

# Prof. Hasan EFEOĞLU

## Personal Information

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## International Researcher IDs

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## Education Information

Undergraduate, Ataturk University, Fen Fakültesi, Fizik, Turkey 1979 - 1993

Doctorate, University of Manchester Institute of Science and Technology (UMIST), Elektronik, United Kingdom 1988 - 1992

Postgraduate, Ataturk University, Fen Bilimleri, Fizik, Turkey 1985 - 1987

## Foreign Languages

English, B2 Upper Intermediate

## Dissertations

Doctorate, Structural, Optical and Electrical Characterization of MBE Grown Erbium Doped GaAs, Si and SixGe1-x, University Of Manchester Institute Of Science And Technology (Umist), Department Of Electrical Engineering And Electronics, Centre For Electronic Materials, 1992

Postgraduate, DC metoduyla Hall ve Özdirenç ölçme sistemi ve n tipi Si için özdirenç ve mobilitenin tayini, Ataturk University, Fen Bilimleri Enstitüsü, Fizik Anabilim Dalı, 1987

## Research Areas

Physics, Interdisciplinary Physics and Related Science and Technology Areas, Materials Science, Intensive Article 2: Electronic Structure, Electric, Magnetic and Optical Properties, Electrical properties of electronic structures, interfaces, thin films and low-dimensional structures, Natural Sciences

## Academic Titles / Tasks

Professor, Ataturk University, Mühendislik Fakültesi, Elektrik-Elektronik Mühendisliği, 2004 - Continues

Professor, Ataturk University, Fen Fakültesi, Fizik, 2002 - 2004

Associate Professor, Ataturk University, Fen Fakültesi, Fizik, 1997 - 2002

Assistant Professor, Ataturk University, Fen Bilimleri Enstitüsü, Fizik Anabilim Dalı, 1994 - 1997

Research Assistant, Ataturk University, Fen Fakültesi, Fizik, 1985 - 1993

## Academic and Administrative Experience

Head of Department, Ataturk University, Mühendislik Fakültesi, Elektrik-Elektronik Mühendisliği, 2005 - 2011

## Courses

### Doctorate

Yarıiletken Proses Teknolojisi, Doctorate, 2022 - 2023

Yarıiletken proses Teknolojisi, Doctorate, 2021 - 2022

YARIİLETKEN PROSES TEKNOLOJİSİ (DAYTAM), Doctorate, 2017 - 2018

### Postgraduate

Elektronik Devrelerde ve Düşük Akım Ölçüm Sistemlerinde Gürültü Azaltma Teknikleri, Postgraduate, 2022 - 2023

Elektronik Devrelerde ve Düşük Akım Ölçüm Sistemlerinde Gürültü Azaltma Teknikleri, Postgraduate, 2022 - 2023

Yarıiletkenlerde Rekombinasyon Merkezlerinin Karakterizasyonu, Postgraduate, 2022 - 2023

Elektronik DEVRELERDE VE DÜŞÜK AKIM ÖLÇÜM SİSTEMLERİNDE GÜRÜLTÜ AZALTMA TEKNİKLERİ, Postgraduate, 2020 - 2021

YARIİLETKEN AYGITLAR VE ELEKTRİKSEL KARAKTERİZASYON TEKNİKLERİ, Postgraduate, 2018 - 2019

Fotovoltaaj enerji dönüşümü için, Postgraduate, 2017 - 2018

Yarıiletkenlerde Rekombinasyon Merkezleri., Postgraduate, 2017 - 2018

### Undergraduate

Elektrik-Elektronik Mühendiliği Malzeme, Undergraduate, 2022 - 2023

Kathal Elektroniği, Undergraduate, 2022 - 2023

Kathal Elektroniği, Undergraduate, 2022 - 2023

Elektrik-Elektronik Mühendisliği Malzeme, Undergraduate, 2021 - 2022

Tümleşik Devre Tasarımı, Undergraduate, 2018 - 2019

Kathal Elektroniği, Undergraduate, 2019 - 2020

Elektronik Devreler, Undergraduate, 2018 - 2019

Material Science, Undergraduate, 2019 - 2020

Görsel Programlama, Undergraduate, 2017 - 2018

## Supervised Theses

Efeoğlu H., Cu-doped TiO<sub>2</sub> thin film based memristors and characterization, Doctorate, B.ALIZADEH(Student), 2021

