

## Assoc. Prof. ERMAN ERDOĞAN

### Personal Information

**Office Phone:** [+90 228 214 1552](tel:+902282141552)

**Email:** [erman.erdogan@bilecik.edu.tr](mailto:erman.erdogan@bilecik.edu.tr)

**Web:** <https://avesis.bilecik.edu.tr/erman.erdogan>

### International Researcher IDs

ScholarID: pSrJLZYAAAAJ

ORCID: 0000-0003-2566-3284

Publons / Web Of Science ResearcherID: F-2910-2017

ScopusID: 57191915398

Yoksis Researcher ID: 111467

### Education Information

Doctorate, Ataturk University, Fen Bilimleri Enstitüsü, Nanomalzemeler (Dr), Turkey 2014 - 2017

Postgraduate, University of Wisconsin - Madison, College of Engineering, Materials Science Program (MSP), United States Of America 2010 - 2012

Undergraduate, Suleyman Demirel University, Fen-Edebiyat Fakültesi, Fizik Bölümü, Turkey 2002 - 2006

### Dissertations

Doctorate, RF saçtırma yöntemi ile InXGa1-XN üçlü bileşiğinin ince film olarak büyütülmesi ve karakteristik özelliklerinin deneysel olarak incelenmesi, Ataturk University, Fen Bilimleri Enstitüsü, Nanomalzemeler (Dr), 2017

Postgraduate, First principle calculations of oxygen formation and migration energies in  $\text{rebaCo}_2\text{o}_5.5$  double perovskites, University Of Wisconsin-Madison {Wisconsin}, 2012

### Research Areas

Semiconductor and Superconductor Materials, Optical Properties, Material Characterization, Nanomaterials, Electronic and magnetic devices, microelectronics, Physical Chemistry, Materials Science, Structure of Liquids and Solids; Crystallography, Surfaces, Interfaces, Thin Films and Nanosystems, Electrical properties of electronic structures, interfaces, thin films and low-dimensional structures, Optical Properties, Spectroscopy of Matter

### Academic Titles / Tasks

Associate Professor, Bilecik Seyh Edebali University, Meslek Yüksekokulu, Elektronik Ve Otomasyon, 2024 - Continues

Assistant Professor, Bilecik Seyh Edebali University, Meslek Yüksekokulu, Elektronik Ve Otomasyon, 2021 - 2024

Assistant Professor, Mus Alparslan University, Faculty Of Engineering-Architecture, Department Of Electrical And Electronics Engineering, 2018 - 2021

Research Assistant, Mus Alparslan University, Faculty Of Arts And Sciences, Department Of Physics, 2013 - 2018

## Academic and Administrative Experience

Head of Department, Bilecik Seyh Edebali University, Meslek Yüksekokulu, Motorlu Araçlar Ve Ulaştırma Teknolojileri, 2024 - Continues

Head of Department, Mus Alparslan University, Mühendislik-Mimarlık Fakültesi, Çevre Mühendisliği, 2019 - 2021

## Courses

Nanostructures and Nanotechnology I, Postgraduate, 2023 - 2024, 2022 - 2023

Physics and Chemistry of Nanostructures, Postgraduate, 2023 - 2024, 2022 - 2023, 2021 - 2022

Material Analysis Methods in Physics, Postgraduate, 2023 - 2024

Scientific Principles of Technology, Associate Degree, 2023 - 2024, 2022 - 2023, 2021 - 2022

Material Structure and Crystallography, Postgraduate, 2022 - 2023

Alternating Current Circuit Analysis, Associate Degree, 2022 - 2023, 2021 - 2022, 2020 - 2021

Electrical and Electronic Measurements, Associate Degree, 2023 - 2024, 2022 - 2023

