

## Lect. PhD Zeynep ORHAN

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### International Researcher IDs

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### Education Information

Doctorate, Ataturk University, Fen Fakültesi, Fizik, Turkey 2018 - 2023

Postgraduate, Ataturk University, Fen Fakültesi, Fizik, Turkey 2014 - 2018

Undergraduate, Ataturk University, Kâzım Karabekir Eğitim Fakültesi, Matematik ve Fen Bilimleri Eğitimi, Turkey 2008 - 2013

### Dissertations

Postgraduate, The effects of sample temperature on electrical characteristics of some metal and alloy/n-Si/Ti Schottky diodes, Ataturk University, Fen Fakültesi, Fizik, 2018

### Research Areas

Intensive Article 2: Electronic Structure, Electric, Magnetic and Optical Properties

### Academic Titles / Tasks

Lecturer, Ataturk University, Rektörlük, -, 2020 - Continues

### Courses

MICROELECTRONICS FACTORY SCIENCE AND ENGINEERING I, Postgraduate, 2023 - 2024

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

- I. **Investigation of the performance and stability of self-powered polythiophene-based photodiodes under UV and visible light illumination**  
ORHAN Z., KASAPOĞLU A. E., DOĞAN H., DAŞ E.  
Sensors and Actuators A: Physical, vol.378, 2024 (SCI-Expanded)
- II. **Dual-functional CuO:Fe<sub>2</sub>O<sub>3</sub>/n-Si heterojunction with applications in**

**gas sensors and self-powered visible photodetectors**

Sarıtaş S., Yıldırım F., Orhan Z., Aydoğan Ş.

OPTICAL MATERIALS, vol.151, 2024 (SCI-Expanded)

- III. **Hydrogen gas sensing and photodetector applications on electrofabricated Pd@CuCo<sub>2</sub>O<sub>4</sub> nanostructures**  
Orhan Z., Öztürk Doğan H., Aydoğan Ş., Sarıtaş S., Bingül Z.  
CERAMICS INTERNATIONAL, vol.50, no.5, pp.8472-8479, 2024 (SCI-Expanded)
- IV. **Numerical evaluations of curcumin organic molecule and an experimental study on hybrid photodetector performance in visible and UV regions**  
Dogan H., Yıldırım F., Orhan Z., Ahmed A. B., Benhaliliba M., Aydoğan Ş.  
ORGANIC ELECTRONICS, vol.124, 2024 (SCI-Expanded)
- V. **Long-term stable and high responsivity visible-ultraviolet photodetector of Se-doped CdO film on Si by spin coating**  
CEVİZ ŞAKAR B., ORHAN Z., Yıldırım F., AYDOĞAN Ş.  
JOURNAL OF PHYSICS D-APPLIED PHYSICS, vol.56, no.34, 2023 (SCI-Expanded)
- VI. **The electrochemical fabrication of CoCr<sub>2</sub>O<sub>4</sub>/electro-reduced graphene oxide electrodes for high-performance supercapacitors**  
ORHAN Z., AYDOĞAN Ş., ÖZTÜRK DOĞAN H.  
Chemical Physics Letters, vol.820, 2023 (SCI-Expanded)
- VII. **Conduction mechanism and UV/visible photodetection properties of p-Si/n-SiC heterostructure**  
Şakar B. C., YILDIRIM F., ORHAN Z., AYDOĞAN Ş.  
OPTICAL AND QUANTUM ELECTRONICS, vol.55, no.4, 2023 (SCI-Expanded)
- VIII. **UV-Visible photovoltaic detector based on biomaterial-inorganic semiconductor in the propolis/n-Si heterojunction configuration**  
YILDIRIM F., ORHAN Z., AYDOĞAN Ş.  
MATERIALS RESEARCH BULLETIN, vol.159, 2023 (SCI-Expanded)
- IX. **Highly sensitive self-powered UV-visible photodetector based on ZrO<sub>2</sub>-RGO nanofibers/n-Si heterojunction**  
YILDIRIM F., Khalili S., ORHAN Z., Chenari H. M., AYDOĞAN Ş.  
JOURNAL OF ALLOYS AND COMPOUNDS, vol.935, 2023 (SCI-Expanded)
- X. **Improving the performance of the self-powered polymer-based UV/Vis photodetectors via carbon fibers**  
Havigh R. S., Chenari H. M., YILDIRIM F., ORHAN Z., AYDOĞAN Ş.  
PHYSICA SCRIPTA, vol.98, no.1, 2023 (SCI-Expanded)
- XI. **Ultraviolet and visible photo-response of transparent conductive Al-doped ZnO (AZO)/n-Silicon isotype heterojunction device**  
Ceviz Şakar B., Orhan Z., Yıldırım F., Aydoğan Ş.  
JOURNAL OF PHYSICS D-APPLIED PHYSICS, vol.55, no.42, 2022 (SCI-Expanded)
- XII. **A comparative study of the ZnO Fibers-based photodetectors on n-Si and p-Si**  
Yıldırım F., ORHAN Z., Khalili S., Chenari H. M., AYDOĞAN Ş.  
JOURNAL OF PHYSICS D-APPLIED PHYSICS, vol.55, no.39, 2022 (SCI-Expanded)
- XIII. **Photo-sensor characteristics of tannic acid (C<sub>76</sub>H<sub>52</sub>O<sub>46</sub>)/n-Si hybrid bio-photodiode for visible and UV lights detection**  
Yıldırım F., ORHAN Z., TAŞKIN M., İNCEKARA Ü., BİBER M., AYDOĞAN Ş.  
OPTICS AND LASER TECHNOLOGY, vol.153, 2022 (SCI-Expanded)
- XIV. **Self-powered photosensor based on curcumin:reduced graphene oxide (Cu:rGO)/n-Si heterojunction in visible and UV regions**  
Öztürk Doğan H., Aydoğan Ş., Orhan Z., Yıldırım F.  
JOURNAL OF ALLOYS AND COMPOUNDS, vol.915, 2022 (SCI-Expanded)
- XV. **Synthesis characterization of SnO<sub>2</sub> nanofibers (NFs) and application of high-performing photodetectors based on SnO<sub>2</sub> NFs/n-Si heterostructure**