Efeoğlu H., Metal ZnO ve ZnO<sub>1-x</sub> metal yapısının memristiv davranışının elektriksel ve optik karakterizasyonu, Doctorate, F.GÜL(Student), 2017

Efeoğlu H., Vanadyum oksitte eşik anahtarlama olayı ve hafıza seçme aygıt için uygulama potansiyeli, Postgraduate, M.VAFADAR(Student), 2015

Efeoğlu H., Titanyum dioksit nano filmlerin memristiv özelliği ve fabrikasyon parametreleriyle ilişkisi, Postgraduate, S.GÜLLÜLÜ(Student), 2014

Efeoğlu H., İnce filmlerde plazma tabanlı iyon aşındırma ve Au filme uygulanması, Postgraduate, M.GÜL(Student), 2014

Efeoğlu H., Mo/n-Si Schottky yapılarında engel yüksekliği dağılımının ısı işlem ile değişimi, Postgraduate, H.ERTAŞ(Student), 2011

Efeoğlu H., Er/p-Si Schottky yapılarında engel yüksekliği ve Gauss dağılımının sıcaklığa bağlılığı, Postgraduate, Y.BABACAN(Student), 2011

Efeoğlu H., ZnO nanoyapıların elektrokimyasal depolama yöntemiyle büyütülmesi ve optik karakterizasyonu, Postgraduate, T.Karabey(Student), 2011

Efeoğlu H., DC reaktif magnetron için anahtarlama güç kaynağı tasarımı ve ZnO yapıların üretimi, Postgraduate, G.KEVEN(Student), 2009

Efeoğlu H., SiO<sub>2</sub>/Si üzerinde Zn-Al tabakalı yapıların termal oksidasyonu ve ZnO nano yapıların oluşturulması, Postgraduate, M.Fatih(Student), 2009

Efeoğlu H., Al-Au/GaTe schottky yapıların sıcaklığa bağlı akım-gerilim (I-V-T) ve kapasite-gerilim (C-V-T) karakteristikleri,

Doctorate, M.GÜLNAHAR(Student), 2008

Efeoğlu H., Bilgisayar destekli fotoluminesans ölçüm sisteminde monokromatörün mikrodenetleyici ve adım motor ile kontrolü, Postgraduate, F.KELEK(Student), 2008

Efeoğlu H., Darbeli anodizasyon tekniği ile gözenekli ve Si ve gözenekli Si tabanlı fabry-perot yapılarının üretimi: Yapısal ve optik özelliklerinin incelenmesi, Doctorate, T.KARACALI(Student), 2003

Efeoğlu H., Tabakalı Gate yarı iletken bileşiğinin optik özelliklerini fotoluminesans tekniği ile incelenmesi, Postgraduate, M.GÜLNAHAR(Student), 2000

Efeoğlu H., Ga Te tabakalı kristalinin büyütülmesi ve omik kontak optimizasyonu, Doctorate, C.COŞKUN(Student), 2000

Efeoğlu H., Keithley 610C elektrometresinin akım-gerilim ölçümleri için bilgisayar kontrolüne alınması, Postgraduate, T.Karacalı(Student), 1998

Efeoğlu H., Hall olayı ve rezistivite ölçümleri için enstrumentasyon, Postgraduate, C.COŞKUN(Student), 1996