Sensors, Postgraduate, 2021 - 2022

Analog Electronics, Associate Degree, 2021 - 2022, 2020 - 2021

Optical Properties of Solids, Postgraduate, 2022 - 2023

Direct Current Circuit Analysis, Associate Degree, 2022 - 2023

Optoelectronic Devices, Postgraduate, 2021 - 2022

Research Techniques and Seminar, Associate Degree, 2021 - 2022

Professional English I, Associate Degree, 2021 - 2022

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

- I. **Improving photocatalytic efficiency: Harnessing the importance of Ag@HfO<sub>2</sub> core-shell nanostructures**  
KOÇYİĞİT A., ERDOĞAN E., CANPOLAT N., AYDOĞAN Ş., YILMAZ M.  
Journal of Physics and Chemistry of Solids, vol.191, 2024 (SCI-Expanded)
- II. **Fabrication of plasmonic junction diodes based on Ag@ZnO core-shell nanostructures**  
ERDOĞAN E., CANPOLAT N., AYDOĞAN Ş., YILMAZ M.  
Physica Scripta, vol.99, no.6, 2024 (SCI-Expanded)
- III. **Production and Characterization of Electrodeposited Cadmium Sulfide Semiconductor Films with Different Boron Content**  
ERDOĞAN E.  
Crystal Research and Technology, vol.59, no.6, 2024 (SCI-Expanded)
- IV. **Optimizing the structural and photocatalytic performance of Ag-decorated ZnO/Zn(OH)<sub>2</sub> nanoparticles for RhB degradation**  
ERDOĞAN E., EDEN Ç., CANPOLAT N., ÇIRAK Ç., YILMAZ M.  
International Journal of Applied Ceramic Technology, vol.21, no.3, pp.2010-2023, 2024 (SCI-Expanded)
- V. **Synthesis of Zn-doped lead sulphide by electrodeposition: potential change on structural, morphological, and optical properties**  
ERDOĞAN E., KIYAK YILDIRIM A.  
JOURNAL OF MATERIALS SCIENCE-MATERIALS IN ELECTRONICS, vol.34, no.10, 2023 (SCI-Expanded)
- VI. **The electrical and dielectric characterization of the Co/ZnO-Rods/p-Si heterostructure depending on the frequency**  
AYDOĞAN Ş., KOÇYİĞİT A., BOZKURT ÇIRAK B., ERDOĞAN E., YILMAZ M.  
Journal of Materials Science: Materials in Electronics, vol.33, no.9, pp.6059-6069, 2022 (SCI-Expanded)
- VII. **Dependence of electrical parameters of co/gold-chloride/p-Si diode on frequency and illumination**

ERDOĞAN E., YILMAZ M., AYDOĞAN Ş., İNCEKARA Ü., ŞAHİN Y.

Optical Materials, vol.121, 2021 (SCI-Expanded)

