Titles / Tasks

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| Professor<br>2018 - Continues | Gazi University, Fen Fakültesi, Fizik |
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| Associate Professor<br>2011 - 2018 | Gazi University, Fen Fakültesi, Fizik |
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| Assistant Professor<br>2009 - 2011 | Gazi University, Fen Fakültesi, Fizik |
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## Supported Projects

1. Lişesivdin S. B., Lişesivdin B., Project Supported by Higher Education Institutions, MistCVD ile büyütülen p-tipi Cu<sub>2</sub>O yarıiletken incefilmler ile Ga<sub>2</sub>O<sub>3</sub>/Cu<sub>2</sub>O p-n kavşak üretimi ve ilgili hesaplamalı çalışmaları, 2022 - 2023
2. Lişesivdin S. B., Yıldız A., TUBITAK Project, Investigation of Growth Behaviors and 2DEG Properties of MgZnO/ZnO Heterostructures grown by USPECVD Method, 2017 - 2020
3. Lişesivdin S. B., Tıraş E., TÜBİTAK International Bilateral Joint Cooperation Program Project, Modification of properties of two-dimensional electronic gas using insitu surface passivation of AlGa<sub>N</sub>/Ga<sub>N</sub> heterostructures by molecular beam epitaxy, 2014 - 2016
4. Lişesivdin S. B., Lişesivdin B., Project Supported by Higher Education Institutions, Mg<sub>x</sub>Zn<sub>1-x</sub>O/ZnO ve Be<sub>x</sub>Zn<sub>1-x</sub>O/ZnO çoklu yapılarını temel alan transistörlerin numerik optimizasyonu, 2012 - 2013
5. Özbay E., TUBITAK Project, SAVS020 Defence Project, 2008 - 2013
6. Lişesivdin S. B., Project Supported by Higher Education Institutions, Investigation of the effects of transition metal palladium on electrical, structural and optical properties of graphene nanoribbons, 2012 - 2012
7. Kasap M., Özçelik S., Lişesivdin S. B., Yıldız A., Aydın S. Ş., TÜBİTAK International Bilateral Joint Cooperation Program Project, MOVPE Growth and Characterization of Epitaxial Germanium for Infrared Photovoltaic and Sensor Applications, 2010 - 2012
8. Özbay E., Lişesivdin S. B., TUBITAK Project, SAVS Defence Project, 2009 - 2011
9. Özçelik S., Mammadov T., Kasap M., TUBITAK Project, Epitaxial Production and Characterization of Infrared AlGaAs Laser Diode Materials, 2008 - 2010
10. Yıldız A., Kasap M., TÜBİTAK International Bilateral Joint Cooperation Program Project, Studies on synthesis and characterization of TiO<sub>2</sub> thin film nanostructures which have applications in ecological physics, 2008 - 2010
11. Özbay E., Lişesivdin S. B., TUBITAK Project, SAVM005 Defence Project, 2006 - 2009

## Awards

1. Lişesivdin S. B., TUBA GEBIP Distinguished Young Scientist Award, Türkiye Bilimler Akademisi, February 2017
2. Lişesivdin S. B., Prof. Dr. Şevket Erk Outstanding Young Scientist Award, Türk Fizik Derneği, July 2014

## Scholarships

Elektriksel uyarmalı dikey kovuklu yarıiletken seyreltik nitrür optik yükselteçlerin elektriksel ve optik incelemeleri, TUBITAK, 2013 - 2013

AlGaN/GaN Temelli Yüksek Elektron Mobiliteli Transistörlerin (HEMT) Sıcak-Elektron İletim Özelliklerinin İncelenmesi, TUBITAK, 2007 - 2008

