

Detailed Curriculum Vitae

Prof. Dr. Sefer Bora Lisesivdin,
BSc (Engineering), MSc, PhD, SMIEEE



 <https://orcid.org/0000-0001-9635-6770>

CONTACT INFORMATION

(1) Department of Physics
Gazi University, Ankara, Turkey 06500
Phone: +90 312 202 1391
Email: bora@gazi.edu.tr, sblisesivdin@gmail.com
Personal web: <http://sblisesivdin.github.io>
Group web: <http://www.lrgresearch.org>

EDUCATION

2008	Ph.D. Physics, Gazi University, Ankara, Turkey Dissertation: Electron and Magneto Transport Properties of AlGa _N /Ga _N Based High Electron Mobility Transistors (HEMTs) Advisor: Prof. Dr. Mehmet Kasap
2005	M.Sc. Advanced Technologies, Gazi University, Ankara, Turkey Thesis: Transport Properties of InGaAs/GaAs and AlGaAs/GaAs Semiconductors Grown by MBE Advisor: Assoc. Prof. Dr. Mehmet Kasap
2002	B.Sc (Eng). Physics Engineering, Hacettepe University, Ankara Turkey Senior Project: Development of X-Ray Data Analysis Software for Windows Systems

RESEARCH INTERESTS

Experimental and numerical (with calculating self-consistent solutions of Schroedinger-Poisson equations) investigation of electron and magnetotransport properties, strain, persistent photoconductivity, hot-electron transport properties, Shubnikov de Hass parameters and quantum parameters of 2 dimensional gas (2DEG) of III-V group semiconductor materials including, GaAs, GaN, InGa_N, TiO₂ bulks and AlGa_N/Ga_N, AlGa_N/(Al_N)/Ga_N, AlGa_N/(Al_N)/Ga_N/Al_N, AlIn_N/Al_N/Ga_N/Al_N and AlIn_N/Al_N/InGa_N/Al_N heterostructures, MgZnO/ZnO, BeZnO/ZnO heterostructures.

Ab initio calculations of wide band gap semiconductors MgO, GaN, MgZnO, diamond and low dimensional structures like graphene, graphene nanoribbons, black phosphorus, 2D structures with kagome lattice structure.

Optical properties and ODMR measurements of NV- centers in Diamond.

SCHOLARSHIPS / FELLOWSHIPS / AWARDS

2019	Leaders in Innovation Fellowship, Royal Academy of Engineering, United Kingdom,
2017	Duty Award, Gazi University Faculty of Science, Ankara, Turkey.
2016	Turkish Academy of Sciences, Distinguished Young Scientist Award
2015	IEEE Senior Membership
2015	SCI-indexed Publication Award, Gazi University, Ankara, Turkey.
2015	Duty Award, Gazi University Faculty of Science, Ankara, Turkey.
2014	Turkish Physical Union Prof. Dr. Sevket Erk Outstanding Young Scientist Award.
2014	SCI-indexed Publication Award, Gazi University, Ankara, Turkey.
2014	SCI-indexed Citation Award, Gazi University, Ankara, Turkey.
2013	TUBITAK 2219 scholarship for postdoc research (6 months).
2007-present	20 publications are promoted through TUBITAK Incentive Program for International Scientific Publications.
2010, 2012	SCI-indexed Publication Award, Gazi University, Ankara, Turkey.
2008-2009	Postdoc fellowship for postdoc studies.
2007-2008	TUBITAK 2214 scholarship for PhD research (6 months).
2007	Progetto Lagrange PhD Scholarship, Politecnico di Torino, Italy (not used due to family issues).
2005-2008	Several project scholarship for M.Sc. and Ph.D. studies.

GRANTS & PROJECT MEMBERSHIPS

Earned grants as a project investigator (PI) or project co-investigator (co-PI)

2018-2019	TUBITAK 1512, 2180227, Production of Compact USB Fiber-coupled UV-VIS-NIR Optical Spectrometer for Industrial and Scientific Purposes, CEO and PI, Budget, 149 846 TL no-return grant (approximately 24 500 Euros)
2017-2020	TUBITAK 1001,116F197, Investigation of Growth Behaviors and 2DEG Properties of of MgZnO/ZnO Heterostructures grown by USPECVD Method, PI, Budget, 359 810 TL (approximately 88 600 Euros)
2014-2016	Joint grant of Scientific and Technological Research Council of Turkey and RFBR of Russia, 113F364, Modification of properties of two-dimensional electronic gas using insitu surface passivation of AlGaIn/GaN heterostructures by molecular beam epitaxy, PI, Budget: 282 910 TL (approximately 97 500 Euros)
2012-2013	University Research Grant, 05-2012/13, Numerical optimization of Mg _x Zn _{1-x} O/ZnO and Be _x Zn _{1-x} O/ZnO based heterostructure transistors, PI, Budget: 14 889 TL (approximately 6 500 Euros)
2012-2013	University Research Grant, 05-2012/14, Investigation of the effects of transition metal palladium on electronical, structural and optical properties of graphene nanoribbons, PI, Budget: 14 955 TL (approximately 6 500 Euros)

Project memberships

2010-2012	TUBITAK 1002 Support Project, 209T051, MOVPE growth and characterization of epitaxial germanium for infrared photovoltaic and sensor applications, Researcher, Budget: 25k TL (approximately 11k Euros)
-----------	---

2009-2012	TUBITAK 1007 Research Project, 107A012, Researcher, Budget: 4.7 M TL (approximately 2M Euros)
2008-2012	Military Related Research Project, SAVS020, Scholar, Budget: 5.8M TL (approximately 2 5M Euros)
2008-2010	TUBITAK 1001 Research Project, 108T018, Epitaxial growth and characterization of infrared AlGaAs laser diode materials, Scholar, Budget: 358 400 TL (approximately 156k Euros)
2008-2010	TUBITAK (Turkey) – ANCS (Romania) Joint Research Project, TBAG-U/220 (107A584), Studies on synthesis and characterization of TiO ₂ thinfilm nanostructures which have applications in ecological physics, Scholar, Budget: 58k TL (approximately 25k Euros)
2006-2009	Military Related Research Project, SAVM005, Researcher, Budget: 4.7 M TL (approximately 2M Euros)
2006-2007	TUBITAK 1007 Research Project, 105A005, Scholar, Budget: 5.5M TL (approximately 2 4M Euros)

PROFESSIONAL APPOINTMENTS

2019-2020	Visiting Researcher, Institute for Quantum Optics, University of Ulm, Ulm, Germany (3 months)
2018-cont.	Full Professor, Department of Physics, Faculty of Science, Gazi University, Ankara Turkey
2013	Visiting Researcher, School of Computer Science and Electronics Engineering, University of Essex, Colchester, UK.
2011-2018	Associate Professor, Department of Physics, Faculty of Science, Gazi University, Ankara Turkey
2009-2011	Assistant Professor, Department of Physics, Faculty of Science and Arts, Gazi University, Ankara Turkey
2008-2009	Post-doctoral Researcher, Nanotechnology Research Center, Bilkent University, Ankara, Turkey http://www.nanotam.bilkent.edu.tr

RESEARCH EXPERIENCE

2019-2020	Visiting Researcher, Institute for Quantum Optics, University of Ulm, Ulm, Germany (3 months)
2013	Visiting Researcher, Department of Computing and Electronic Systems University of Essex, Colchester, UK (6 months)
2008-2009	Post-doctoral Researcher, Nanotechnology Research Center, Bilkent University, Ankara, Turkey http://www.nanotam.bilkent.edu.tr
2007-2008	Research Student, Department of Computing and Electronic Systems University of Essex, Colchester, UK (6 months)

TEACHING EXPERIENCE

These courses correspond to a number of more than 2300 students as of this CV's writing time.

Institute of Science, Gazi University, Ankara, Turkey

2020/1	Instructor, Fiz 5026 Physics of Low-dimensional Semiconductors
2020/1	Instructor, Fiz 5024 Micro and Nanofabrication Methods
2019/2	Instructor, Fiz 522 Micro and Nanofabrication Methods
2018/2	Instructor, Fiz 522 Micro and Nanofabrication Methods
2018/1	Instructor, Fiz 522 Micro and Nanofabrication Methods
2017/2	Instructor, Fiz 524 Physics of Low-dimensional Semiconductors
2017/1	Instructor, Fiz 524 Physics of Low-dimensional Semiconductors
2017/1	Instructor, Fiz 522 Micro and Nanofabrication Methods
2016/2	Instructor, Fiz 524 Physics of Low-dimensional Semiconductors
2016/2	Instructor, Fiz 522 Micro and Nanofabrication Methods
2016/1	Instructor, Fiz 522 Micro and Nanofabrication Methods
2015/2	Instructor, Fiz 522 Micro and Nanofabrication Methods
2015/1	Instructor, Fiz 522 Micro and Nanofabrication Methods
2014/2	Instructor, Fiz 522 Micro and Nanofabrication Methods
2014/1	Instructor, Fiz 522 Micro and Nanofabrication Methods
2013/2	Instructor, Fiz 522 Micro and Nanofabrication Methods
2013/2	Instructor, Fiz 524 Physics of Low-dimensional Semiconductors
2013/1	Instructor, Fiz 522 Micro and Nanofabrication Methods
2013/1	Instructor, Fiz 524 Physics of Low-dimensional Semiconductors
2012/1	Instructor, Fiz 522 Micro and Nanofabrication Methods