- VIII. **Coronene organic films: Optical and spectral characteristics under annealing temperature influences**  
ERDOĞAN E.  
Surface Review and Letters, vol.28, no.9, 2021 (SCI-Expanded)
- IX. **Sol-gel spin coating derived cadmium oxide semiconductor thin films: Effect of Lutetium contribution**  
ERDOĞAN E., Turgut G., YILMAZ M.  
Optik, vol.240, 2021 (SCI-Expanded)
- X. **Schottky barrier engineering in metal/semiconductor structures for high thermal stability**  
ERDOĞAN E., YILMAZ M., AYDOĞAN Ş., İNCEKARA Ü., KACUS H.  
Semiconductor Science and Technology, vol.36, no.7, 2021 (SCI-Expanded)
- XI. **Modification of barrier diode with cationic dye for high power applications**  
ERDOĞAN E., YILMAZ M., AYDOĞAN Ş., İNCEKARA Ü., KACUS H.  
Optik, vol.232, 2021 (SCI-Expanded)
- XII. **Synthesis, characterization, optical, morphological, and antioxidant properties of oligo(2-ethoxy-6-(((2-hydroxyphenyl)imino)methyl)phenol) obtained by oxidative polycondensation**  
KAYA E., ERDOĞAN E., BURSAL E., CANPOLAT E.  
Iranian Polymer Journal (English Edition), vol.30, no.3, pp.285-295, 2021 (SCI-Expanded)
- XIII. **Investigation of neodymium rare earth element doping in spray-coated zinc oxide thin films**  
ERDOĞAN E., YILMAZ M., AYDOĞAN Ş., TURGUT G.  
Journal of Materials Science: Materials in Electronics, vol.32, no.2, pp.1379-1391, 2021 (SCI-Expanded)
- XIV. **X-ray line-broadening study on sputtered InGaN semiconductor with evaluation of Williamson-Hall and size-strain plot methods**  
ERDOĞAN E.  
Indian Journal of Physics, vol.93, no.10, pp.1313-1318, 2019 (SCI-Expanded)
- XV. **Influence of substrate and substrate temperature on the structural, optical and surface properties of InGaN thin films prepared by RFMS method**  
ERDOĞAN E., KUNDAKÇI M.  
Microelectronic Engineering, vol.207, pp.15-18, 2019 (SCI-Expanded)
- XVI. **A study on synthesis, optical properties and surface morphology of novel conjugated oligo-pyrazole films**  
CETİN A., KORKMAZ A., ERDOĞAN E., KÖSEMEN A.  
Materials Chemistry and Physics, vol.222, pp.37-44, 2019 (SCI-Expanded)
- XVII. **Changes of the Physical Properties of Sputtered InGaN Thin Films Under Small Nitrogen Gas Flow Variations**  
ERDOĞAN E., KUNDAKÇI M.  
Journal of Electronic Materials, vol.48, 2019 (SCI-Expanded)
- XVIII. **Novel polySchiff base containing naphthyl: synthesis, characterization, optical properties and surface morphology**  
KORKMAZ A., CETİN A., KAYA E., ERDOĞAN E.  
Journal of Polymer Research, vol.25, no.8, 2018 (SCI-Expanded)
- XIX. **Optoelectronic parameters of TBADN organic molecule: New aspect to solution technique**  
ERDOĞAN E., GÜNDÜZ B.  
Optics and Laser Technology, vol.91, pp.130-137, 2017 (SCI-Expanded)
- XX. **Room temperature current-voltage (I-V) characteristics of Ag/InGaN/n-Si Schottky barrier diode**  
ERDOĞAN E., KUNDAKÇI M.  
Physica B: Condensed Matter, vol.506, pp.105-108, 2017 (SCI-Expanded)
- XXI. **Growth and characterization of GaN thin film on Si substrate by thermionic vacuum arc (TVA)**  
KUNDAKÇI M., MANTARCI A., ERDOĞAN E.  
Materials Research Express, vol.4, no.1, 2017 (SCI-Expanded)

- XXII. **Controlling of the optical properties of the solutions of the PTCDI-C8 organic semiconductor**  
ERDOĞAN E., Gündüz B.  
Electronic Materials Letters, vol.12, no.6, pp.773-778, 2016 (SCI-Expanded)