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

- 1. Influence of pH value of precursor on growth, structural, and optical properties of Cu<sub>2</sub>O thin films grown in Mist-CVD**  
Kutlu-Narin E., NARİN P., EMRE Ş. B., LİŞESİVDİN S. B.  
Physica B: Condensed Matter, vol.681, 2024 (SCI-Expanded)
- 2. The comprehensive investigation of barrier layers on power loss mechanisms in AlGa<sub>N</sub>/Ga<sub>N</sub> HEMT structures**  
Ardali S., Sonmez F., LİŞESİVDİN S. B., Malin T., Mansurov V., Zhuravlev K., Tiras E.  
Materials Science and Engineering: B, vol.300, 2024 (SCI-Expanded)
- 3. Structural and optical properties of mist-CVD grown MgZnO: Effect of precursor solution composition**  
Han T., Kutlu-Narin E., NARİN P., LİŞESİVDİN B., LİŞESİVDİN S. B.  
Physica B: Condensed Matter, vol.659, 2023 (SCI-Expanded)
- 4. First principles calculations of electronic and optical properties of InSe nanosheets doped with noble metal atoms**  
NARİN P., All Abbas J., Kutlu-Narin E., LİŞESİVDİN S. B., Ozbay E.  
Computational Materials Science, vol.222, 2023 (SCI-Expanded)
- 5. Effect of sulfur concentration on structural, optical and electrical properties of Cu<sub>2</sub>CoSnS<sub>4</sub> absorber film for photovoltaic devices**  
Senguler G. Y., Narin E. K., LİŞESİVDİN S. B., Serin T.  
Physica B: Condensed Matter, vol.648, 2023 (SCI-Expanded)
- 6. Electronic Properties of a Novel Boron Polymorph: Ogee-Borophene**  
LİŞESİVDİN B., LİŞESİVDİN S. B.  
Advances in Condensed Matter Physics, vol.2023, 2023 (SCI-Expanded)
- 7. Morphological and optical characterizations of different ZnO nanostructures grown by mist-CVD**  
NARİN P., Kutlu-Narin E., Kayral S., Tulek R., Gokden S., Teke A., LİŞESİVDİN S. B.  
Journal of Luminescence, vol.251, 2022 (SCI-Expanded)
- 8. A structural analysis of ultrathin barrier (In)AlN/GaN heterostructures for GaN-based high-frequency power electronics**  
Narin P., Kutlu-Narin E., Atmaca G., Sarikavak-Lisesivdin B., LİŞESİVDİN S. B., ÖZBAY E.  
SURFACE AND INTERFACE ANALYSIS, vol.54, no.5, pp.576-583, 2022 (SCI-Expanded)
- 9. gpaw-tools – higher-level user interaction scripts for GPAW calculations and interatomic potential based structure optimization**  
Lişesivdin S. B., Sarikavak-Lisesivdin B.  
Computational Materials Science, vol.204, 2022 (SCI-Expanded)
- 10. A novel hot carrier-induced blue light-emitting device**  
Mutlu S., Erol A., Arslan E., Ozbay E., Lisesivdin S. B., Tiras E.  
JOURNAL OF ALLOYS AND COMPOUNDS, vol.881, 2021 (SCI-Expanded)
- 11. Investigation of Structural and Optical Properties of ZnO Thin Films Grown on Different Substrates by Mist-CVD Enhanced with Ozone Gas Produced by Corona Discharge Plasma**  
Kutlu-Narin E., Narin P., LİŞESİVDİN S. B., Sarikavak-Lisesivdin B.  
ADVANCES IN CONDENSED MATTER PHYSICS, vol.2021, 2021 (SCI-Expanded)