Faculty of Science, Gazi University, Ankara, Turkey

2020/1	Instructor, Fiz 1123 Introduction to Nanotechnology
2018/1	Instructor, Fiz 123 Introduction to Nanotechnology
2017/1	Instructor, Fiz 123 Introduction to Nanotechnology
2016/1	Instructor, Fiz 123 Introduction to Nanotechnology
2015/1	Instructor, Fiz 123 Introduction to Nanotechnology
2014/2	Advisor, Fiz 414 Research Project
2014/1	Advisor, Fiz 413 Research Project
2014/1	Instructor, Fiz 123 Introduction to Nanotechnology
2013/1	Advisor, Fiz 413 Research Project
2012/1	Advisor, Fiz 413 Research Project (2 students)
2011/2	Instructor, Enf 102 Basic Computer Usage and Fortran Language (2 groups)
2011/2	Advisor, Fiz 414 Research Project

Faculty of Science and Arts, Gazi University, Ankara, Turkey

2018/2	Advisor, Fiz 414 Research Project
2018/1	Advisor, Fiz 413 Research Project
2011/1	Advisor, Fiz 413 Research Project
2009/2	Advisor, Fiz 414 Research Project (2 students)
2009/1	Advisor, Fiz 413 Research Project (2 students)

Faculty of Engineering, Gazi University, Ankara, Turkey

2016/2	Instructor, Fiz 104, Physics II (2 groups)
2015/2	Instructor, Fiz 104, Physics II (2 groups)

2014/2	Instructor, Fiz 104, Physics II (2 groups)
2013/2	Instructor, Fiz 104, Physics II (4 groups)
2013/1	Instructor, Fiz 103 Physics I (3 groups)
2012/1	Instructor, Fiz 103 Physics I (2 groups)
2011/2	Instructor, Fiz 156 Physics Lab. (Mechanics)
2011/2	Instructor, Fiz 104, Physics II (3 groups)
2011/1	Instructor, Fiz 103 Physics I (3 groups)
2009/2	Instructor, Fiz 156 Physics Lab. (Mechanics)
2009/2	Instructor, Fiz 104, Physics II (2 groups)

Faculty of Dentistry, Gazi University, Ankara, Turkey

2012/1	Instructor, Fzk 111 Physics.
--------	------------------------------

Faculty of Science at Polatlı, Gazi University, Polatlı, Ankara, Turkey

2012/1	Instructor, Fiz 315 Properties of Matter.
--------	---

Faculty of Technology, Gazi University, Ankara, Turkey

2020/1	Instructor, Fiz 103, Physics II (2 groups)
2019/2	Instructor, Fiz 104, Physics II (2 groups)
2018/2	Instructor, Fiz 104, Physics II
2017/2	Instructor, Fiz 104, Physics II
2014/1	Instructor, Fiz 101 Physics I (2 groups).
2011/1	Instructor, Fiz 101 Physics I.

Faculty of Technical Education, Gazi University, Ankara, Turkey

2011/1	Instructor, Fiz 101 Physics I.
2009/2	Instructor, Fiz 102 Physics II.
2009/1	Instructor, Fiz 101 Physics I (4 groups).

Turkish Military Academy, National Defense University, Ankara, Turkey

2018-2019	Instructor, Physics.
-----------	----------------------

PROFESSIONAL ACTIVITIES

2019	Scientific Committee Member, VIII. ADIM Physics Days, 12-15 September, Bilecik, Turkey.
2018	Scientific Committee Member, VII. ADIM Physics Days, 23-25 May, Aydin, Turkey.
2017	Scientific Committee Member, VI. ADIM Physics Days, 19-21 July, Balıkesir, Turkey.
2015	Scientific Committee Member, 1st International Conference on Organic Electronic Material Technologies (OEMT-2015) 25-28 March Elazig, Turkey.
2015	Scientific Committee Member, 2nd International Nanoscience and Nanotechnology for Next Generation (NaNoNG) 29-31 October Antalya, Turkey.
2011-2014	Member of board of management of the Photonics Research Center at Gazi University, Ankara, Turkey. http://fotonik.gazi.edu.tr
2004	Member of organizing group of 11 th Condensed Matter Ankara Meeting at Gazi University, Ankara, Turkey.

PROFESSIONAL SERVICES

Editorial Board Member

- PLOS ONE (*SCI-indexed*) (2013-2016, 2019-continue)
- Advances in Condensed Matter Physics (*SCI-indexed*) (2019-continue)
- Advances in OptoElectronics (*ESCI-indexed*) (2019)

Issue Editor (SCI-indexed) (2016)

- Advances in Materials Science and Technology “Recent Progress in Group III-Nitride Electronic and Optoelectronic Devices”

Reviewer (SCI-indexed) (PUBLONS: <https://publons.com/researcher/2891039/sefer-bora-lisesivdin/>)

- Journal of Physics and Chemistry of Solids
- Journal of Physics D – Applied Physics,
- Semiconductor Science and Technology,
- Superlattices and Microstructures,
- Journal of Materials Science: Materials in Electronics
- Journal of Materials Science: Materials in Electronics
- Nanotechnology,
- Diamond and Related Materials,
- Applied Physics Letters,
- Physica E : Low-dimensional Systems and Nanostructures,
- Physica B : Condensed Matter,
- AIP Advances,
- Computational Materials Science,
- Synthetic Metals,

PROFESSIONAL AFFILIATIONS

- | | |
|--------------|---|
| 2005-present | Senior Member , IEEE (Institute of Electrical and Electronics Engineers) |
| 2005-present | Senior Member , IEEE Electron Devices Society |
| 2006 | Member, IEEE Communications Society |
| 2006 | Member, SPIE (Society of Photographic Instrumentation Engineers) |
| | Member, Hacettepe University Alumni |

SEMINARS

- | | |
|---------|--|
| 12/2014 | “Elektriksel Olarak Pompalanan Seyreltik Azotlu Dikey Kaviteli Yarıiletken Optik Yükselteç” Physics Department, Istanbul University, Istanbul, Turkey. |
| 05/2008 | “AlGaIn/GaN-temelli Yüksek Elektron Hareketliliğine Sahip Transistörlerin (HEMTs) Elektron ve Manyeto-iletim Özelliklerinin İncelenmesi (in Turkish)”, Department of Physics, Akdeniz University, Antalya, Turkey. |
| 02/2008 | “Investigation of 2DEG parameters in AlGaIn/GaN based heterostructures using QMSA technique” Department of Computing and Electronic Systems, University of Essex, Colchester, UK. |

ATTENDED COURSES AND WORKSHOPS

- | | |
|---------|--|
| 01/2006 | I. Adaligeli, “Solid State Educational Workshop 2006.1 : The Theory of Spin Transport (1 Week)” Feza Gürsey Institute, Istanbul, Turkey. |
|---------|--|

- 01/2006 J. Schliemann, “Solid State Educational Workshop 2006.1 : Rashba and Spin-Hall Effects in Quantum Dots (1 Week)” Feza Gürsey Institute, Istanbul, Turkey.
- 01/2006 E.V. Sukhorukov, “Solid State Educational Workshop 2006.1 : The Physics of Quantum Shot Noise (1 Week)” Feza Gürsey Institute, Istanbul, Turkey.
- 03-04/2005 R. Gerhardt, “Solid State Educational Workshop 2004.3-2: Magnetotransport in low-dimensional systems (3 Weeks)”, Bilkent University, Ankara, Turkey.

PUBLICATIONS

Cites and h-index

Index name	Total cite	h-index
<i>Web of Science</i>	778	15
<i>Google Scholar</i>	975	16

Books and Book Chapters

- 2 S. B. Lisesivdin, B. Sarikavak-Lisesivdin, E. Ozbay “Chapter 18: The Effects of the Interaction of Transition Metals on the Electronic Properties of the Graphene Nanosheets and Nanoribbons” Graphene Science Handbook Vol.3, CRC Press, Taylor&Francis, (2016).
- 1 E. L. Wolf, M. Medikonda, (Transl. eds: B. Sarikavak-Lisesivdin, S. B. Lisesivdin) “Nanoteknoloji Devrimini Anlamak” Nobel Press, (2014).

SCI-Articles

- 72 F. Sonmez, S. Ardali, G. Atmaca, S.B. Lisesivdin, T. Malin, V. Mansurov, K. Zhuravlev, E. Tiras “The effect of passivation layer, doping and spacer layer on electron-longitudinal optical phonon momentum relaxation time in $\text{Al}_{0.3}\text{Ga}_{0.7}\text{N}/\text{AlN}/\text{GaN}$ heterostructures” *Mater. Sci. Semicond. Process.* **122**, 105449 (2021).
- 71 H. Hebal, Z. Koziol, S.B. Lisesivdin, R. Steed “General-purpose open-source 1D self-consistent Schrödinger-Poisson Solver: Aestimo 1D” *Comput. Mater. Sci.* **186**, 110015 (2021).
- 70 B.Sarikavak-Lisesivdin, S.B.Lisesivdin, E.Ozbay, F.Jelezko “Structural parameters and electronic properties of 2D carbon allotrope: Graphene with a kagome lattice structure” *Chem. Phys. Lett.* **760**, 138006 (2020).
- 69 E. Kutlu, P. Narin, A. Yildiz, S. B. Lisesivdin “Effects of Annealing under Different Atmospheres on Structural and Optical Properties of USCVD grown ZnO Nanostructures” *Mater. Sci. Eng. B* **254**, 114506 (2020).
- 68 R. Ibrahim, P. Narin, S. B. Lisesivdin, E. Ozbay “Investigation of electronic and optical properties of wurtzite MgZnO using GGA + U formalism”, *Philos. Mag. Lett.* **99**, 424 (2019).