### Articles Published in Other Journals

- I. **The Effects of Increasing Annealing Temperature on Some Physical Properties of a Glass/GaN/InGaN Film produced with TVA**  
ERDOĞAN E.  
Erzincan Üniversitesi Fen Bilimleri Enstitüsü Dergisi, vol.13, pp.1-10, 2020 (Peer-Reviewed Journal)
- II. **p-Si(100)/InGaN thin film structure and investigation of its physical properties: N<sub>2</sub> gas flow effect**  
ERDOĞAN E., kundakçı m., KASAPOĞLU A. E., GÜR E.  
MATERIALS TODAY : PROCEEDINGS, vol.18, pp.1868-1874, 2019 (Peer-Reviewed Journal)
- III. **Investigation of GaN/InGaN thin film growth on ITO substrate by thermionic vacuum arc (TVA)**  
ERDOĞAN E., kundakçı m.  
SN APPLIED SCIENCES, vol.1, no.1, 2019 (Scopus)
- IV. **INVESTIGATION OF THE EFFECT OF N<sub>2</sub> GAS FLOW RATE ON THE OPTICAL, STRUCTURAL AND MORPHOLOGICAL PROPERTIES OF INDIUM-GALLIUM-NITRIDE TRIPLE THIN FILMS OBTAINED BY SPUTTER TECHNIQUE**  
ERDOĞAN E., kundakçı m.  
Niğde Ömer Halisdemir Üniversitesi Mühendislik Bilimleri Dergisi, vol.7, no.2, pp.1013-1022, 2018 (Peer-Reviewed Journal)
- V. **Growth and characterization of InGaN thin films on Si (111) substrate by RF magnetron sputtering: N<sub>2</sub> gas flow effect**  
ERDOĞAN E., kundakçı m., KASAPOĞLU A. E., GÜR E.  
AIP CONFERENCE PROCEEDINGS, vol.1935, no.150001, 2018 (Scopus)
- VI. **Fundamental properties of PTCDI-C8 semiconductor for optoelectronic and photonic applications**  
ERDOĞAN E., GÜNDÜZ B.  
AIP CONFERENCE PROCEEDINGS, vol.1815, no.1, 2017 (Scopus)
- VII. **InGaN thin film deposition on Si 100 and glass substrates by termionic vacuum arc**  
ERDOĞAN E., kundakçı m., MANTARCI A.  
JOURNAL OF PHYSICS: CONFERENCE SERIES, vol.707, no.1, pp.1-7, 2016 (Peer-Reviewed Journal)

### Refereed Congress / Symposium Publications in Proceedings

- I. **CHARACTERIZATION OF BORIC ACID DOPED NI-FE THIN FILMS GROWN BY ELECTROCHEMICAL DEPOSITION METHOD**  
ERDOĞAN E.  
International Conference on Engineering Technologies (ICENTE), Konya, Turkey, 17 November 2022
- II. **Synthesized Oligo-Schiff base Coated Films and Optical Properties**  
ERDOĞAN E., KORKMAZ A., KAYA E.  
International Engineering and Science Symposium (IESS 2019), Siirt, Turkey, 20 - 22 June 2019
- III. **Impact of Annealing Treatment on Glass/GaN/InGaN Films Produced by TVA**  
ERDOĞAN E.  
5th International Conference on Engineering and Natural Sciences (ICENS 2019), Prag, Czech Republic, 12 - 16 June 2019
- IV. **Novel Oligo-Schiff Base: Synthesis, Characterization, Optical, And Antioxidant Properties**  
KORKMAZ A., KAYA E., BURSAL E., ERDOĞAN E., CANPOLAT E.  
3. International Conference on Agriculture, Food, Veterinary and Pharmacy Sciences (ICAFOP- Trabzon 2019 ),