12. **Growth dynamics of mist-CVD grown ZnO nanoplatelets**  
Narin P., Kutlu-Narin E., LİŞESİVDİN S. B.  
PHYSICA B-CONDENSED MATTER, vol.614, 2021 (SCI-Expanded)
13. **The effect of barrier layers on 2D electron effective mass in Al<sub>0.3</sub>Ga<sub>0.7</sub>N/AlN/GaN heterostructures**  
Sonmez F., Ardali S., Lisesivdin S. B., Malin T., Mansurov V., Zhuravlev K., Tiras E.  
JOURNAL OF PHYSICS-CONDENSED MATTER, vol.33, no.25, 2021 (SCI-Expanded)
14. **Effect of magnesium content and growth temperature on structural and optical properties of USCVD-grown MgZnO films**  
Kutlu-Narin E., Narin P., Yildiz A., Lisesivdin S. B.  
APPLIED PHYSICS A-MATERIALS SCIENCE & PROCESSING, vol.127, no.5, 2021 (SCI-Expanded)
15. **The effect of passivation layer, doping and spacer layer on electron-longitudinal optical phonon momentum relaxation time in Al<sub>0.3</sub>Ga<sub>0.7</sub>N/AlN/GaN heterostructures**  
Sonmez F., Ardali S., Atmaca G., Lisesivdin S. B., Malin T., Mansurov V., Zhuravlev K., Tiras E.  
MATERIALS SCIENCE IN SEMICONDUCTOR PROCESSING, vol.122, 2021 (SCI-Expanded)
16. **General-purpose open-source 1D self-consistent Schrodinger-Poisson Solver: Aestimo 1D**  
Hebal H., Koziol Z., Lisesivdin S. B., Steed R.  
COMPUTATIONAL MATERIALS SCIENCE, vol.186, 2021 (SCI-Expanded)
17. **Structural parameters and electronic properties of 2D carbon allotrope: Graphene with a kagome lattice structure**  
Sarikavak-Lisesivdin B., LİŞESİVDİN S. B., Ozbay E., Jelezko F.  
CHEMICAL PHYSICS LETTERS, vol.760, 2020 (SCI-Expanded)
18. **Effects of annealing under different atmospheres on structural and optical properties of USCVD grown ZnO nanostructures**  
Kutlu-Narin E., Narin P., Yildiz A., Lisesivdin S. B.  
MATERIALS SCIENCE AND ENGINEERING B-ADVANCED FUNCTIONAL SOLID-STATE MATERIALS, vol.254, 2020 (SCI-Expanded)
19. **Investigation of electronic and optical properties of wurtzite MgZnO using GGA plus U formalism**  
Ibrahim R., NARİN P., Lisesivdin S. B., Ozbay E.  
PHILOSOPHICAL MAGAZINE LETTERS, 2019 (SCI-Expanded)
20. **Ab initio study of electronic properties of armchair graphene nanoribbons passivated with heavy metal elements**  
NARİN P., Abbas J. M. A., Atmaca G., Kutlu E., LİŞESİVDİN S. B., Ozbay E.  
SOLID STATE COMMUNICATIONS, vol.296, pp.8-11, 2019 (SCI-Expanded)
21. **Scattering analysis of ultrathin barrier (< 7nm) GaN-based heterostructures**  
NARİN P., Arslan E., Ozturk M., Ozturk M., LİŞESİVDİN S. B., ÖZBAY E.  
APPLIED PHYSICS A-MATERIALS SCIENCE & PROCESSING, vol.125, no.4, 2019 (SCI-Expanded)
22. **Electronic properties of zigzag ZnO nanoribbons with hydrogen and magnesium passivations**  
Abbas J. M. A., NARİN P., Kutlu E., LİŞESİVDİN S. B., Ozbay E.  
PHYSICA B-CONDENSED MATTER, vol.556, pp.12-16, 2019 (SCI-Expanded)
23. **Electronic properties of graphene nanoribbons doped with zinc, cadmium, mercury atoms**  
Omeroglu O., Kutlu E., NARİN P., LİŞESİVDİN S. B., Ozbay E.  
PHYSICA E-LOW-DIMENSIONAL SYSTEMS & NANOSTRUCTURES, vol.104, pp.124-129, 2018 (SCI-Expanded)
24. **Negative Differential Resistance Observation and a New Fitting Model for Electron Drift Velocity in GaN-Based Heterostructures**  
Atmaca G., NARİN P., Kutlu E., Malin T. V., Mansurov V. G., Zhuravlev K. S., LİŞESİVDİN S. B., ÖZBAY E.  
IEEE TRANSACTIONS ON ELECTRON DEVICES, vol.65, no.3, pp.950-956, 2018 (SCI-Expanded)
25. **Electronic and optical properties of black phosphorus doped with Au, Sn and I atoms**  
Kutlu E., NARİN P., LİŞESİVDİN S. B., Ozbay E.  
PHILOSOPHICAL MAGAZINE, vol.98, no.2, pp.155-164, 2018 (SCI-Expanded)
26. **Structural and optical properties of hexagonal ZnO nanostructures grown by ultrasonic sprayCVD**  
NARİN P., Kutlu E., Atmaca G., ATILGAN A., Yildiz A., LİŞESİVDİN S. B.