- 67 P. Narin, J. M. All Abbas, G. Atmaca, E. Kutlu, S. B. Lisesivdin, E. Ozbay "Ab initio study of electronic properties of armchair graphene nanoribbons passivated with heavy metal elements" *Solid State Commun.* **296**, 8 (2019).
- 66 P. Narin, E. Arslan, M. Ozturk, M. Ozturk, S. B. Lisesivdin, E. Ozbay "Scattering analysis of ultrathin barrier (< 7 nm) GaN-based heterostructures" *Appl. Phys. A: Mater. Sci. Process.* **125**, 278 (2019).
- 65 J. M. All Abbas, P. Narin, E. Kutlu, S. B. Lisesivdin, E. Ozbay "Electronic properties of Zigzag ZnO nanoribbons with Hydrogen and Magnesium passivations" *Physica B* **556**, (2019).
- 64 J.-H. Lee, J.-M. Ju, G. Atmaca, J.-G. Kim, S.-H. Kang, Y. S. Lee, S.-H. Lee, J.-W. Lim, H.-S. Kwon, S. B. Lisesivdin, J.-H. Lee "High Figure-of-Merit (V2BR/RON) AlGaIn/GaN Power HEMT With Periodically C-Doped GaN Buffer and AlGaIn Back Barrier" *IEEE J. Electron Dev. Soc.* **6**, 1179 (2018).
- 63 Ö. Ömeroğlu, E. Kutlu, P. Narin, S. B. Lisesivdin, E. Ozbay "Electronic Properties of Graphene Nanoribbons Doped with Zinc, Cadmium, Mercury Atoms" *Physica E* **104**, 124 (2018).
- 62 G. Atmaca, P. Narin, E. Kutlu, T. V. Malin, V. G. Mansurov, K. S. Zhuravlev, S. B. Lisesivdin, E. Ozbay, "Negative Differential Resistance Observation and a New Fitting Model for Electron Drift Velocity in GaN-Based Heterostructures" *IEEE Trans. Electron Dev.* **65**, 950 (2018).
- 61 P. Narin, E. Kutlu, G. Atmaca, A. Atilgan, A. Yildiz, S. B. Lisesivdin, "Structural and optical properties of hexagonal ZnO nanostructures grown by ultrasonic spray CVD" *Optik* **168**, 86 (2018).
- 60 E. Kutlu, P. Narin, S. B. Lisesivdin, E. Ozbay "Electronic and optical properties of black phosphorus doped with Au, Sn and I atoms" *Philos. Mag.* **98**, 155 (2018).
- 59 P. Narin, E. Kutlu, G. Atmaca, S. B. Lisesivdin, E. Ozbay "A first principles investigation of the effect of aluminum, gallium and indium impurities on optical properties of β -Si₃N₄ structure" *Optik* **147**, 115 (2017).
- 58 J. M. Al Abbas, P. Narin, G. Atmaca, E. Kutlu, B. Sarikavak-Lisesivdin, S. B. Lisesivdin "The effect of doping in different layers on 2DEG for ultrathin-barrier AlN/GaN heterostructures" *Optoelectron. Adv. Mater.-Rapid Comm.* **11**, 328 (2017).
- 57 J. M. All Abbas, G. Atmaca, P. Narin, E. Kutlu, B. Sarikavak-Lisesivdin, S. B. Lisesivdin "A Comparative Study of AlGaIn and InGaIn Back-Barriers in Ultrathin-Barrier AlN/GaN Heterostructures" *J. Elec. Mater.* **46**, 5278 (2017).
- 56 E. Kutlu, P. Narin, G. Atmaca, B. Sarikavak-Lisesivdin, S. B. Lisesivdin, E. Ozbay "Electronic structure of β -Si₃N₄ crystals with substitutional icosagen group impurities" *J. Optoelectron. Adv. Mater.* **19**, 278 (2017).

- 55 P. Narin, E. Kutlu, B. Sarikavak-Lisesivdin, S. B. Lisesivdin, E. Özbay "Electronic properties of Li-doped zigzag graphene nanoribbons" *Physica E* **84**, 543 (2016).
- 54 E. Kutlu, P. Narin, G. Atmaca, B. Sarikavak-Lisesivdin, S. B. Lisesivdin, E. Özbay "Effect of substitutional As impurity on electrical and optical properties of β -Si₃N₄ Structure" *Mater. Res. Bull.* **83**, 128 (2016).
- 53 G. Atmaca, S. Ardali, E. Tiras, T. Malin, V. G. Mansurov, K. S. Zhuravlev, S. B. Lisesivdin "Scattering analysis of 2DEG mobility in undoped and doped AlGa_N/AlN/GaN heterostructures with an *in situ* Si₃N₄ passivation layer" *Solid-State Electron.* **118**, 12 (2016).
- 52 I. Kara, Y. Sarikavak, S. B. Lisesivdin, M. Kasap "Evaluation of Morphological and Chemical Differences of Gunshot Residues in Different Ammunitions Using SEM/EDS Technique" *Environ. Foren.* **17**, 68 (2016).
- 51 G. Atmaca, P. Narin, B. Sarikavak-Lisesivdin, S. B. Lisesivdin "Two Dimensional Electron Gas in a Hybrid GaN/InGa_N/ZnO Heterostructure with Ultrathin InGa_N Channel Layer" *Physica E* **79**, 67 (2016).
- 50 G. Atmaca, S. Ardali, P. Narin, E. Kutlu, S. B. Lisesivdin, T. Malin, V. Mansurov, K. Zhuravlev, E. Tiras "Energy relaxation of hot electrons by LO phonon emission in AlGa_N/AlN/GaN heterostructure with in situ Si₃N₄ passivation" *J. Alloys Compounds* **659**, 90 (2016).
- 49 S. Ardali, G. Atmaca, S. B. Lisesivdin, T. Malin, V. Mansurov, K. Zhuravlev, E. Tiras "The variation of temperature dependent carrier concentration and mobility in AlGa_N/AlN/GaN heterostructure with Si₃N₄ passivation" *Phys. Stat. Sol. B* **252**, 1960 (2015).
- 48 B. Sarikavak-Lisesivdin, S. B. Lisesivdin, N. Balkan, G. Atmaca, P. Narin, H. Cakmak, E. Ozbay "Energy relaxation of electrons in InGa_N quantum wells" *Metall. Mater. Trans. A* **46**, 1565 (2015).
- 47 G. Atmaca, P. Narin, B. Sarikavak-Lisesivdin, S. B. Lisesivdin, M. Kasap "Electron Transport Properties of Two Dimensional Electron Gas in Be_xZn_{1-x}O/ZnO Heterostructures" *Philos. Mag.* **95**, 79 (2015).
- 46 G. Atmaca, P. Tasli, G. Karakoc, E. Yazbahar and S. B. Lisesivdin "Numerical Investigation of the 2DEG Properties of AlGa_N/AlN/GaN HEMT Structures with InGa_N/Ga_N MQW Back-Barrier Structure" *Physica E* **65**, 110 (2015).
- 45 O. Donmez, F. Sarcan, S. B. Lisesivdin, M. P. Vaughan, A. Erol, M. Gunes, M. C. Arikan, J. Puustinen and M. Guina, "Analytic modeling of temperature dependence of 2D carrier mobility in as-grown and annealed GaInNAs/GaAs quantum well structures" *Semicond. Sci. Technol.* **29**, 125009 (2014).
- 44 S. B. Lisesivdin, G. Atmaca, E. Arslan, S. Cakmakyapan, O. Kazar, S. Butun, Jawad-ul-Hassan, E. Janzén and E. Ozbay "Extraction and scattering analyses of 2D and bulk carriers in epitaxial graphene-on-SiC structure" *Physica E* **63**, 87 (2014).

