

HALİL İBRAHİM EFKERE

LECT. PHD

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International Researcher IDs

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Learning Knowledge

Doctorate 2015 - 2022	Gazi University, Fen Bilimleri Enstitüsü, Metalurji Ve Malzeme Mühendisliği (Dr), Turkey
Postgraduate 2010 - 2014	Erciyes University, Fen Bilimleri Enstitüsü, Fizik (YI) (Tezli), Turkey
Undergraduate 2005 - 2009	Selcuk University, Faculty Of Science, Department Of Physics, Turkey

Foreign Languages

English, C1 Advanced

Certificates, Courses and Trainings

Education Management and Planning, Eğitimcilerin Eğitimi Sertifika Programı, Gazi Üniversitesi, 2024

Dissertations

Doctorate, WO3 Memristör Aygıtların Geliştirilmesi, Gazi University, Fen Bilimleri Enstitüsü, 2022

Postgraduate, InGaAs/GaAs süperörgü yapılarının moleküler demet epitaksi (MBE) tekniğiyle büyütülmesi ve karakterizasyonu, Erciyes University, Kamu Yönetimi, Fizik (YI) (Tezli), 2013

Academic Titles / Tasks

Lecturer PhD 2020 - Continues	Gazi University, Rektörlük, Fotonik Uygulama ve Araştırma Merkezi
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Supported Projects

- Efkere H. İ., Atılgan A., Project Supported by Higher Education Institutions, RF Magnetron Püskürtme Tekniği ile

Published journal articles indexed by SCI, SSCI, and AHCI

- 1. Structural, morphological, optical and electrical characterization of MgO thin films grown by sputtering technique on different substrates**
Toprak B. Ç., Efkere H. İ., Aydın S. Ş., Tataroğlu A., Özçelik S.
JOURNAL OF MATERIALS SCIENCE: MATERIALS IN ELECTRONICS, vol.35, pp.1-10, 2024 (SCI-Expanded)
- 2. Electrical and dielectric behaviors of Al/SiO₂-surfactant/n-Si schottky structure in wide range of voltage and frequency**
Efkere H. İ., Barkhordari A., Marmiroli B., Sartori B., Özçelik S., Pirgholi-Givi G., Altındal Ş., Azızıan-Kalandaragh Y.
PHYSICA SCRIPTA, vol.99, no.5, pp.1-17, 2024 (SCI-Expanded)
- 3. Detailed analysis of the structural, morphological, optical, electrical, and dielectric properties of the reactively produced WO₃ nanostructure**
Efkere H. İ., Özçelik S.
JOURNAL OF MATERIALS SCIENCE-MATERIALS IN ELECTRONICS, vol.34, no.29, 2023 (SCI-Expanded)
- 4. Evaluation of dielectric properties of Au/TZO/n-Si structure depending on frequency and voltage**
Kinacı B., Bairam C., Yalçın Y., Çokduygulular E., Çetinkaya Ç., Efkere H. İ., Özçelik S.
JOURNAL OF MATERIALS SCIENCE-MATERIALS IN ELECTRONICS, vol.33, no.13, pp.10516-10523, 2022 (SCI-Expanded)
- 5. Design and fabrication of a semi-transparent solar cell considering the effect of the layer thickness of MoO₃/Ag/MoO₃ transparent top contact on optical and electrical properties**
Çetinkaya Ç., Çokduygulular E., Kinacı B., Güzelçimen F., Özen Y., Efkere H. İ., Candan İ., Emik S., Özçelik S.
Scientific Reports, vol.11, no.1, 2021 (SCI-Expanded)
- 6. Investigation of the effect of annealing on the structural, morphological and optical properties of RF sputtered WO₃ nanostructure**
Efkere H. İ., Gumrukcu A. E., Özen Y., Kinacı B., Aydın S. Ş., Ates H., Özçelik S.
PHYSICA B-CONDENSED MATTER, vol.622, 2021 (SCI-Expanded)
- 7. Evaluation on output parameters of the inverted organic solar cells depending on transition-metal-oxide based hole-transporting materials**
Çetinkaya Ç., Çokduygulular E., Kinacı B., Güzelçimen F., Candan İ., Efkere H. İ., Özen Y., Özçelik S.
Optical Materials, vol.120, 2021 (SCI-Expanded)
- 8. Structural, morphological, optical and electrical properties of the Ti doped-ZnO (TZO) thin film prepared by RF sputter technique**
Bairam C., Yalçın Y., EFKERE H. İ., ÇOKDUYGULULAR E., ÇETİNKAYA Ç., KINACI B., ÖZÇELİK S.
PHYSICA B-CONDENSED MATTER, vol.616, 2021 (SCI-Expanded)
- 9. Investigations of some physical properties of ALD growth ZnO films: effect of crystal orientation on photocatalytic activity**
Polat Gönüllü M., Cergel M. S., Efkere H. İ., Ateş H.
JOURNAL OF MATERIALS SCIENCE-MATERIALS IN ELECTRONICS, vol.32, no.9, pp.12059-12074, 2021 (SCI-Expanded)
- 10. Effect of Annealing on the Surface Morphology and Current-Voltage Characterization of a CZO Structure Prepared by RF Magnetron Sputtering**
KINACI B., ÇELİK E. G., ÇOKDUYGULULAR E., ÇETİNKAYA Ç., YALÇIN Y., EFKERE H. İ., ÖZEN Y., Sönmez N., ÖZÇELİK S.
SEMICONDUCTORS, vol.55, no.1, pp.28-36, 2021 (SCI-Expanded)
- 11. The effect of thickness on surface structure of rf sputtered TiO₂ thin films by XPS, SEM/EDS, AFM and SAM**
Guzelcimen F., Tanoren B., Cetinkaya C., Kaya M., Efkere H. İ., Özen Y., Bingol D., Sirkeci M., Kinaci B., Ünlü M. B., et al.
VACUUM, vol.182, 2020 (SCI-Expanded)