- OPTIK, vol.168, pp.86-91, 2018 (SCI-Expanded)
27. **High Figure-of-Merit(V-BR(2)/R-ON) AlGa<sub>n</sub>/Ga<sub>n</sub> Power HEMT With Periodically C-Doped Ga<sub>n</sub> Buffer and AlGa<sub>n</sub> Back Barrier**  
Lee J., Ju J., Atmaca G., Kim J., Kang S., Lee Y. S., Lee S., Lim J., Kwon H., LİŞESİVDİN S. B., et al.  
IEEE JOURNAL OF THE ELECTRON DEVICES SOCIETY, vol.6, no.1, pp.1179-1186, 2018 (SCI-Expanded)
  28. **A Comparative Study of AlGa<sub>n</sub> and InGa<sub>n</sub> Back-Barriers in Ultrathin-Barrier AlN/Ga<sub>n</sub> Heterostructures**  
Abbas J. M. A., Atmaca G., NARİN P., Kutlu E., Sarikavak-Lisesivdin B., Lisesivdin S. B.  
JOURNAL OF ELECTRONIC MATERIALS, vol.46, no.8, pp.5278-5286, 2017 (SCI-Expanded)
  29. **The effect of doping in different layers on 2DEG for ultrathin-barrier AlN/Ga<sub>n</sub> heterostructures**  
Al Abbas J. M., NARİN P., Atmaca G., Kutlu E., Sarikavak-Lisesivdin B., Lisesivdin S. B.  
OPTOELECTRONICS AND ADVANCED MATERIALS-RAPID COMMUNICATIONS, vol.11, pp.328-331, 2017 (SCI-Expanded)
  30. **Electronic structure of beta-Si<sub>3</sub>N<sub>4</sub> crystals with substitutional icosagen group impurities**  
Kutlu E., NARİN P., Atmaca G., Sarikavak-Lisesivdin B., LİŞESİVDİN S. B., Ozbay E.  
JOURNAL OF OPTOELECTRONICS AND ADVANCED MATERIALS, vol.19, pp.278-282, 2017 (SCI-Expanded)
  31. **A first principles investigation of the effect of aluminum, gallium and indium impurities on optical properties of beta-Si<sub>3</sub>N<sub>4</sub> structure**  
NARİN P., Kutlu E., Atmaca G., LİŞESİVDİN S. B., Ozbay E.  
OPTIK, vol.147, pp.115-122, 2017 (SCI-Expanded)
  32. **The effect of doping in different layers on 2DEG for ultrathin-barrier AlN/Ga<sub>n</sub> heterostructures**  
Al Abbas J., Narin P., Atmaca G., Kutlu E., Sarikavak-Lisesivdin B., LİŞESİVDİN S. B.  
Optoelectronics and Advanced Materials, Rapid Communications, vol.11, pp.328-331, 2017 (SCI-Expanded)
  33. **Effect of substitutional As impurity on electrical and optical properties of beta-Si<sub>3</sub>N<sub>4</sub> structure**  
Kutlu E., NARİN P., Atmaca G., Sarikavak-Lisesivdin B., Lisesivdin S. B., Ozbay E.  
MATERIALS RESEARCH BULLETIN, vol.83, pp.128-134, 2016 (SCI-Expanded)
  34. **Electronic properties of Li-doped zigzag graphene nanoribbons**  
NARİN P., Kutlu E., Sarikavak-Lisesivdin B., Lisesivdin S. B., Ozbay E.  
PHYSICA E-LOW-DIMENSIONAL SYSTEMS & NANOSTRUCTURES, vol.84, pp.543-547, 2016 (SCI-Expanded)
  35. **Two dimensional electron gas in a hybrid Ga<sub>n</sub>/InGa<sub>n</sub>/ZnO heterostructure with ultrathin InGa<sub>n</sub> channel layer**  
Atmaca G., NARİN P., Sarikavak-Lisesivdin B., Lisesivdin S. B.  
PHYSICA E-LOW-DIMENSIONAL SYSTEMS & NANOSTRUCTURES, vol.79, pp.67-71, 2016 (SCI-Expanded)
  36. **Scattering analysis of 2DEG mobility in undoped and doped AlGa<sub>n</sub>/AlN/Ga<sub>n</sub> heterostructures with an in situ Si<sub>3</sub>N<sub>4</sub> passivation layer**  
Atmaca G., Ardali S., Tiras E., Malin T., Mansurov V. G., Zhuravlev K. S., LİŞESİVDİN S. B.  
SOLID-STATE ELECTRONICS, vol.118, pp.12-17, 2016 (SCI-Expanded)
  37. **Energy relaxation of hot electrons by LO phonon emission in AlGa<sub>n</sub>/AlN/Ga<sub>n</sub> heterostructure with in situ Si<sub>3</sub>N<sub>4</sub> passivation**  
Atmaca G., Ardali S., NARİN P., Kutlu E., LİŞESİVDİN S. B., Malin T., Mansurov V., Zhuravlev K., Tiras E.  
JOURNAL OF ALLOYS AND COMPOUNDS, vol.659, pp.90-94, 2016 (SCI-Expanded)
  38. **Evaluation of morphological and chemical differences of gunshot residues in different ammunitions using SEM/EDS technique**  
Kara I., Sarikavak Y., LİŞESİVDİN S. B., KASAP M.  
ENVIRONMENTAL FORENSICS, vol.17, no.1, pp.68-79, 2016 (SCI-Expanded)
  39. **The variation of temperature-dependent carrier concentration and mobility in AlGa<sub>n</sub>/AlN/Ga<sub>n</sub> heterostructure with Si<sub>3</sub>N<sub>4</sub> passivation**  
Ardali S., Atmaca G., LİŞESİVDİN S. B., Malin T., Mansurov V., Zhuravlev K., Tiras E.  
PHYSICA STATUS SOLIDI B-BASIC SOLID STATE PHYSICS, vol.252, no.9, pp.1960-1965, 2015 (SCI-Expanded)
  40. **The Relationship Between the Surface Morphology and Chemical Composition of Gunshot Residue Particles**

Kara I, LİŞESİVDİN S. B., Kasap M., Er E., Uzek U.