- 43 E. Arslan, S. Cakmakyapan, O. Kazar, S. Bütün, S. B. Lisesivdin, N. A. Cinel, G. Ertas, S. Ardali, E. Tiras, J. Ul-Hassan, E. Janzén and Ekmel Özbay “SiC substrate effects on electron transport in the epitaxial Graphene layer” *Electron. Mater. Lett.* **10**, 387 (2014).
- 42 S. B. Lisesivdin, N. A. Khan, S. Mazzucato, N. Balkan, M. J. Adams, V.-M. Korpijärvi, M. Guina, G. Mezosi and M. Sorel “Optical gain in 1.3 μm electrically-driven dilute nitride VCSOAs” *Nanoscale Res. Lett.* **9**, 22 (2014).
- 41 K. Elibol, G. Atmaca, P. Tasli, S. B. Lisesivdin “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” *Solid State Commun.* **162**, 8 (2013).
- 40 A. F. Kuloglu, B. Sarikavak-Lisesivdin, S. B. Lisesivdin, E. Ozbay “First-principles calculations of Pd-terminated symmetrical armchair graphene nanoribbons” *Comp. Mater. Sci.* **68**, 18 (2013).
- 39 B. Sarikavak-Lisesivdin, S. B. Lisesivdin, E. Ozbay “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 ($0.05 \leq x \leq 0.14$)” *Cur. Appl. Phys.* **13**, 224 (2013).
- 38 B. Sarikavak-Lisesivdin, S. B. Lisesivdin, E. Ozbay “Ab initio study of Ru-terminated and Ru-doped armchair graphene nanoribbons” *Mol. Phys.* **110**, 2295 (2012).
- 37 E. Tiras, O. Celik, S. Mutlu, S. Ardali, S. B. Lisesivdin, E. Ozbay “Temperature dependent energy relaxation time in $\text{AlGaN}/\text{AlN}/\text{GaN}$ heterostructures” *Superlat. Microstruct.* **51**, 733 (2012).
- 36 O. Celik, E. Tiras, S. Ardali, S. B. Lisesivdin, E. Ozbay “Determination of the LO phonon energy by using electronic and optical methods in AlGaN/GaN ” *Cent. Eur. J. Phys.* **10**, 485 (2012).
- 35 O. Kelekci, S. B. Lisesivdin, S. Ozcelik, E. Ozbay “Numerical optimization of In-mole fraction and layer thicknesses in $\text{Al}_x\text{Ga}_{1-x}\text{N}/\text{AlN}/\text{GaN}$ high electron mobility transistors with InGaN back barrier” *Physica B* **406**, 1513 (2011).
- 34 A. Yildiz, P. Tasli, B. Sarikavak, S. B. Lisesivdin, M. K. Ozturk, M. Kasap, S. Ozcelik, E. Ozbay “Grain boundary related electrical transport in Al-rich $\text{Al}_x\text{Ga}_{1-x}\text{N}$ layers grown by metal organic chemical vapor deposition” *Semiconductors+* **45**, 33 (2011).
- 33 H. Yu, S. B. Lisesivdin, B. Bolukbas, O. Kelekci, M. K. Ozturk, S. Ozcelik, D. Caliskan, M. Ozturk, H. Cakmak, P. Demirel ve E. Ozbay “Improvement of breakdown characteristics in $\text{AlGaN}/\text{GaN}/\text{Al}_x\text{Ga}_{1-x}\text{N}$ HEMT based on a grading $\text{Al}_x\text{Ga}_{1-x}\text{N}$ buffer layer” *Phys. Stat. Sol. a* **207**, 2593 (2010).
- 32 P. Tasli, B. Sarikavak, G. Atmaca, K. Elibol, A. F. Kuloglu ve S. B. Lisesivdin “Numerical Simulation of Novel Ultrathin Barrier $\text{n-GaN}/\text{InAlN}/\text{AlN}/\text{GaN}$ HEMT Structures: Effect of In Mole Fraction, Doping and Layer Thicknesses” *Physica B* **405**, 4020 (2010).

- 31 A. Bengi, S. B. Lisesivdin, M. Kasap, T. Mammadov, S. Ozcelik, E. Ozbay “Analysis of defect related optical transitions in AlGa_N/Ga_N heterostructures” *Mater. Sci. Semicond. Process.* **13**, 105 (2010).
- 30 S. B. Lisesivdin, A. Yildiz, N. Balkan, M. Kasap, S. Ozcelik, E. Ozbay “Scattering Analysis of Two-dimensional Electrons in AlGa_N/Ga_N with Bulk Related Parameters Extracted by Simple Parallel Conduction Extraction Method” *J. Appl. Phys.* **108**, 013712 (2010).
- 29 P. Tasli, A. Yildiz, M. Kasap, E. Ozbay, S. B. Lisesivdin ve S. Ozcelik “Contributions of the impurity band and electron–electron interactions to the magnetoconductance of AlGa_N” *Philos. Mag.* **90**, 3591 (2010).
- 28 S. B. Lisesivdin, P. Tasli, M. Kasap, M. Ozturk, E. Arslan, S. Ozcelik, ve E. Ozbay, “Double subband occupation of the two-dimensional electron gas in In_xAl_{1-x}N/AlN/GaN/AlN Heterostructures with Low Indium Barrier ($0.064 < x < 0.139$)” *Thin Solid Films* **518**, 5572 (2010).
- 27 A. Yildiz, S. B. Lisesivdin, M. Kasap, D. Mardare “The substrate temperature dependent electrical properties of titanium dioxide thin films” *J. Mater. Sci.: Mater. Electron.* **21**, 692 (2010).
- 26 S. Gokden, R. Tulek, A. Teke, J. H. Leach, Q. Fan, J. Xie, U. Ozgur, H. Morkoc, S. B. Lisesivdin, E. Ozbay “Mobility limiting scattering mechanisms in nitride-based two-dimensional heterostructures with InGa_N channel” *Semicond. Sci. Technol.* **25**, 045024 (2010).
- 25 A. Yildiz, S. B. Lisesivdin, P. Tasli, E. Ozbay, ve M. Kasap “Determination of the critical indium composition corresponding to the metal-insulating transition in In_xGa_{1-x}N ($0.06 < x < 0.135$) layers” *Curr. Appl. Phys.* **10**, 838 (2010).
- 24 A. Yildiz, S. B. Lisesivdin, M. Kasap, S. Ozcelik, E. Ozbay ve N. Balkan “Investigation of low temperature electrical conduction mechanisms in highly resistive Ga_N bulk layers extracted with SPCEM” *Appl. Phys. A* **98**, 557 (2010).
- 23 P. Tasli, S. B. Lisesivdin, A. Yildiz, M. Kasap, E. Arslan, E. Özbay, ve S. Özcelik “Well parameters of the two-dimensional electron gas in Al_{0.88}In_{0.12}N/AlN/GaN/AlN heterostructures grown by MOCVD” *Cryst. Res. Tech.* **45**, 133 (2010).
- 22 S. B. Lisesivdin, E. Ozbay “Effect of various pseudomorphic AlN layer insertions on the electron densities of two-dimensional electron gas in lattice-matched In_{0.18}Al_{0.82}N/GaN based heterostructures” *Optoelectron. Adv. Mater.: Rapid. Comm.* **3**, 904 (2009).
- 21 A. Yildiz, S. B. Lisesivdin, H. Altuntas, M. Kasap ve S. Ozcelik “Electrical conduction properties of Si δ -doped GaAs grown by MBE” *Physica B* **404**, 4202 (2009).
- 20 G. Atmaca, K. Elibol, S. B. Lisesivdin, M. Kasap, E. Ozbay “Numerical optimization of Al-mole fractions and layer thicknesses in normally-on AlGa_N-Ga_N double-channel high electron mobility transistors (DCHEMTs)” *J. Optoelectron. Adv. Mater.* **11**, 578 (2009).

- 19 A. Teke, S. Gökden, R. Tülek, J. H. Leach, Q. Fan, J. Xie, Ü. Özgür, H. Morkoç, S. B. Lisesivdin, E. Özbay, “The effect of AlN interlayer thicknesses on scattering processes in lattice-matched AlInN/GaN two-dimensional electron gas heterostructures “ *New J. Phys.* **11**, 063031 (2009).
- 18 S. B. Lisesivdin, N. Balkan, O. Makarovsky, A. Patanè, A. Yildiz, M. D. Caliskan, M. Kasap, S. Ozcelik, E. Ozbay “Large Zero-Field Spin Splitting in AlGaN/AlN/GaN/AlN Heterostructures” *J. Appl. Phys.* **105**, 093701 (2009).
- 17 S. B. Lisesivdin, H. Altuntas, A. Yildiz, M. Kasap, E. Ozbay, S. Ozcelik, “DX-center Energy Calculation with Quantitative Mobility Spectrum Analysis in n-AlGaAs/GaAs Structures with Low Al Content” *Superlatt. Microstruct.* **45**, 604 (2009).
- 16 A. Yildiz, S. B. Lisesivdin, M. Kasap, D. Mardare “Non-adiabatic Small Polaron Hopping Conduction in Nb-doped TiO₂ thin films” *Physica B* **404**, 1423 (2009).
- 15 Y. Sun, N. Balkan, M. Aslan, S. B. Lisesivdin, H. Carrere, M. C. Arikan, X. Marie “Electronic transport in n- and p-type modulation doped Ga_xIn_{1-x}N_yAs_{1-y}/GaAs Quantum Wells” *J. Phys.: Condens. Matt.* **21**, 174210 (2009) Invited Article.
- 14 S. B. Lisesivdin, N. Balkan, E. Ozbay “A Simple Parallel Conduction Extraction Method (SPCEM) for MODFETs and Undoped GaN-based HEMTs” *Microelectron. J.* **40**, 413 (2009).
- 13 A. Yildiz, S. B. Lisesivdin, M. Kasap, M. Bosi “Anomalous temperature dependence of the electrical resistivity in In_{0.17}Ga_{0.83}N” *Solid State Commun.* **149**, 337 (2009).
- 12 A. Yildiz, S. B. Lisesivdin, M. Kasap, D. Mardare “Electrical Properties of TiO₂ Thin Films” *J. Non-Crys. Solids* **354**, 4944 (2008).
- 11 S. B. Lisesivdin, S. Demirezen, M. D. Caliskan, A. Yildiz, M. Kasap, S. Ozcelik ve E. Ozbay “Growth parameters investigation of Al_{0.25}Ga_{0.75}N/GaN/AlN heterostructures with Hall Effect Measurements” *Semicond. Sci. Technol.* **23**, 095008 (2008).
- 10 E. Arslan, S. Butun, S. B. Lisesivdin, M. Kasap, S. Ozcelik, ve E. Ozbay “The persistent photoconductivity effect in AlGaIn/GaN heterostructures grown on sapphire and SiC substrates” *J. Appl. Phys.* **103**, 103701 (2008).
- 9 S. Acar, S. B. Lisesivdin, M. Kasap, S. Ozcelik ve E. Ozbay “Determination of two-dimensional electron and hole gas carriers in AlGaIn/GaN/AlN heterostructures grown by Metal Organic Chemical Vapor Deposition” *Thin Solid Films* **516**, 2041 (2008).
- 8 A. Yildiz, F. Dagdelen, S. Acar, S. B. Lisesivdin, M. Kasap, Y. Aydogdu ve M. Bosi “Stokes shift and bandgap bowing in In_xGa_{1-x}N (0.060 ≤ x ≤ 0.105) grown by MOVPE” *Acta Physica Pol. (a)* **113**, 731 (2008).
- 7 S. B. Lisesivdin, E. Arslan, M. Kasap, S. Ozcelik ve E. Ozbay, “Self-consistent scattering analysis of Al_{0.2}Ga_{0.8}N/AlN/GaN/AlN heterostructures grown on 6H-SiC substrates using photo-Hall effect measurements” *J. Phys.: Condens. Matt.* **20**, 045208 (2008).