- Khalili S., Chenari H. M., ORHAN Z., Yildirim F., AYDOĞAN Ş.  
SENSORS AND ACTUATORS A-PHYSICAL, vol.342, 2022 (SCI-Expanded)
- XVI. **Long-Term Stable, Self-Powered and Highly Sensitive Photodetectors Based on the ZnO:ZrO<sub>2</sub> Composite Fibers (Fs)/N-Si Heterojunction**  
ORHAN Z., Yildirim F., Khalili S., Chenari H. M., AYDOĞAN Ş.  
JOM, vol.74, no.8, pp.3091-3102, 2022 (SCI-Expanded)
- XVII. **Synthesis of electron-rich thiophene triphenylamine based organic material for photodiode applications**  
Erdog M., ORHAN Z., DAŞ E.  
OPTICAL MATERIALS, vol.128, 2022 (SCI-Expanded)
- XVIII. **Highly sensitive, self-powered photodetector based on reduced graphene oxide- polyvinyl pyrrolidone fibers (Fs)/p-Si heterojunction**  
Khalili S., Chenari H. M., Yildirim F., Orhan Z., Aydoğan Ş.  
JOURNAL OF ALLOYS AND COMPOUNDS, vol.889, 2021 (SCI-Expanded)
- XIX. **Self-powered ZrO<sub>2</sub> nanofibers/n-Si photodetector with high on/off ratio for detecting very low optical signal**  
Yildirim F., Orhan Z., Khalili S., Chenari H. M., Aydogan S.  
JOURNAL OF PHYSICS D-APPLIED PHYSICS, vol.54, no.47, 2021 (SCI-Expanded)
- XX. **Influence of thickness of the sputtered diamond-like carbon (DLC) on electronic and dielectric parameters of the Au/DLC/n-Si heterojunction**  
Kurt M. S., Yildirim F., Orhan Z., Aydogan S.  
JOURNAL OF MATERIALS SCIENCE-MATERIALS IN ELECTRONICS, vol.32, no.20, pp.25214-25224, 2021 (SCI-Expanded)
- XXI. **Development of a hybrid photodetector device between pyruvic acid (CH<sub>3</sub>COCOOH) and silicon**  
Orhan Z., Yildirim F., Taşkın M., İncekara Ü., Aydogan S.  
SEMICONDUCTOR SCIENCE AND TECHNOLOGY, vol.36, no.10, 2021 (SCI-Expanded)
- XXII. **Improving light-sensing behavior of Cu/n-Si photodiode with Human Serum Albumin: Microelectronic and dielectric characterization**  
ORHAN Z., YILMAZ M., AYDOĞAN Ş., TAŞKIN M., İNCEKARA Ü.  
Optik, vol.241, 2021 (SCI-Expanded)
- XXIII. **Synthesis of CuO-graphene nanocomposite material and the effect of gamma radiation on CuO-graphene/p-Si junction diode**  
Orhan Z., Cinan E., Çaldıran Z., Kurucu Y., Daş E.  
JOURNAL OF MATERIALS SCIENCE-MATERIALS IN ELECTRONICS, vol.31, no.15, pp.12715-12724, 2020 (SCI-Expanded)