Trabzon, Turkey, 16 - 18 April 2019

- V. **CALCULATION OF STRESS, STRAIN AND PARTICLE SIZE OF INGAN SEMICONDUCTOR BY WILLIAMSON HALL METHOD**  
ERDOĞAN E.  
International Conference on Multidisciplinary, Science, Engineering and Technology (IMESET'18 Dubai), Dubai, United Arab Emirates, 25 - 27 October 2018
- VI. **PHOTON INTERACTION PARAMETERS OF InGaN THINFILMS**  
KAVAZ E., EKİNCİ N., ERDOĞAN E., Kundakçı M., KURUCU Y., GÜRBULAK B.  
2nd International Congress on Semiconductor materials and Devices, 28 - 30 August 2018
- VII. **SYNTHESIZED MONOMER AND POLY FLUORENE BASED COATED FILMS AND OPTICAL PROPERTIES**  
ERDOĞAN E., KAYA E., ÇETİN A., KORKMAZ A.  
3. International Conference on Material Science and Technology in Cappadocia (IMSTEC 2018), Nevşehir, Turkey, 17 - 19 September 2018
- VIII. **SYNTHESIS OF THIADIAZOLE-CONTAINING CONJUGATED MATERIAL, CHARACTERIZATION AND EXAMINATION OF OPTICAL PROPERTIES OF ITS FILMS**  
KORKMAZ A., KAYA E., ÇETİN A., ERDOĞAN E.  
2. International Congress on Semiconductor Materials and Devices (ICSMD 2018), Ardahan, Turkey, 28 - 30 August 2018
- IX. **Synthesis of Fluorene-Containing Conjugated Polymer With Suzuki-Miyaura Cross-Coupling Polymerisation, Characterization And Examination of Optical Properties of its Thin Films**  
KORKMAZ A., KAYA E., ÇETİN A., ERDOĞAN E.  
2nd International Congress on Semiconductor Materials and Devices (ICSMD), Ardahan, Turkey, 28 - 30 August 2018
- X. **PHYSICAL CHARACTERISTICS OF INGAN TERNARY SEMICONDUCTING THIN FILMS UNDER THE INFLUENCE OF N<sub>2</sub> REACTIVE GAS**  
ERDOĞAN E., kundakçı m.  
International Conference on Engineering Technologies (ICENTE), Konya, Turkey, 7 - 09 December 2017
- XI. **Growth and Characterization of InGaN thin filmson Si(111) substrateby RF Magnetron Sputtering: N<sub>2</sub> gas flow effect**  
ERDOĞAN E., kundakçı m.  
Turk Fizik Dernegi 33. Uluslararası Fizik Kongresi, Mugla/Bodrum, Turkey, 6 - 10 September 2017
- XII. **Electrical Charazterization of Ag/InGaN/n-SiSchottky Diode based on the I-V Characteristics**  
ERDOĞAN E., kundakçı m.  
Turk Fizik Dernegi 33. Uluslararası Fizik Kongresi, Mugla/Bodrum, Turkey, 6 - 10 September 2017
- XIII. **P-SI(100)/INGAN THIN FILM STRUCTURE AND INVESTIGATION OF ITS PHYSICAL PROPERTIES: N<sub>2</sub> GAS FLOW EFFECT**  
ERDOĞAN E., kundakçı m.  
INTERNATIONAL CONGRESS ON SEMICONDUCTOR MATERIALS AND DEVICES ICSMD-2017, Konya, Turkey, 17 - 19 August 2017
- XIV. **INVESTIGATION OF PHYSICAL PROPERTIES OF ITO/GAN/INGAN THIN FILM STRUCTURE PREPARED BY THERMIONIC VACUUM ARC (TVA)**  
ERDOĞAN E., kundakçı m.  
INTERNATIONAL CONGRESS ON SEMICONDUCTOR MATERIALS AND DEVICES ICSMD-2017, Konya, Turkey, 17 - 19 August 2017
- XV. **RADYO FREKANS (RF) SAÇTIRMA YÖNTEMİ İLE FARKLI ALTTAŞLAR ÜZERİNE BÜYÜTÜLEN GaN İNCE FİLMLEİN FİZİKSEL ÖZELLİKLERİ ÜZERİNE RF GÜCÜNÜN ETKİSİ**  
KUNDAKÇI M., MANTARCI A., ERDOĞAN E.  
ADIM FİZİK GÜNLERİ VI, 19 - 21 July 2017
- XVI. **Excess Nitrogen Effects on Optical, Structural and Morphological Properties of the Sputtered InGaN Semiconductor**  
ERDOĞAN E., kundakçı m., KASAPOĞLU A. E., GÜR E.

International Conference on Multidisciplinary, Science, Engineering and Technology (IMESET'17), Baku, Azerbaijan, 12 - 14 July 2017