- 6 S. B. Lisesivdin, A. Yildiz ve M. Kasap, "Optimization of alloy composition, interlayer and barrier thicknesses in $\text{Al}_x\text{Ga}_{1-x}\text{N}/(\text{AlN})/\text{GaN}$ high electron mobility transistors" *Opt. Adv. Mater.-Rapid Comm.* **1** (9), 467 (2007).
- 5 A. Yildiz, S. B. Lisesivdin, M. Kasap, D. Mardare "High temperature variable-range hopping conductivity in undoped TiO_2 thin film" *Opt. Adv. Mater.-Rapid Comm.* **1** (10), 531 (2007).
- 4 A. Yildiz, S. B. Lisesivdin, S. Acar, M. Kasap ve M. Bosi, "Electron transport in Ga-rich $\text{In}_x\text{Ga}_{1-x}\text{N}$ alloys" *Chin. Phys. Lett.* **24**, 2930 (2007).
- 3 S. B. Lisesivdin, A. Yildiz, S. Acar, M. Kasap, S. Ozcelik ve E. Ozbay "The Effect of Strain Relaxation on Electron Transport in Undoped $\text{Al}_{0.25}\text{Ga}_{0.75}\text{N}/\text{GaN}$ HEMT Structures" *Physica B* **399** (2), 132 (2007).
- 2 S. B. Lisesivdin, A. Yildiz, S. Acar, M. Kasap, S. Ozcelik ve E. Ozbay "Electronic Transport Characterization of AlGaN/GaN HEMT Structures grown by MOCVD" *Appl. Phys. Lett.* **91**, 102113 (2007). Selected for *Virtual Journal of Nanoscale Science & Technology* **16** 12 (2007).
- 1 S. B. Lisesivdin, S. Acar, M. Kasap, S. Ozcelik, S. Gokden ve E. Ozbay "Scattering Analysis of Extracted 2D carrier in AlGaN/GaN HEMT Structures" *Semicond. Sci. Technol.* **22**, 543 (2007).

SCI Technical Notes

- 1 I. Kara, S. B. Lisesivdin, M. Kasap, E. Er, U. Uzek "The Relationship between the Surface Morphology and Chemical Composition of Gunshot Residue Particles" *J. Foren. Sci.* **60**, 1030 (2015).

Non-SCI Articles

- 1 O. Celik, E. Tiras, S. Ardali, S. B. Lisesivdin, E. Ozbay "Determination of the in-plane effective mass and quantum lifetime of 2D electrons in AlGaN/GaN based HEMTs" *Phys. Stat. Sol. (c)* **8**, 1625 (2011).

Proceedings

- 90 S. B. Lisesivdin, J. Lang, F. Jelezko "Spin-coherence time measurements of NV- centers in $^{15}\text{N}^+$, $^{15}\text{N}_2^+$ and O^+ implanted diamond" *Quantum Optics and Informatics Meeting – 4 (Kobit 4)*, İzmir (2020).
- 89 B. Sarikavak-Lisesivdin, S. B. Lisesivdin, E. Ozbay, F. Jelezko "Spin-polarized DFT calculations of nitrogen-vacancy color centers in diamond with various XC potentials" *Quantum Optics and Informatics Meeting – 4 (Kobit 4)*, İzmir (2020).

- 88 O. Omeroglu, S. B. Lisesivdin, E. Ozbay “The Optical Properties of Group-III Nitrides with LDA-1/2 Approximation” *20th National Workshop on Optics, Electro-optics and Photonics, Ankara*, P78, (2018).
- 87 G. Atmaca, P. Narin, E. Kutlu, S. Ardali, E. Tiras, T. Malin, V. G. Mansurov, K. S. Zhuravlev, S. B. Lisesivdin, E. Ozbay “An Investigation on Lifetime of Hot Phonons in GaN-Based Heterostructures” *20th National Workshop on Optics, Electro-optics and Photonics, Ankara*, P68, (2018).
- 86 J. M. All Abbas, P. Narin, E. Kutlu, S. B. Lisesivdin, E. Ozbay “First Principle Study of ZnO Nanoribbon Passivated with H and Mg” *20th National Workshop on Optics, Electro-optics and Photonics, Ankara*, P37, (2018).
- 85 E. Kutlu, P. Narin, A. Yildiz, S. B. Lisesivdin “Structural and Optical Properties of $Mg_xZn_{1-x}O$ Nanostructures Depending on Growth Temperatures” *20th National Workshop on Optics, Electro-optics and Photonics, Ankara*, P31, (2018).
- 84 E. Kutlu, P. Narin, A. Yildiz, S. B. Lisesivdin “Effect of Transducer Power on Optical and Structural Properties of ZnO Nanostructures” *20th National Workshop on Optics, Electro-optics and Photonics, Ankara*, P30, (2018).
- 83 P. Narin, E. Kutlu, S. B. Lisesivdin, E. Ozbay “Growth of ZnO Nanostructures on Sapphire by Ultrasonic Spray CVD” *20th National Workshop on Optics, Electro-optics and Photonics, Ankara*, P29, (2018).
- 82 P. Narin, E. Kutlu, S. B. Lisesivdin, “Optical and Structural Properties of ZnO Grown by Mist CVD Using Different Precursor Molarity” *20th National Workshop on Optics, Electro-optics and Photonics, Ankara*, P28, (2018).
- 81 R. Ibrahim, P. Narin, S. B. Lisesivdin, E. Ozbay “First-Principles Calculation of Optical Properties of Magnesium Zinc Oxide” *20th National Workshop on Optics, Electro-optics and Photonics, Ankara*, P14, (2018).
- 80 O. Omeroglu, S. B. Lisesivdin, E. Ozbay “The Electronic Properties of Asymmetrical Armchair Boron Nitride Nanoribbons With Germanium Termination” p475, *Turkish Physical Society 34th International Physics Congress*, September 5-9 2018, Bodrum, Turkey.
- 79 O. Omeroglu, S. B. Lisesivdin, E. Ozbay “Improvement of the Theoretical Band Gaps for AlN, GaN and InN with LDA-1/2 Approach” p495, *Turkish Physical Society 34th International Physics Congress*, September 5-9 2018, Bodrum, Turkey.
- 78 M. T. Haliloglu, S. B. Lisesivdin, E. Ozbay “Back-Side Via Etching Application of SiC for GaN-Based Transistors” *1st Light and Light-Based Technologies Workshop*, Ankara, p51 (2018).
- 77 S. Mutlu, S. B. Lisesivdin, A. Erol, E. Tiras "Evolution of HELLISH devices: Colorful story of HELLISH Devices from IR to VIS light" *Celebrating Naci: The Physics of Optoelectronic Materials and Devices*, 27-28 March 2017, Colchester, UK.