JOURNAL OF FORENSIC SCIENCES, vol.60, no.4, pp.1030-1033, 2015 (SCI-Expanded)

41. **Energy Relaxation of Electrons in InGaN Quantum Wells**  
Sarıkavak-Lisesivdin B., LİŞESİVDİN S. B., Balkan N., Atmaca G., NARİN P., Cakmak H., ÖZBAY E.  
METALLURGICAL AND MATERIALS TRANSACTIONS A-PHYSICAL METALLURGY AND MATERIALS SCIENCE, no.4, pp.1565-1569, 2015 (SCI-Expanded)
42. **Electron Transport Properties of Two-Dimensional Electron Gas in  $\text{Be}_x\text{Zn}_{1-x}\text{O}/\text{ZnO}$  Heterostructures**  
Atmaca G., Narin P., Lisesivdin S. B., Kasap M., Sarıkavak-Lisesivdin B.  
PHILOSOPHICAL MAGAZINE, vol.95, no.1, pp.79-89, 2015 (SCI-Expanded)
43. **Numerical investigation of the 2DEG properties of AlGaN/AlN/GaN HEMT structures with InGaN/GaN MQW back-barrier structure**  
Atmaca G., Tasli P., Karakoc G., Yazbahar E., LİŞESİVDİN S. B.  
PHYSICA E-LOW-DIMENSIONAL SYSTEMS & NANOSTRUCTURES, vol.65, pp.110-113, 2015 (SCI-Expanded)
44. **Analytic modeling of temperature dependence of 2D carrier mobility in as-grown and annealed GaInNAs/GaAs quantum well structures**  
DÖNMEZ Ö., SARCAN F., LİŞESİVDİN S. B., Vaughan M. P., EROL A., Gunes M., Arıkan M. C., Puustinen J., Guina M.  
SEMICONDUCTOR SCIENCE AND TECHNOLOGY, vol.29, no.12, 2014 (SCI-Expanded)
45. **Extraction and scattering analyses of 2D and bulk carriers in epitaxial graphene-on-SiC structure**  
LİŞESİVDİN S. B., Atmaca G., Arslan E., Cakmakyapan S., Kazar O., Butun S., Ul-Hassan J., Janzen E., Ozbay E.  
PHYSICA E-LOW-DIMENSIONAL SYSTEMS & NANOSTRUCTURES, vol.63, pp.87-92, 2014 (SCI-Expanded)
46. **SiC Substrate Effects on Electron Transport in the Epitaxial Graphene Layer**  
Arslan E., Cakmakyapan S., Kazar O., Butun S., LİŞESİVDİN S. B., CİNEL N. A., ERTAŞ G., Ardali S., Tiras E., Jawad-ul-Hassan J., et al.  
ELECTRONIC MATERIALS LETTERS, vol.10, no.2, pp.387-391, 2014 (SCI-Expanded)
47. **Optical gain in 1.3- $\mu\text{m}$  electrically driven dilute nitride VCISOAs**  
LİŞESİVDİN S. B., Khan N. A., Mazzucato S., Balkan N., Adams M. J., Korpıjarvi V., Guina M., Mezosi G., Sorel M.  
NANOSCALE RESEARCH LETTERS, vol.9, 2014 (SCI-Expanded)
48. **A numerical study on subband structure of  $\text{In}_x\text{Al}_{1-x}\text{N}/\text{GaN}$ -based HEMT structures with low-indium ( $x < 0.10$ ) barrier layer**  
Elıbol K., Atmaca G., Tasli P., LİŞESİVDİN S. B.  
SOLID STATE COMMUNICATIONS, vol.162, pp.8-12, 2013 (SCI-Expanded)
49. **First-principles calculations of Pd-terminated symmetrical armchair graphene nanoribbons**  
Kuloglu A. F., Sarıkavak-Lisesivdin B., Lisesivdin S. B., Ozbay E.  
COMPUTATIONAL MATERIALS SCIENCE, vol.68, pp.18-22, 2013 (SCI-Expanded)
50. **The effect of  $\text{In}_x\text{Ga}_{1-x}\text{N}$  back-barriers on the dislocation densities in  $\text{Al}_{0.31}\text{Ga}_{0.69}\text{N}/\text{AlN}/\text{GaN}/\text{In}_x\text{Ga}_{1-x}\text{N}/\text{GaN}$  heterostructures ( $0.05 \leq x \leq 0.14$ )**  
Sarıkavak-Lisesivdin B., Lisesivdin S. B., Ozbay E.  
CURRENT APPLIED PHYSICS, vol.13, no.1, pp.224-227, 2013 (SCI-Expanded)
51. **Temperature dependent energy relaxation time in AlGaN/AlN/GaN heterostructures**  
Tiras E., Celik O., Mutlu S., Ardali S., LİŞESİVDİN S. B., ÖZBAY E.  
SUPERLATTICES AND MICROSTRUCTURES, vol.51, no.6, pp.733-744, 2012 (SCI-Expanded)
52. **Determination of the LO phonon energy by using electronic and optical methods in AlGaN/GaN**  
Celik O., Tiras E., Ardali S., LİŞESİVDİN S. B., ÖZBAY E.  
CENTRAL EUROPEAN JOURNAL OF PHYSICS, vol.10, no.2, pp.485-491, 2012 (SCI-Expanded)
53. **Ab initio study of Ru-terminated and Ru-doped armchair graphene nanoribbons**  
Sarıkavak-Lisesivdin B., Lisesivdin S. B., Ozbay E.  
MOLECULAR PHYSICS, vol.110, no.18, pp.2295-2300, 2012 (SCI-Expanded)
54. **Numerical optimization of In-mole fractions and layer thicknesses in  $\text{Al}_x\text{Ga}_{1-x}\text{N}/\text{AlN}/\text{GaN}$  high electron mobility transistors with InGaN back barriers**  
Kelekci O., LİŞESİVDİN S. B., Ozcelik S., Ozbay E.  
Physica B: Condensed Matter, vol.406, no.8, pp.1513-1518, 2011 (SCI-Expanded)