12. **Electrical Properties of MOS Capacitor with TiO₂/SiO₂ Dielectric Layer**
Cetin S. Ş., Efkere H. İ., Sertel T., Tataroğlu A., Özçelik S.
SILICON, vol.12, no.12, pp.2879-2883, 2020 (SCI-Expanded)
13. **Gas Sensing Properties of Cr Doped TiO₂ Films Against Propane**
Comert Sertel B., Efkere H. İ., Özçelik S.
IEEE SENSORS JOURNAL, vol.20, pp.13436-13443, 2020 (SCI-Expanded)
14. **Negative capacitance phenomena in Au/SrTiO₃/p-Si heterojunction structure**
Kınacı B., Çetinkaya Ç., Çokduygular E., Efkere H. İ., Akın Sönmez N., Özçelik S.
JOURNAL OF MATERIALS SCIENCE-MATERIALS IN ELECTRONICS, vol.31, pp.8718-8726, 2020 (SCI-Expanded)
15. **The effect of thickness on the optical, structural and electrical properties of ZnO thin film deposited on n-type Si**
Efkere H. İ., Tataroğlu A., Cetin S. Ş., Topaloglu N., Gonullu M., Ateş H.
JOURNAL OF MOLECULAR STRUCTURE, vol.1165, pp.376-380, 2018 (SCI-Expanded)
16. **Efficiency improvement of quantum well solar cell with the AuGeNi metallization and Si₃N₄ ARC design**
Asar T., Baskoese U. C., Kizilkaya K., Efkere H. İ., Ozcelik S.
PHILOSOPHICAL MAGAZINE, vol.95, no.34, pp.3809-3822, 2015 (SCI-Expanded)
17. **Surface structure and photoluminescence properties of AZO thin films on polymer substrates**
Akın Sönmez N., Özen Y., Efkere H. İ., Çakmak M., Özçelik S.
SURFACE AND INTERFACE ANALYSIS, vol.47, pp.93-98, 2015 (SCI-Expanded)