- 76 A. Erol, S. Mutlu, S. B. Lisesivdin, E. Tiras, "Hot electron Transport Based Devices for Optoelectronics" *International Conference on Condensed Matter and Material Science*, October 11-15 2017, Adana, Turkey.
- 75 S. B. Lisesivdin, E. Kutlu, J. M. Allabbas, O. Omeroglu, R. Ibrahim, E. Ozbay "Zn ve Cd Atomları ile Katkılanmış "Armchair" Grafen Nanoşeritlerin Elektronik Yapıları" *ADIM Physics Days VI*, July 19-21 2017, Balıkesir, Turkey.
- 74 J.-H. Lee, G. Atmaca, J. -G. Kim, D. -H. Son, J. -M. Ju, S. B. Lisesivdin, J. -H. Lee, High Voltage Low Leakage Current AlGaIn/GaN HEMTs with Multi-layer Buffer and AlGaIn Back-Barrier Structure, P310, *Turkish Physical Society 33rd International Physics Congress*, September 6-10 2017, Bodrum, Turkey.
- 73 J. M. Al Abbas, P. Narin, S. B. Lisesivdin, E. Ozbay, A First Principle Investigations of The Electronic Structures For ZGNRs Terminated With Zn, Cd and H, P587, *Turkish Physical Society 33rd International Physics Congress*, September 6-10 2017, Bodrum, Turkey.
- 72 A. F. Kuloglu, S. B. Lisesivdin, E. Ozbay, A Theoretical Study of (5,0) Zigzag BexZn1-Xo Nanotubes: Investigation of Structural, Electronic and Optic Properties Using Density Functional Theory, P588, *Turkish Physical Society 33rd International Physics Congress*, September 6-10 2017, Bodrum, Turkey.
- 71 E. Kutlu, O. Omeroglu, R. Ibrahim, S. B. Lisesivdin, E. Ozbay, First Principle Calculations of Zn and Cd-Doped Zigzag Graphene Nanoribbons, P611, *Turkish Physical Society 33rd International Physics Congress*, September 6-10 2017, Bodrum, Turkey.
- 70 O. Omeroglu, E. Kutlu, S. B. Lisesivdin, E. Ozbay, Investigation of The Electronic Properties of Zinc and Magnesium Adsorption on Graphene Sheets, P620, *Turkish Physical Society 33rd International Physics Congress*, September 6-10 2017, Bodrum, Turkey.
- 69 G. Atmaca, J. -G. Kim, J. -H. Lee, C. -H. Won, S. -H. Kang, S. B. Lisesivdin, J. -H. Lee, Numerical Optimization of 2DEG Improvement in AlGaIn/GaN HEMTs with C-GaN/u-GaN Multi-layer Buffer Structure, P629, *Turkish Physical Society 33rd International Physics Congress*, September 6-10 2017, Bodrum, Turkey.
- 68 R. Ibrahim, P. Narin, S. B. Lisesivdin, E. Ozbay, Optimized Ab Initio Studies on Electronic Structure of Wurtzite MgZnO, P630, *Turkish Physical Society 33rd International Physics Congress*, September 6-10 2017, Bodrum, Turkey.
- 67 P. Narin, J. M. Al Abbas, S. B. Lisesivdin, E. Ozbay, The Effect of Zinc, Cadmium and Hydrogen Terminations on The Electronic Structure of Symmetrical AGNRs, P648, *Turkish Physical Society 33rd International Physics Congress*, September 6-10 2017, Bodrum, Turkey.
- 66 E. Kutlu, P. Narin, G. Atmaca, S. B. Lisesivdin, E. Ozbay "Sn, I, Au gibi Bazı Safsızlıkların Siyah Fosfor'un Elektronik ve Optik Özelliklerine Etkileri" *18th National Workshop on Optics, Electro-optics and Photonics*, Ankara, P26,(2016).
- 65 P. Narin, E. Kutlu, G. Atmaca, B. Sarıkavak-Lisesivdin, S. B. Lisesivdin, E. Ozbay "Ultraince Bariyere Sahip AlN/GaN ve InAlN/GaN HEMT Yapıların Yapısal ve Yüzey Özelliklerinin

İncelenmesi” 18th National Workshop on Optics, Electro-optics and Photonics, Ankara, P72,(2016).

- 64 G. Atmaca I. Berkutov, O. A. Mironov, K. Rogacki, S. B. Lisesivdin, E. Ozbay “The Weak Localization In A Two-Dimensional Electron Gas In AlInN/AlN/GaN Heterostructures” 18th National Workshop on Optics, Electro-optics and Photonics, Ankara, P43,(2016).
- 63 J. M. Al Abbas, G. Atmaca, P. Narin, E. Kutlu, B. Sarikavak-Lisesivdin, S. B. Lisesivdin “Numerical Investigation Of 2DEG Properties In Ultrathin-Barrier AlN/GaN Heterostructures with AlGaIn and InGaIn Back-Barriers” 18th National Workshop on Optics, Electro-optics and Photonics, Ankara, P47,(2016).
- 62 M. Ozturk, E. Arslan, P. Narin, S. B. Lisesivdin, B. Sarikavak-Lisesivdin, E. Ozbay “Ultrathin Bariyerli GaN-Temelli HEMT’lerde Elektron Gazının Elektriksel Özellikleri ve Saçılma Analizleri” 18th National Workshop on Optics, Electro-optics and Photonics, Ankara, P50,(2016).
- 61 J. M. Al Abbas, P. Narin, E. Kutlu, G. Atmaca, S. B. Lisesivdin, B. Sarikavak-Lisesivdin "P-tipi ve N-tipi InGaIn Arka-Bariyerli Ultrathin AlInN/GaN Çoklu Yapılarda İki Boyutlu Elektron Gazı" *ADIM Physics Congress V*, p.163 (2016).
- 60 J. M. Al Abbas, P. Narin, G. Atmaca, E. Kutlu, S. B. Lisesivdin, B. Sarikavak-Lisesivdin "Ultrathin Bariyerli AlN/GaN Çoklu Yapılarda Farklı Katmanların 2DEG Üzerine Etkisi" *ADIM Physics Congress V*, p.164 (2016).
- 59 E. Kutlu, P. Narin, G. Atmaca, J. M. Al Abbas, B. Sarikavak Lisesivdin, S. B. Lisesivdin "Li Katkılı Zigzag Kenarlı Grafen Nano Şeritlerin Elektronik Özelliklerinin İncelenmesi" *ADIM Physics Congress V*, p.151 (2016).
- 58 E. Tiras, G. Atmaca, S. B. Lisesivdin, S. Ardali, T. Malin, V. Mansurov, K. Zhuravlev, Power-loss Mechanisms in Surface Passivated AlGaIn/AlN/GaN Heterojunctions, 11th Conference on Laser and Electro-Optic Pacific Rim, CLEO-PR 2015, 24-28 August, Busan, Korea (2015).
- 57 S. Ardali, G. Atmaca, S. B. Lisesivdin, T. Malin, V. Mansurov, K. Zhuravlev, E. Tiras, Surface Passivation Effect in AlGaIn/AlN/GaN Heterostructure, *European Materials Research Society 2015 Spring Meeting*, I-P1 3 (2015).
- 56 T. Tiras, G. Atmaca, S. B. Lisesivdin, T. Malin, V. Mansurov, K. Zhuravlev, E. Tiras, The longitudinal optical phonon energy in passivated AlGaIn/AlN/GaN, *European Materials Research Society 2015 Spring Meeting*, I-P1 5 (2015).
- 55 P. Narin, E. Kutlu, G. Atmaca, B. Sarikavak-Lisesivdin, S. B. Lisesivdin, “Investigation of Optical Properties of the Beta-Si₃N₄ structure doped with some Group IIIA Elements” 1st International Conference on Organic Electronic Material Technologies, p102 (2015).
- 54 E. Kutlu, P. Narin, G. Atmaca, B. Sarikavak-Lisesivdin, S. B. Lisesivdin “First Principle Calculations of Electrical Properties of Insulator Wurtzite the Beta-Si₃N₄ with the Aluminum, Indium and Gallium Impurities” 1st International Conference on Organic Electronic Material Technologies, p103 (2015).

- 53 G. Atmaca, T. Malin, E. Kutlu, S. Ardali, P. Narin, V. Mansurov, B. Sarikavak-Lisesivdin, S. B. Lisesivdin, E. Tiras, K. Zhuravlev, "The Effect of In-Situ Si₃N₄ Passivation on Hot-Electron Energy Relaxation Rates in AlGa_N/Ga_N Heterostructures" *Нитриды галлия, индия и алюминия: структуры и приборы, Санкт-Петербурге*, p141-142 (2015)
- 52 G. Atmaca, P. Narin, E. Kutlu, S. B. Lisesivdin "The Effect of Si₃N₄ Passivation with As-Impurity on the Device Properties of AlGa_N/Ga_N HEMT Structures" *IX. International Balkan Physics Union Conference*, p410 (2015).
- 51 S. B. Lisesivdin, G. Atmaca, S. Ardali, E. Tiras, T. Malin, V. Mansurov, K. Zhuravlev "The Effect of in situ Si₃N₄ Passivation on 2DEG Quantum Well Parameters in AlGa_N/Ga_N Heterostructures *IX. International Balkan Physics Union Conference*, p441 (2015).
- 50 S. B. Lisesivdin, "Implementation of Simple Parallel Conduction Extraction Method (SPCEM) for separating 2D and 3D conduction channels in semiconductor structures" *Конференция И Школа Молодых Учёных По Актуальным Проблемам Физики Полупроводниковых Структур, Novosibirsk*, 25, (2014).
- 49 E. Kutlu, P. Narin, G. Atmaca, B. Sarikavak-Lisesivdin, S. B. Lisesivdin "Ab initio study of oxygen and arsenic impurities on non-linear optical properties of β-Si₃N₄ material" *Конференция И Школа Молодых Учёных По Актуальным Проблемам Физики Полупроводниковых Структур, Novosibirsk*, 77, (2014).
- 48 G. Atmaca, A. E. Evrensel, S. B. Lisesivdin "Influence of interface traps on device performance of AlGa_N/Ga_N HEMTs with Si₃N₄ passivation" *Turkish Physical Society 31th International Physics Congress*, p371 (2014).
- 47 E. Kutlu, P. Narin, G. Atmaca, S. B. Lisesivdin, M. Kasap "Investigation of electrical properties of two dimensional hole gas in hybrid InGa_N/ZnO heterostructure" *Turkish Physical Society 31th International Physics Congress*, p401 (2014).
- 46 S. B. Lisesivdin, E. Kutlu, P. Narin, G. Atmaca, B. Sarikavak-Lisesivdin, "Investigation of the effect of the arsenic impurity on the electronic and optical properties of β-Si₃N₄ dielectric material" *Turkish Physical Society 31th International Physics Congress*, p402 (2014).
- 45 P. Narin, G. Atmaca, S. B. Lisesivdin, "Effects of ultrathin InGa_N channel layer on two dimensional electron gas in hybrid Ga_N/InGa_N/ZnO heterostructures" *Turkish Physical Society 31th International Physics Congress*, p406 (2014).
- 44 S. B. Lisesivdin, G. Atmaca, E. Arslan, J. Ul-Hassan, E. Janzén, E. Ozbay "SiC üzerine büyütülen grafen yapılarında elektriksel iletim kanallarının ayrıştırılıp incelenmesi XIX. *Solid State Matter Physics Ankara Meeting*, S13, (2013). [Invited].
- 43 S. B. Lisesivdin, N. A. Khan , S. Mazzucato , N. Balkan, M. J. Adams "Gain in electrically-driven 1.3 μm dilute nitride VCISOAs" *COST MP0805 Final Meeting, Istanbul*, P17, (2013).
- 42 P. Narin, G. Atmaca, E. Boyali, S. B. Lisesivdin, M. Kasap, S. Ozelik, "Scattering Analysis of 2DEG in AlIn_N/Ga_N Based Heterostructures with Ga_N and InGa_N Quantum Wells", *Turkish Physical Society 30th International Physics Congress*, p530 (2013).