55. **Grain Boundary Related Electrical Transport in Al-rich AlxGa1-xN Layers Grown by Metal-Organic Chemical Vapor Deposition**  
Yildiz A., Tasli P., Sarikavak B., Lisesivdin S. B., Ozturk M. K., Kasap M., Ozcelik S., Ozbay E.  
SEMICONDUCTORS, vol.45, no.1, pp.33-36, 2011 (SCI-Expanded)
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KARA İ., LİŞESİVDİN S. B., ACAR S., KASAP M.  
11. Yoğun Madde Fiziği Ankara Toplantısı, Ankara, Turkey, 03 December 2004, pp.67

## Academic and Administrative Experience

|             |   |  |
|-------------|---|--|
| 2023 - 2026 | <b>Head of Department</b>   | Gazi University, Fen Fakültesi, Fizik  |
| 2021 - 2023 | <b>Rectorate Commissioner</b>                                     | Gazi University, Fen Fakültesi, Fizik  |
| 2016 - 2018 | <b>Erasmus Program<br/>Institutional<br/>Coordinator</b>          | Gazi University, Fen Fakültesi, Fizik Bölümü   |
| 2011 - 2014 | <b>Uygulama ve Araştırma<br/>Merkezi Yönetim Kurulu<br/>Üyesi</b> | Gazi University, Araştırma ve Uygulama Merkezleri, Fotonik Uygulama ve Araştırma Merkezi |

## Courses

Introduction to Nanotechnology, Undergraduate, 2022 - 2023, 2021 - 2022, 2020 - 2021  
 Research Project I, Undergraduate, 2022 - 2023, 2021 - 2022, 2018 - 2019, 2014 - 2015, 2013 - 2014, 2012 - 2013, 2011 - 2012, 2009 - 2010  
 Micro and Nanofabrication Methods , Doctorate, 2021 - 2022, 2020 - 2021  
 Physics of Low-dimensional Semiconductors, Doctorate, 2021 - 2022, 2020 - 2021  
 Physics I, Undergraduate, 2020 - 2021  
 Physics II, Undergraduate, 2019 - 2020, 2018 - 2019, 2017 - 2018  
 Micro and Nanofabrication Methods, Doctorate, 2019 - 2020, 2018 - 2019, 2017 - 2018, 2016 - 2017, 2015 - 2016, 2014

- 2015, 2013 - 2014, 2012 - 2013

Research Project II, Undergraduate, 2018 - 2019, 2014 - 2015, 2011 - 2012, 2009 - 2010

Physics of Low-dimensional Semiconductors, Doctorate, 2017 - 2018, 2016 - 2017, 2013 - 2014

Physics I, Undergraduate, 2018 - 2019

Introduction to Nanotechnology, Undergraduate, 2018 - 2019, 2017 - 2018, 2016 - 2017, 2015 - 2016, 2014 - 2015

Physics II, Undergraduate, 2016 - 2017, 2015 - 2016, 2014 - 2015, 2013 - 2014, 2011 - 2012