Articles Published in Other Journals

1. **Yüksek Sıcaklıkta Tavllanmış Cu Katkılı ZnO (CZO) Arayüzeyli Au/N-Si Yapısının Dielektrik Özelliklerinin Detaylı İncelenmesi**
EFKERE H. İ.
Gazi Üniversitesi Fen Fakültesi Dergisi, vol.5, no.1, pp.82-89, 2024 (Peer-Reviewed Journal)
2. **Investigation of Dielectric Properties of Metal/Semiconductor Structure with MoO₃ Interface Layer for Low Frequency Values**
Özen Y., Efkere H. İ., Asar T., Özçelik S.
Gazi Üniversitesi Fen Fakültesi Dergisi, vol.2, no.1, pp.24-33, 2021 (Peer-Reviewed Journal)
3. **Investigation of the Structural, Morphological, Optical and Electrical Properties of In₂O₃ Thin Films: Gas Sensor Applications**
Asar T., Korkmaz B., Efkere H. İ., Akın Sönmez N., Özçelik S.
JOURNAL OF POLYTECHNIC-POLITEKNİK DERGISI, vol.21, pp.265-271, 2018 (ESCI)
4. **Structural and Optical Properties of Reactive Sputtered ZnO Thin Films on Flexible-Transparent Substrates**
Akın Sönmez N., Başköse Ü. C., Efkere H. İ., Sağlam S., Aydın S. Ş., Özçelik S.
GAZI UNIVERSITY JOURNAL OF SCIENCE, vol.27, no.4, pp.1111-1114, 2014 (Scopus)

Refereed Congress / Symposium Publications in Proceedings

1. **Rare Earth Oxide CeO₂: Preliminary studies on thin films deposited by RF magnetron sputtering for photocatalytic applications**
EFKERE H. İ.
International Conference on Advanced Materials Science & Engineering and High Tech Devices Applications; Exhibition (ICMATSE 2024), Ankara, Turkey, 24 - 26 October 2024
2. **Flexible Interdigital Ag Electrode Fabrication for UVphotodetectors: A Comparative Study of Aerosol Jet Printing and Thermal Evaporation Methods**

Pashaei P., Serbest B., Akman L. B., Efkere H. İ., Akın Sönmez N., Özçelik S.

4 th International Conference on Light and Light-based Technologies (ICLLT), Ankara, Turkey, 16 - 18 May 2024, vol.1, pp.61

3. **Effect of Buffer Layer Thicknesses on Efficiency of Cadmium Telluride Solar Cell Structures**
Ersoy Y., Efkere H. İ., Özen Y., Aydın S. Ş., Özçelik S.
International Conference on Light and Light-based Technologies (ICLLT-2024), Ankara, Turkey, 16 - 18 May 2024, pp.1
4. **Effect of Hole Transport Layer Thicknesses on Efficiency of CdTe/CdS Solar Cell**
Varol B., Efkere H. İ., Özen Y., Aydın S. Ş., Özçelik S.
International Conference on Light and Light-based Technologies (ICLLT-2024), Ankara, Turkey, 16 - 18 May 2024, pp.2
5. **Investigation of Optical, Structural and Morphological Properties of Zirconium Oxide Thin Films**
Selim Y. N., Toprak B. Ç., Efkere H. İ., Tataroğlu A., Aydın S. Ş., Özçelik S.
International Conference on Light and Light-based Technologies (ICLLT-2024), Ankara, Turkey, 16 - 18 May 2024, pp.3
6. **MgO İnce Filmin Yapısal ve Au/MgO/n-Si Diyotun Elektriksel Özelliklerinin İncelenmesi**
Toprak B. Ç., EFKERE H. İ., TATAROĞLU A., AYDIN S. Ş., ÖZÇELİK S.
Yoğun Madde Fiziği – Ankara Toplantısı, Ankara, Turkey, 22 December 2023
7. **MgO İnce Filmlerin Optik, Yapısal ve Morfolojik Özelliklerinin İncelenmesi**
Toprak B. Ç., EFKERE H. İ., TATAROĞLU A., AYDIN S. Ş., ÖZÇELİK S.
100. Yıl Anısına Yoğun Madde Fiziği Çalıştayı, Ankara, Turkey, 27 October 2023
8. **Investigation of the effect of annealing on the structural and optical properties of RF sputtered WO3 nanostructure for memristor applications**
Efkere H. İ., Gümrükçü A. E., Özen Y., Kınacı B., Aydın S. Ş., Ateş H., Özçelik S.
3rd International Conference on Light and Light-based Technologies (ICLLT), Ankara, Turkey, 25 - 27 May 2022, pp.95
9. **Development of IR optical chopper disc by thermal evaporated ZnS thin films**
Gümüşay Y. M., Efkere H. İ., Gözlekçi G., Başköse Ü. C., Cömert Sertel B., Dönmez Kaya M., Akman L. B., Özçelik S.
2nd International Conference on Light and Light-Based Technologies (ICLLT-2), Ankara, Turkey, 26 - 28 May 2021, pp.117
10. **Nanostructured TiO2 Layers Thickness Dependence of the Surface Morphology and Acoustic Impedance**
Bingöl D., Sirkeci M., Efkere H. İ., Özen Y., Dönmez Kaya M., Tanören B., Kınacı B., Güzelçimen F.
Turkish Physics Society, Muğla, Turkey, 4 - 08 September 2019, vol.1, no.1, pp.23-26
11. **The Effect of Annealing on the Optical and Structural Properties of ZnO Thin Film Deposited on Corning Glass via ALD Technique**
Efkere H. İ., Polat Gönüllü M., Özçelik S., Ateş H.
6th International conference on materials science and nanotechnology for next generation (MSNG2019), 16 - 18 October 2019
12. **Synthesis and Characterization of Al2O3 Thin Film By Using Atomic Layer Deposition**
ÇOLAK T., KUPA İ., ÖZKAN Ö. B., ÜNAL Y., EFKERE H. İ., POLAT GÖNÜLLÜ M., ATEŞ H.
8th International Advanced Technologies Symposium, 19 - 22 October 2017
13. **InGaAs/GaAs Süperörgü Yapılarının Optik Özelliklerinin Belirlenmesi**
Efkere H. İ., Kurtuluş G., Pişkin E., Aydın S. Ş., Asar T., Karaaslan T., Özçelik S.
19. Yoğun Madde Fiziği Kongresi, Ankara, Turkey, 20 December 2013
14. **n-GaP/Si Yapılarının Büyütülmesi ve Yapısal Analizleri**
Pişkin E., Kurtuluş G., Kızılkaya K., Efkere H. İ., Asar T., Aydın S. Ş., Özçelik S.
19. Yoğun Madde Fiziği Kongresi, Ankara, Turkey, 20 December 2013
15. **Structural and optical properties of RF sputtered AZO thin films on different substrates**
Aydın S. Ş., Asar T., Akın Sönmez N., Efkere H. İ., Pişkin E., Başköse Ü. C., Kurtuluş G., Sağlam S., Memmedli T., Özçelik S.