## Articles Published in Other Journals

- I. **Effects of aging on the electrical properties of Au/n-Si/Ti, Cu/n-Si/Ti and AuCu/n-Si/Ti Schottky diodes**  
Taşer A., Orhan Z., Aykaç C., Özakın O., Güzeldir B., Sağlam M.  
Materials Today: Proceedings, vol.46, pp.6954-6959, 2021 (Scopus)
- II. **The temperature dependence of current-voltage characteristics of CuAuAg/n-Si/Ti Schottky diode**  
Orhan Z., Taşer A., Güzeldir B., Sağlam M.  
Materials Today: Proceedings, vol.46, pp.6924-6928, 2021 (Scopus)
- III. **Time-Based Analysis of the Characteristic Parameters of AuAgCu(2:1:1)/n n-Si, AuAgCu(1:2:1)/n n-Si and AuAgCu(1:1:2)/n n-Si Junctions**  
Odabaş M., TAŞER A., Orhan Z., GÜZELDİR B., SAĞLAM M.  
International Journal of Scientific Engineering Research, vol.10, no.9, pp.42-45, 2019 (Peer-Reviewed Journal)

## Refereed Congress / Symposium Publications in Proceedings

- I. **Hydrogen Evolution Reaction on MoO<sub>3</sub> Decorated-CuBi<sub>2</sub>O<sub>4</sub>/Reduced Graphene Oxide Nanocomposite**  
ÖZTÜRK DOĞAN H., Orhan Z.  
International Conference on Engineering, Natural Sciences, and Technological Developments (ICENSTED 2024), Balıkesir, Turkey, 19 July 2024, pp.88-90
- II. **Fabrication and characterization of Al/n-Si/Al schottky diode with rGO interfacial layer obtained by using spin coating method**  
Daş E., Orhan Z., Aydoğan Ş., Güzeldir B.  
2nd International Congress on Semiconductor Materials and Devices (ICSMD), Ardahan, Turkey, 28 - 30 August 2018, vol.46, pp.6899-6903
- III. **EFFECTS OF THERMAL ANNEALING ON DIODE PARAMETERS FROM C-V MEASUREMENTS OF THE Cd/CdS/n-GaAs/In AND Cd/CdSe/n-GaAs/In STRUCTURES**  
Yıldırım F., Orhan Z., Güzeldir B., Sağlam M.  
MAS INTERNATIONAL CONFERENCE ON MATHEMATICS-ENGINEERING-NATURAL&MEDICAL SCIENCES-V, Erzurum, Türkiye, Erzurum, Turkey, 2 - 05 May 2019, pp.622-0
- IV. **THE COMPARISON OF CURRENT -VOLTAGE CHARACTERISTICS OF Au/n-Si/Ti, AuAg/n-Si/Ti AND AuCu/n-Si/Ti SCHOTTKY DIODES AT ROOM TEMPERATURE**  
ORHAN Z., YILDIRIM F., TAŞER A., GÜZELDİR B., SAĞLAM M.  
MAS INTERNATIONAL CONFERENCE ON MATHEMATICS-ENGINEERING-NATURAL&MEDICAL SCIENCES-V, Erzurum, Turkey, 2 - 05 May 2019, pp.635-0
- V. **FABRICATION and CHARACTERIZATION of Al/rGO/n-Si/AlHETEROJUNCTION DIODE**  
Daş E., Orhan Z., Aydoğan Ş., Güzeldir B.  
2nd International Congress on Semiconductor Materials and Devices (ICSMD), Ardahan, Turkey, 28 - 30 August 2018, pp.66-72
- VI. **TIME DEPENDENT ELECTRICAL PROPERTIES OF Au/n-Si/Ti, Ag/n-Si/Ti AND AuAg/n-Si/Ti SCHOTTKY DIODES**  
TAŞER A., ORHAN Z., AYKAÇ C., ÖZAKIN O., GÜZELDİR B., SAĞLAM M.  
2nd International Congress on Semiconductor Materials and Devices (ICSMD-2018), 28-30 August 2018, Ardahan University, Ardahan, TURKEY, 28 - 30 August 2018
- VII. **Effects of Aging on the Electrical Properties of Au/n-Si/Ti, Cu/n-Si/Ti and AuCu/n-Si/Ti Schottky Diodes**  
TAŞER A., ORHAN Z., AYKAÇ C., ÖZAKIN O., GÜZELDİR B., SAĞLAM M.  
2nd International Congress on Semiconductor Materials and Devices (ICSMD-2018), 28-30 August 2018, Ardahan University, Ardahan, TURKEY, 28 - 30 August 2018
- VIII. **EFFECTS OF GOLD WEIGHT RATE ON THE ELECTRICAL CHARACTERISTICS OF CuAuAg/n-Si/Ti SCHOTTKY DIODE**  
ORHAN Z., TAŞER A., GÜZELDİR B., SAĞLAM M.  
2nd International Congress on Semiconductor Materials and Devices (ICSMD-2018), 28-30 August 2018, Ardahan University, Ardahan, TURKEY, 28 - 30 August 2018
- IX. **The temperature dependence of current-voltage characteristics of CuAuAg/n-Si/Ti Schottky diode**  
ORHAN Z., TAŞER A., GÜZELDİR B., SAĞLAM M.  
2nd International Congress on Semiconductor Materials and Devices (ICSMD-2018), 28-30 August 2018, Ardahan University, Ardahan, TURKEY, 28 - 30 August 2018
- X. **Some electrical properties of Sn/SnS/p-Si/Al sandwich structure**  
Aykaç C., Orhan Z., Taşer A., GÜZELDİR B., SAĞLAM M.  
II. International Conference on Advanced Engineering Technologies (ICADET 2017), 21 - 23 September 2017
- XI. **The comparison of electrical characteristics of Ag/n-Si/Ti, AuAg/n-Si/Ti and AuAgCu/n-Si/Ti Schottky diodes at room temperature**  
Orhan Z., Taşer A., Aykaç C., GÜZELDİR B., SAĞLAM M.