- 41 E. Boyali, P. Narin, G. Atmaca, S. B. Lisesivdin, M. Kasap and S. Ozcelik, “The Investigation of Temperature Dependent Electrical Transport Properties of $\text{In}_x\text{Ga}_{1-x}\text{P}/\text{GaAs}$ ”, *Turkish Physical Society 30th International Physics Congress*, p482 (2013).
- 40 P. Narin, G. Atmaca, B. Sarikavak-Lisesivdin, S. B. Lisesivdin, M. Kasap, “A Numerical Investigation on Electronic Properties of Two Dimensional Electron Gas in $\text{Be}_x\text{Zn}_{1-x}\text{O}/\text{ZnO}$ Heterostructures”, *Turkish Physical Society 30th International Physics Congress*, p529 (2013).
- 39 G. Atmaca, P. Tunay Tasli, S. B. Lisesivdin, “Electron Confinement in Lattice-Matched $\text{InAlN}/\text{AlN}/\text{GaN}$ Heterostructures with $\text{Al}_y\text{Ga}_{1-y}\text{N}$ Back-barrier”, *8th Nanoscience and Nanotechnology Conference*, PP-332 (2012).
- 38 B. Sarikavak Lisesivdin, S. B. Lisesivdin, E. Ozbay, “First Principles Study of Interaction Between Ru and Graphene Nanoribbons” *2nd Int. Conf. on Comp. for Sci. and Techno.* pp-70 (2012).
- 37 P. Tasli, S. B. Lisesivdin, M. Kasap, S. Ozcelik, E. Ozbay “ InAlN/GaN Temelli Yuksek Elektron Mobiliteli Transistörlerin (HEMT) Elektron ve Magneto Iletim Ozellikleri” *ADIM Physics Congress II*, 65 (2012).
- 36 B. Sarikavak-Lisesivdin, S. B. Lisesivdin, E. Ozbay “ $\text{AlGaIn}/\text{GaIn}$ -temelli Yuksek Hareketlilik Sahip Transistorlerde InGaIn Geribariyerin Dislokasyon Yogunluguna Etkisi” *ADIM Physics Congress II*, 131 (2012).
- 35 A. F. Kuloglu, B. Alsancak, C. Gunes, S. B. Lisesivdin, E. Ozbay “Kenarlari Paladyum Atomlari ile Sonlandirilmis Farkli Genisliklerdeki Armchair Grafen Nanoseritlerin Elektronik Ozelliklerinin Yogunluk Fonksiyonu Teorisi Kullanilarak Incelenmesi” *I. Solid State Matter Physics İzmir Meeting*, p01 (2012).
- 34 C. Günes, A. F. Kuloglu, S. B. Lisesivdin, E. Ozbay, “ GaIn -tabanlı HEMT Yapilarin Hareketliliği ve Tasiyici Yogunlugunun Deneysel Incelenmesi” *I. Solid State Matter Physics İzmir Meeting*, p18 (2012).
- 33 K. Elibol, C. Gunes, A. F. Kuloglu, E. Boyali and S. B. Lisesivdin “A Numerical Study on Effects of $\text{InAlN}/\text{AlGaIn}$ Barrier in $\text{InAlN}/\text{AlGaIn}/\text{AlN}/\text{GaIn}$ -based High Electron Mobility Transistors” *Turkish Physical Society XXVIII. International Conference*, p711 (2011).
- 32 K. Elibol, G. Atmaca, O. Kelekci, P. Tasli, E. Ozbay and S. B. Lisesivdin “Self-consistent Transport Properties of Graphene Sheets” *Turkish Physical Society XXVIII. International Conference*, p710 (2011).
- 31 G. Karakoc, G. Atmaca, E. Yazbahar, P. Tasli and S. B. Lisesivdin “Numerical Investigation of Two-dimensional Electron Gas in $\text{AlGaIn}/\text{AlN}/\text{GaIn}$ HEMT with $\text{InGaIn}/\text{GaIn}$ Multi-quantum Well Structure” *Turkish Physical Society XXVIII. International Conference*, p745 (2011).
- 30 K. Elibol, Ö. Kelekçi, G. Atmaca, S. B. Lisesivdin, M. Kasap, S. Özçelik and E. Özbay “Grafen Flake Üretim Yöntemlerinin Geliştirilmesi” *XVII. Solid State Matter Physics Ankara Meeting*, S2 (2010).

- 29 G. Atmaca, K. Elibol, P. Taşlı, S. B. Lişesivdin and M. Kasap “Eklem Alan Etkili Transistörlerin Elektriksel Karakteristiklerinin İncelenmesi” XVII. *Solid State Matter Physics Ankara Meeting*, S12 (2010).
- 28 Ö. Kelekçi, S. B. Lişesivdin, M. Kasap, S. Özçelik and E. Özbay “InGaN arka bariyerli $\text{Al}_x\text{Ga}_{1-x}\text{N}/\text{AlN}/\text{GaN}$ HEMT yapılarındaki ince filmlerin alaşım oranları ve kalınlıklarının nümerik optimizasyonu” XVII. *Solid State Matter Physics Ankara Meeting*, S17 (2010).
- 27 K. Elibol, G. Atmaca, P. Taşlı, S. B. Lişesivdin and M. Kasap “GaN Tabanlı MESFET Yapıların 2-boyutta Elektriksel Karakteristikleri” XVII. *Solid State Matter Physics Ankara Meeting*, P34 (2010).
- 26 A. F. Kuloglu, S. B. Lişesivdin and M. Kasap “GaAs Tabanlı Bir MOSFET Yapının 2-Boyutta Akım – Gerilim Karakteristiklerinin İncelenmesi” XVII. *Solid State Matter Physics Ankara Meeting*, P88 (2010).
- 25 O. Kartaloğlu, G. Atmaca, K. Elibol and S. B. Lişesivdin “Erbiyum Katkılı Eklem Diyotun I-V Karakteristiği” XVII. *Solid State Matter Physics Ankara Meeting*, P46 (2010).
- 24 H. Yu, S. Lisesivdin, B. Bolukbas, O. Kelekci, M. Ozturk, H. Cakmak, P. Demirel and E. Ozbay “Double Heterostructure AlGaIn/GaN/AlGaIn HEMT Based on Grading AlGaIn/AlN Buffer Layer”, 2009 MRS Fall Meeting, I: III-Nitride Materials for Sensing, Energy Conversion, and Controlled Light-Matter Interactions, SESSION I4: Surface and Interface Properties II, I4.9 (2009).
- 23 A. Ilgaz, S. Gokden, A. Teke, S. Ozcelik, S. B. Lisesivdin, E. Ozbay “Safir ve SiC Uzerine Buyutulmus AlGaIn/AlN/GaN HEMT Yapilarindaki Sicak Elektron Dinamiginin Karsilastirilmesi” XVI. *Solid State Matter Physics Ankara Meeting*, P73 (2009).
- 22 G. Atmaca, K. Elibol, P. Tasli, S. B. Lisesivdin, M. Kasap “Cift kanalli AlGaAs/InGaAs/GaAs tabanlı p-HEMT Yapilarinda 1 ve 2-boyutta Schrödinger-Poisson Cozumleri ve Akim-Gerilim Incelemeleri” XVI. *Solid State Matter Physics Ankara Meeting*, P59 (2009).
- 21 S. B. Lisesivdin, H. Altuntaş, A. Yıldız, M. Kasap, E. Ozbay, S. Ozcelik “Sicakliga ve manyetik alana bagli Hall olcumlerinin analizi ile DX-merkezi aktivasyon enerjisi hesabi” XVI. *Solid State Matter Physics Ankara Meeting*, S9 (2009).
- 20 P. Tasli, S. B. Lisesivdin, A. Yildiz, M. Kasap, E. Ozbay “Determination of Two-Dimensional Electron and Hole Gas Carriers in $\text{Al}_{0.88}\text{In}_{0.12}\text{N}/\text{GaN}$ -based Heterostructures Grown by Metal Organic Chemical Vapor Deposition” *Turkish Physical Society XXVI. International Conference*, p510 (2009).
- 19 P. Tasli, S. B. Lisesivdin, M. Kasap, K. Elibol, G. Atmaca, E. Ozbay “A Numerical Study on Subband Structure of $\text{Al}_x\text{In}_{1-x}\text{N}/\text{GaN}$ -based HEMT Structures with Low-Indium ($x>0.82$) Barrier Layer” *Turkish Physical Society XXVI. International Conference*, p509 (2009).
- 18 A. Yildiz, S. B. Lisesivdin, M. Kasap, S. Özçelik, D. Mardare “Small Polaron Transport In Titanium Dioxide Thin Film” *Turkish Physical Society XXV. International Conference*, p133 (2008).