Turkish Physical Society 30th International Physics Congress, İstanbul, Turkey, 02 September 2013

16. **Dislocation densities comparison of the graded and ungraded InGaN solar cell structures**

Özen Y., Şengüllü S., Kızılkaya K., Kınacı B., Efkere H. İ., Öztürk M. K., Çakmak H., Özçelik S., Özbay E.

NanoTR-9, Erzurum, Turkey, 24 - 28 June 2013, pp.172

17. **MBE tekniği ile büyütülen GaxIn1-xP/GaAs alaşımlarının kritik nokta enerjilerinin spektroskopik elipsometre ile incelenmesi**

Aydın S. Ş., Kınacı B., Pişkin E., Efkere H. İ., Memmedli T., Özçelik S.

18. Yoğun Madde Fiziği Kongresi, Ankara, Turkey, 25 November 2011

Courses

FOTONİK LABORATUVARI-III, Undergraduate, 2023 - 2024

Student Project

Innovation Capacity Enhancement, TARNEM, Gazi University, Rektörlük, -, Turkey, 2024 - Continues

Activities in Scientific Journals

American Journal of Optics and Photonics, Publication Committee Member, 2022 - Continues

Memberships / Tasks in Scientific Organizations

OPTİK VE FOTONİK DERNEĞİ, Principal Member, 2024 - Continues, Turkey

Scientific Refereeing

JOURNAL OF INORGANIC AND ORGANOMETALLIC POLYMERS AND MATERIALS, SCI Journal, July 2023

EPJ APPLIED PHYSICS, Journal Indexed in SCI-E, September 2022

Metrics

Publication: 38

Citation (WoS): 268

Citation (Scopus): 285

H-Index (WoS): 10

H-Index (Scopus): 10

Congress and Symposium Activities

YOĞUN MADDE FİZİĞİ ÇALIŞTAYI 27, Attendee, Ankara, Turkey, 2022

MATERIALS SCIENCE AND NANOTECHNOLOGY FOR NEXT GENERATION MSNG-2022, Attendee, Ankara, Turkey, 2022

Fotonik 2022 Ulusal Optik, Elektro-Optik ve Fotonik Çalıştayı, Attendee, Ankara, Turkey, 2022

Research Areas

Physics, Engineering and Technology