Physics I, Undergraduate, 2014 - 2015, 2011 - 2012

Physics I, Undergraduate, 2013 - 2014, 2012 - 2013, 2011 - 2012

Maddenin Özellikleri, Undergraduate, 2012 - 2013

Fizik, Undergraduate, 2012 - 2013

Physics Laboratory (Mechanics), Undergraduate, 2011 - 2012, 2009 - 2010

Physics I, Undergraduate, 2011 - 2012, 2009 - 2010

Basic Computer Usage and Fortran Language, Undergraduate, 2011 - 2012

Physics II, Undergraduate, 2009 - 2010

Physics II, Undergraduate, 2009 - 2010

## Advising Theses

LİŞESİVDİN S. B., Investigation Of Structural And Optical Properties Of Zno And Mgzno Crystals Grown By Uscvd, Doctorate, P.NARİN(Student), 2021

LİŞESİVDİN S. B., RF magnetron sputter sistemi ile pasif devre elemanı rezistör üretimi ve karakterizasyonu, Postgraduate, K.BERK(Student), 2019

LİŞESİVDİN S. B., GaN tabanlı alan etkili transistörlerde SiC arka-yüzey geçiş deliği aşındırma uygulaması, Postgraduate, M.TAHA(Student), 2019

LİŞESİVDİN S. B., Back Side Via Hole Etching Application Of Sic For Gan Based Field Effect Transistors, Postgraduate, M.Taha(Student), 2019

LİŞESİVDİN S. B., Electrical Characteristics And Scattering Analysis Of Ultrathin Barrier Gan-Based High Electron Mobility Transistors, Postgraduate, M.ÖZTÜRK(Student), 2018

LİŞESİVDİN S. B., Investigations Of Low-Field Transport And Hot-Electron Transport In Passivated Algan/Gan Hemts With Si<sub>3</sub>n<sub>4</sub>, Doctorate, G.ATMACA(Student), 2018

LİŞESİVDİN S. B., Investigation Of The Electronic Properties Of Zn, Cd And Hg Doped Graphene Sheets With Ab-Initio Methods, Postgraduate, Ö.ÖMEROĞLU(Student), 2018

LİŞESİVDİN S. B., Investigation of electronic and optical properties of wurtzite MgZnO with first principles calculations, Postgraduate, R.IBRAHEM(Student), 2018

LİŞESİVDİN S. B., Investigation Of Electronic And Optical Properties Of Wurtzite Mgzno With First Principles Calculations, Postgraduate, R.Ibrahim(Student), 2018

LİŞESİVDİN S. B., The Investigation Of The Effect Of Al, Ga, In And As Impurities On Electronic And Optical Properties Of Beta-Si<sub>3</sub>n<sub>4</sub> Compound With Density Functional Theory, Postgraduate, E.KUTLU(Student), 2016

LİŞESİVDİN S. B., GaN-temelli ultraince bariyerli yüksek elektron devingenlikli transistörlerinin benzetimi ve optimizasyonu, Postgraduate, J.MOSTAFA(Student), 2016

LİŞESİVDİN S. B., Electron And Magnetotransport Investigation Of 2- Dimensional Electron Gas In Ultrathin Barrier Gan-Based Heterostructures, Postgraduate, C.GÜNEŞ(Student), 2013

LİŞESİVDİN S. B., Numerical investigation of the 2-dimensional carriers in ALQN/ALN/GAN-BASED (Q=GA, İN) transistors with multi-quantum well back-barriers, Postgraduate, G.ATMACA(Student), 2012

LİŞESİVDİN S. B., Investigation of electron transport properties AllnN/AlN/(InGaN)/GaN in multi-structures with InGaN quantum well, Postgraduate, G.KARAKOÇ(Student), 2012

LİŞESİVDİN S. B., Investigation of electronic properties of pd-terminated graphene nanoribbons, Postgraduate, A.FATİH(Student), 2012

LİŞESİVDİN S. B., Investigation of magnetoconductivity and surface properties of exfoliated and epitaxially grown graphene samples, Postgraduate, K.ELİBOL(Student), 2012

## Activities in Scientific Journals

Advances in Condensed Matter Physics, Committee Member, 2019 - Continues

Plos One, Committee Member, 2019 - Continues

Advances in OptoElectronics, Committee Member, 2019 - 2019

Plos One, Committee Member, 2013 - 2017

## Memberships / Tasks in Scientific Organizations

IEEE Quantum Community, Principal Member, 2023 - Continues, United States Of America

IEEE Young Professionals, Principal Member, 2014 - Continues, United States Of America

Institute of Electrical and Electronics Engineers (IEEE), Principal Member, 2005 - Continues, United States Of America