- 17 S. B. Lisesivdin, N. Balkan, O. Makarovsky, A. Patanè, A. Yildiz, M. D. Caliskan, M. Kasap, S. Ozcelik, E. Ozbay “Investigation of the Beating Pattern of Shubnikov-De Haas Oscillations and Spin Splitting in AlGa_N/AlN/GaN/AlN Heterostructures” *Turkish Physical Society XXV. International Conference*, p484 (2008).
- 16 K. Elibol, G. Atmaca, S. B. Lisesivdin, M. Kasap, S. Özçelik “Optimization of Al-mole Fraction and Layer Thicknesses in Al_xGa_{1-x}N/AlN/GaN/Al_xGa_{1-x}N/AlN/GaN Double Channel HEMT Structures” *Turkish Physical Society XXV. International Conference*, p454 (2008).
- 15 S. B. Lisesivdin, N. Balkan, E. Ozbay, “A Simple Parallel Conduction Extraction Method for MODFET’s and Undoped GaN-based HEMTs” *Workshop on Recent Advances of Low Dimensional Structures and Devices*, p90 (2008).
- 14 A. Yildiz, S. Eker, S. B. Lisesivdin, M. Kasap, S. Ozcelik, D. Mardare “On the conduction mechanism of TiO₂” *8th International Conference on Physics of Advanced Materials*, p28 (2008).
- 13 A. Yildiz, H. Altuntas, S. B. Lisesivdin, A. Bengi and M. Kasap “Stokes shift in In_{0.13}Ga_{0.87}N epitaxial layer grown by MOVPE” *Turkish Physical Society XXIV. International Conference*, p152 (2007).
- 12 H. Altuntas, S. B. Lisesivdin, A. Yildiz, T. Mammedov and S.Ozcelik “MBE Growth and Characterization of n-AlGaAs/GaAs Heterojunction” *Turkish Physical Society XXIV. International Conference*, p414 (2007).
- 11 S. B. Lisesivdin, A. Yildiz, S. Acar, M. Kasap, S. Ozcelik, S. Gokden, E. Ozbay “Improved Scattering Analysis of 2DEG carriers in Al_{0.25}Ga_{0.75}N/GaN Heterostructures” *NanoTr3 Conference Proceedings*, p134 (2007).
- 10 A. Yildiz, S. B. Lisesivdin, S. Acar, M. Kasap and D. Mardare “Electrical Conductivity Behaviour in Anatase Phase TiO₂” *NanoTr3 Conference Proceedings*, p151 (2007).
- 9 A. Yildiz, S. B. Lisesivdin, S. Acar, and M. Kasap “Activation Mechanism in InGa_N Grown By MOVPE” *AIP Conf. Proc.* **899** 671 (2007).
- 8 A. Yildiz, S. B. Lisesivdin, S. Acar, and M. Kasap “Mole Fraction Dependence Of Mobility In In_xGa_{1-x}N Alloys” *AIP Conf. Proc.* **899** 670 (2007).
- 7 S. B. Lisesivdin and M. Kasap “Simulation of the Interfacial AlN Layer on Band Structures and Carrier Densities of AlGa_N/GaN HEMT Structures” *AIP Conf. Proc.* **899** 622 (2007).
- 6 S. B. Lisesivdin, A. Yildiz, M. Kasap, and E. Ozbay “Strain Calculations from Hall Measurements in Undoped Al_{0.25}Ga_{0.75}N/GaN HEMT Structures” *AIP Conf. Proc.* **899** 623 (2007).
- 5 S. B. Lisesivdin, S. Acar, M. Kasap “Transport properties of the 2DEG and minority carriers in AlGa_N/GaN HEMT Structures grown by MOCVD” *XIII. Solid State Matter Physics Ankara Meeting*, **P-71**, p104 (2006).

- 4 S. Acar, S. B. Lisesivdin, M. Kasap “Two dimensional hole gas (2DHG) formation evidence in AlGaIn/GaN/AlN HEMTs” *XIII. Solid State Matter Physics Ankara Meeting*, **P-72**, p105 (2006).
- 3 S. B. Lisesivdin, S. Acar, M. Kasap and S. Ozcelik “QMSA Analysis and Effects of Extreme Space-Charge Scattering on the Mobility in III-V Systems grown by MBE” *Turkish Physical Society XXIII. International Conference*, p1214 (2005).
- 2 S. B. Lisesivdin, U. Yurdugul, S. Demirezen, S. Acar and M. Kasap “Galvanomagnetic measurements of LEC grown Te-doped InSb” *XI. Solid State Matter Physics Ankara Meeting*, **P-46**, p79 (2004).
- 1 I. Kara, S. B. Lisesivdin, S. Acar and M. Kasap “Temperature dependence of magnetotransport and electrotransport properties of LEC grown S-doped InAs” *XI. Solid State Matter Physics Ankara Meeting*, **P-34**, p 67 (2004).

ADVISING

PhD

- 3 E. Kutlu, (Ankara University, Institute of Science, Physics Engineering), *2018- present*. Second Advisor.
- 2 P. Narin, (Gazi University, Institute of Science, Physics), *2015 - present*. Advisor.
- 1 G. Atmaca, (Gazi University, Institute of Science, Physics), Investigations of Low-field Transport and Hot-electron Transport in Passivated AlGaIn/GaN HEMTs with Si₃N₄ *2013 - 2018*. Advisor.

MSc

- 12 K. B. Sönmez, (Gazi University, Institute of Science, Advanced Technologies), RF Magnetron Sputter System and Passive Circuit Element Resistor Production and Characterization *2016 - 2019*. Advisor.
- 11 M. T. Haliloğlu, (Gazi University, Institute of Science, Advanced Technologies), Back Side Via Hole Etching Application of SiC for GaN-based Field Effect Transistors *2016 - 2019*. Advisor.
- 10 O. Omeroglu, (Gazi University, Institute of Science, Physics), Investigation of the Electronic Properties of Zn, Cd and Hg-doped Graphene Sheets with Ab-Initio Methods, *2016 - 2018*. Advisor.
- 9 R. Ibrahim, (Gazi University, Institute of Science, Physics), Investigation of Electronic and Optical Properties of Wurtzite MgZnO with First Principles Calculations, *2016 - 2018*. Advisor.

- 8 M. Ozturk, (Gazi University, Institute of Science, Physics), Electrical Characteristics and Scattering Analysis of Ultrathin Barrier GaN-Based High Electron Mobility Transistors, 2015 - 2018. Advisor.
- 7 J. M. M. J. Al-Abbas, (Gazi University, Institute of Science, Physics), Simulation and optimization of GaN-based ultrathin barrier high electron mobility transistors, 2014 - 2016. Advisor.
- 6 E. Kutlu, (Gazi University, Institute of Science, Physics), Investigation of the effects of Cadmium Doping on Electronic and Optical Properties of Graphene Nanoribbons, 2014 - 2016. Advisor.
- 5 A. F. Kuloglu, (Gazi University, Institute of Science, Physics), Investigation of Electronic Properties of Pa-terminated Graphene Nanoribbons, 2010-2012. Advisor.
- 4 G. Atmaca, (Gazi University, Institute of Science, Physics), Numerical Investigation of the 2-Dimensional Carriers in AlQN/AlN/GaN-Based (Q=Ga, In) Transistors with Multi-Quantum Well Back-Barriers, 2010-2012. Advisor.
- 3 K. Elibol, (Gazi University, Institute of Science, Physics), Investigation of Magnetoconductivity and Surface Properties of Exfoliated and Epitaxially Grown Graphene Samples, 2010-2012. Advisor.
- 2 G. Karakoc, (Gazi University, Institute of Science, Physics), Investigating the Electron Transport Properties of AlInN/AlN/(InGaN)/GaN Heterostructures with InGaN Quantum Wells. 2009-2012. Advisor.
- 1 C. Gunes, (Gazi University, Institute of Science, Physics), Electron and magnetotransport investigation of two dimensional electron gas in ultrathin barrier GaN-based heterostructures. 2009-2012. Advisor.

PERSONAL INFORMATION AND OTHER EXPERIENCE

Birth date: September 12th, 1979

Social Status: Married and have a son.

2018-2020 CEO, Biarsis Ltd. Company manufacturing UV-Vis Spectrometers and light sources. Successful acquisition of company is completed at September 2020, <http://www.biarsis.com/>, Ankara, Turkey.

2010-2011 Completed the one-year full-time long military service as Assistant Professor Air Defence Second Lieutenant at Turkish Army Forces, 8. Corps, Air Defence Battalion which is located at Ercis, Van, Turkey.

-End of CV-

Last update: November 5th, 2020.

Hereby, I am confirming that all information listed on this CV is correct at this date.