- XVII. **Electrical and optical properties of 2 tert Butyl 9 10 di naphth 2 yl anthracene TBADN material using solution technique for various solvents**  
ERDOĞAN E., GÜNDÜZ B.  
1. Uluslararası Akdeniz Bilim ve Mühendislik Kongresi (IMSEC 2016), Adana, Turkey, 26 - 28 October 2016, pp.4202-4206
- XVIII. **UV spectra properties of TBADN organic small molecule**  
ERDOĞAN E., GÜNDÜZ B.  
1. Uluslararası Akdeniz Bilim ve Mühendislik Kongresi (IMSEC 2016), Adana, Turkey, 26 - 28 October 2016
- XIX. **FUNDAMENTAL PROPERTIES OF PTCDI C8 SEMICONDUCTOR FOR OPTOELECTRONIC AND PHOTONIC APPLICATIONS**  
ERDOĞAN E., GÜNDÜZ B.  
Türk Fizik Derneği 32. Uluslararası Fizik Kongresi, Bodrum/Muğla, Turkey, 6 - 09 September 2016
- XX. **Detail Optoelectronic Properties of N N Dioctyl 3 4 9 10 perylenedicarboximide PTCDI C8 Organic Molecule by Solution Technique**  
ERDOĞAN E., GÜNDÜZ B.  
Türk Fizik Derneği 32. Uluslararası Fizik Kongresi, Bodrum/Muğla, Turkey, 6 - 09 September 2016
- XXI. **Deposition of III Nitride Thin Films by Plasma Assisted Techniques**  
ERDOĞAN E., KUNDAKÇI M.  
4. Yüklü Parçaçık Optiği (YUKPOP) Vakum Çalıştayı, Afyon, Turkey, 28 - 30 March 2016
- XXII. **Growth and Characterization of GaN thin film by Thermionic Vacuum Arc TVA**  
ERDOĞAN E., KUNDAKÇI M., MANTARCI A.  
Anadolu'nun Zirvesinde 1. Uluslararası Fizik Konferansı, Erzurum, Turkey, 25 - 27 February 2016
- XXIII. **InGaN Thin Film Deposition on Si 100 and Glass Substrates by Termionic Vacuum Arc**  
ERDOĞAN E., KUNDAKÇI M., MANTARCI A.  
Anadolu'nun Zirvesinde 1. Uluslararası Fizik Konferansı, Erzurum, Turkey, 25 - 27 February 2016
- XXIV. **Absorption Coefficient and Refractive Index of In1 xCdxS In2S3 and CdS Thin Films**  
Mutlu K., ERDOĞAN E., AKALTUN Y., TURGUT E., YILDIRIM M.  
International Conference on Nanoscience and Nanotechnology for Next Generation (NanoNG), 20 - 22 August 2014

## Supported Projects

Erdoğan E., Yılmaz M., Koçyiğit A., Aydoğan Ş., Turgut G., Yıldız F., TUBITAK Project, Sıcaklık Ve Manyetik Alan İle Mikrodalga Kayıpları Kontrol Edilebilen Seramiklerin Tasarımı, 2022 - 2025

Erdoğan E., Koçyiğit A., Project Supported by Higher Education Institutions, Elektrokimyasal Yöntem ile Büyütülen Ga2O3'ün Fotodetektör Özelliklerinin Araştırılması, 2022 - 2024

Erdoğan E., Yılmaz M., Koçyiğit A., Canpolat N., Aydoğan Ş., TUBITAK Project, Foto-Kataliz İçin Verimli Duyarlılaştırma Mekanizmasına Sahip Ag@HfO2 Çekirdek-Kabuk Nanoyapıların Tasarımı, 2022 - 2023

Erdoğan E., Kıyak Yıldırım A., Project Supported by Higher Education Institutions, Optoelektronik Uygulamalar İçin Zn Katkili PbS Yarıiletkeninin Optik Özelliklerinin İyileştirilmesi, 2021 - 2022

## Tasks In Event Organizations

Erdoğan E., Global summit on 2D Materials and Graphene Technology (GS2DMAT2024), Scientific Congress, Praha, Czech Republic, Eylül 2024

Erdoğan E., 2ND INTERNATIONAL MEET & EXPO ON MATERIALS SCIENCE AND NANOMATERIALS CONFERENCE (MATERIALSMEET2023), Scientific Congress, Lisbon, Portugal, Eylül 2023

## Scholarships

1416 SAYILI KANUN KAPSAMINDA YURT DIŐINA ÖĐRENCİ GÖNDERİLMESİ, Ministry of Education, 2009 - 2012