IEEE Electron Devices Society, Member, 2005 - 2022, United States Of America

Society of Photographic Instrumentation Engineers (SPIE), Member, 2006 - 2006, United States Of America

IEEE Communications Society, Member, 2006 - 2006, United States Of America

## Scientific Refereeing

CHEMICAL PHYSICS, SCI Journal, October 2021

PHYSICA E: LOW-DIMENSIONAL SYSTEMS AND NANOSTRUCTURES, SCI Journal, September 2021

PHYSICA E-LOW-DIMENSIONAL SYSTEMS & NANOSTRUCTURES, SCI Journal, December 2020

PHYSICA E-LOW-DIMENSIONAL SYSTEMS & NANOSTRUCTURES, SCI Journal, November 2020

PHYSICA E-LOW-DIMENSIONAL SYSTEMS & NANOSTRUCTURES, SCI Journal, October 2020

JOURNAL OF PHYSICS AND CHEMISTRY OF SOLIDS, SCI Journal, October 2020

DIAMOND AND RELATED MATERIALS, SCI Journal, October 2020

PHILOSOPHICAL MAGAZINE LETTERS, SCI Journal, July 2020

PHYSICA E-LOW-DIMENSIONAL SYSTEMS & NANOSTRUCTURES, SCI Journal, July 2020

PHYSICA E-LOW-DIMENSIONAL SYSTEMS & NANOSTRUCTURES, SCI Journal, July 2020

DIAMOND AND RELATED MATERIALS, SCI Journal, May 2020

PHYSICA E-LOW-DIMENSIONAL SYSTEMS & NANOSTRUCTURES, SCI Journal, May 2020

SYNTHETIC METALS, SCI Journal, March 2020

PHYSICA E-LOW-DIMENSIONAL SYSTEMS & NANOSTRUCTURES, SCI Journal, February 2020

SUPERLATTICES AND MICROSTRUCTURES, SCI Journal, March 2018

SUPERLATTICES AND MICROSTRUCTURES, SCI Journal, May 2017

SUPERLATTICES AND MICROSTRUCTURES, SCI Journal, May 2017

JOURNAL OF MATERIALS SCIENCE-MATERIALS IN ELECTRONICS, SCI Journal, July 2015

JOURNAL OF MATERIALS SCIENCE-MATERIALS IN ELECTRONICS, SCI Journal, June 2015

SEMICONDUCTOR SCIENCE AND TECHNOLOGY, SCI Journal, April 2014

NANOTECHNOLOGY, SCI Journal, September 2013

## Tasks In Event Organizations

Lişesivdin S. B., 2nd International Summit on Graphene & 2D Materials (ISG2DM2024), Scientific Congress, Munich, Germany, Nisan 2024

Lişesivdin S. B., 4. Uluslararası Türk Dünyası Mühendislik ve Fen Bilimleri Kongresi, Scientific Congress, Antalya, Turkey, Aralık 2023

Lişesivdin S. B., VIII. ADIM Physics, Scientific Congress, Bilecik, Turkey, Eylül 2019

Lişesivdin S. B., VII. ADIM Physics, Scientific Congress, Aydın, Turkey, Mayıs 2018

Lişesivdin S. B., VI. ADIM Physics, Scientific Congress, Balıkesir, Turkey, Temmuz 2017

Lişesivdin S. B., 2nd International Nanoscience and Nanotechnology for Next Generation (NaNONG), Scientific Congress, Antalya, Turkey, Ekim 2015

Lişesivdin S. B., 1st International Conference on Organic Electronic Material Technologies (OEMT-2015) , Scientific Congress, Elazığ, Turkey, Mart 2015

## Scientific Research / Working Group Memberships

Low-Dimensional Materials And Systems, Gazi University, Turkey, <https://www.lrgresearch.org/>, 2010 - Continues

## Metrics

Publication: 201

Citation (WoS): 1149

Citation (Scopus): 1161

H-Index (WoS): 19

H-Index (Scopus): 19

## Research Areas

Surfaces, Interfaces, Thin Films and Nanosystems, Electronic structure of bulk material, Electronic structure of bulk material, Electrical properties of electronic structures, interfaces, thin films and low-dimensional structures, Magnetic Properties and Materials, Optical Properties, Spectroscopy of Matter, Electronic transport in condensed matter

## Entrepreneurship Activities

Limited, Biarsis Ar-Ge Elektr. San. ve Tic. Ltd. Şti., 29 August 2018, Founder Owner

## Non Academic Experience

University of Ulm

University of Essex

Bilkent Üniversitesi Nanoteknoloji Araştırma Merkezi

University of Essex