- II. International Conference on Advanced Engineering Technologies (ICADET 2017), 21 - 23 September 2017
- XII. **Characterization of capacitance-voltage properties of Ag/n-Si/Ti, AuAg/n-Si/Ti and AuAgCu/n-Si/Ti Schottky diodes at room temperature**  
Taşer A., Orhan Z., Aykaç C., GÜZELDİR B., SAĞLAM M.  
II. International Conference on Advanced Engineering Technologies (ICADET 2017), 21 - 23 September 2017
- XIII. **Oda Sıcaklığında Ag/n-Si/Ti, AuAg/n-Si/Ti and AuAgCu/n-Si/Ti Schottky Diyotların Kapasite-Voltaj Karakteristikleri**  
TAŞER A., ORHAN Z., AYKAÇ C., GÜZELDİR B., SAĞLAM M.  
International Conference on Advanced Engineering Technologies, Bayburt, Turkey, 17 May 2017, vol.1
- XIV. **Structural and Optical Characterization of SnZnInSe Thin Films Prepared by SprayPyrolysis Method**  
Ahmet T., Orhan Z., ÖZAKIN O., GÜZELDİR B., SAĞLAM M.  
II. International Conference on Advances in Natural and Applied Sciences (ICANAS-2017), 18 - 21 April 2017
- XV. **The Effects of Thermal Annealing on The Structural and Optical Characterization of CuSnSe Thin Films Prepared by Spray Pyrolysis Method**  
ÖZAKIN O., Orhan Z., Taşer A., GÜZELDİR B., SAĞLAM M.  
II. International Conference on Advances in Natural and Applied Sciences (ICANAS-2017), 18 - 21 April 2017
- XVI. **Chracterization of Al Doped WO Thin Films Deposited by the Spray Pyrolysis Method**  
Orhan Z., Taşer A., ÖZAKIN O., GÜZELDİR B., SAĞLAM M.  
International Physics Conference at the Anatolian Peak, Erzurum, Turkey, 22 - 25 February 2016, pp.258

## Supported Projects

ÇINAR DEMİR K., AYDOĞAN Ş., YILMAZ M., ORHAN Z., Project Supported by Higher Education Institutions, Elektrokimyasal Büyütme Metodu İle Elde Edilen CZTS İnce Filmlerinin Süperkapasitör Uygulamalarının İncelenmesi, 2022 - 2024

AYDOĞAN Ş., KURUCU Y., ORHAN Z., YILDIRIM F., SAĞLAM M., ÖZAKIN O., Project Supported by Higher Education Institutions, FİZİK BÖLÜMÜ ARGE POTANSİYELİNİN İYİLEŞTİRİLMESİ İÇİN ÇALIŞMALAR Titanyum Dioksit Molibden Sülfür ve Karbon Tabanlı Nanomalzemelerin Üretimi ve Aygıt Performanslarının Araştırılması, 2021 - 2024

## Tasks In Event Organizations

Kalecik S., Sarıtaş S., Kılıç D., Ünver Y., Nişancı B., Toraman E., Ömeroğlu M. A., Orak T., Taş S., Levet A., et al., 1st International Symposium On Recent Advances In Fundamental And Applied Sciences (Isfas-2021), Scientific Congress, Erzurum, Turkey, Eylül 2021

Kalecik S., Sarıtaş S., Ünver Y., Nişancı B., Bayrakçeken Nişancı F., Karaman M., Ömeroğlu M. A., Orak T., Albayrak Ş., Saraç Y., et al., 1st INTERNATIONAL CONGRESS ON NATURAL SCIENCES (ICNAS-2021) , Scientific Congress, Erzurum, Turkey, Eylül 2021

## Metrics

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