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

- I. **Experimental current-voltage-temperature and thermal sensitivity behaviors of an ideal Schottky barrier diode over a wide temperature range**  
EFEOĞLU H., Turut A.  
Journal of Vacuum Science and Technology B, vol.43, no.2, 2025 (SCI-Expanded)
- II. **Numerical Analysis of Thermal Sensitivity Characteristics by Pinch-Off Model in Inhomogeneous Schottky Barrier Diodes**  
Turut A., EFEOĞLU H.  
Journal of Electronic Materials, vol.54, no.3, pp.2460-2470, 2025 (SCI-Expanded)
- III. **Room temperature current conduction mechanisms in Ba<sub>0.5</sub>Sr<sub>0.5</sub>TiO<sub>3</sub> and Ba<sub>0.5</sub>Sr<sub>0.5</sub>TiO<sub>3</sub>/TiO<sub>2</sub> multilayer memristor structures**  
Akin O., EFEOĞLU H.  
Journal of Materials Science: Materials in Electronics, vol.36, no.8, 2025 (SCI-Expanded)
- IV. **Investigation of the memristive properties of the device form and thin film form of BST and CeO<sub>2</sub> films with different arrays**  
Akin O., EFEOĞLU H.  
Journal of Materials Science: Materials in Electronics, vol.36, no.6, 2025 (SCI-Expanded)
- V. **An experimental study: Dependence of Schottky diode parameters on Schottky contact area size**  
EFEOĞLU H., Turut A., Gül M.  
Optical Materials, vol.142, 2023 (SCI-Expanded)
- VI. **Thermal sensing capability and current-voltage-temperature characteristics in Pt/ n -GaP/Al/Ti Schottky diodes**  
EFEOĞLU H., Turut A.  
Journal of Vacuum Science and Technology B, vol.41, no.2, 2023 (SCI-Expanded)
- VII. **Current-Voltage Characteristics of Pt Metal-based and PtSi Silicide-based n-Si Schottky Diodes over a Wide Measuring Temperature Range**  
EFEOĞLU H., Turut A., Gül M.  
Journal of Electronic Materials, vol.52, no.2, pp.1410-1418, 2023 (SCI-Expanded)
- VIII. **Thermal sensitivity and current-voltage-temperature characteristics in Pt/epitaxy n-Si/n(+)-Si structures as a function of Schottky contact area**  
EFEOĞLU H., Turut A., Gul M.  
JOURNAL OF VACUUM SCIENCE & TECHNOLOGY B, vol.40, no.5, 2022 (SCI-Expanded)
- IX. **Current-voltage-measurement temperature characteristics depending on the barrier-forming contact metal thickness in Au/Cu/n-Si/Au-Sb/Ni rectifying contacts**  
EFEOĞLU H., Turut A.  
MATERIALS SCIENCE IN SEMICONDUCTOR PROCESSING, vol.143, 2022 (SCI-Expanded)
- X. **A highly stable temperature sensor based on Au/Cu/n-Si Schottky barrier diodes dependent on the**

**inner metal thickness**

EFEÖĞLU H., TÜRÜT A.

JOURNAL OF PHYSICS D-APPLIED PHYSICS, vol.55, no.18, 2022 (SCI-Expanded)

- XI. **Analysis and Comparison of the Main Electrical Characteristics of Cu/n-type Si metal semiconductor structures at wide temperature Range**  
BAKKALOĞLU Ö. F., EJDERRHA K., EFEÖĞLU H., KARATAŞ Ş., TÜRÜT A.  
SILICON, vol.14, no.7, pp.3493-3500, 2022 (SCI-Expanded)
- XII. **Formation of a Ti -> TiO<sub>2</sub>-graded layer and its effect on the memristive properties of TiO<sub>x</sub>(/Ti/TiO<sub>x</sub>) structures**  
Gul M., EFEÖĞLU H.  
JOURNAL OF MATERIALS SCIENCE-MATERIALS IN ELECTRONICS, vol.33, no.10, pp.7423-7434, 2022 (SCI-Expanded)
- XIII. **Effect of the Al<sub>2</sub>O<sub>3</sub> interfacial layer thickness on the measurement temperature-induced I-V characteristics in Au/Ti/Al<sub>2</sub>O<sub>3</sub>/n-GaAs structures**  
TÜRÜT A., Karabulut A., EFEÖĞLU H.  
JOURNAL OF MATERIALS SCIENCE-MATERIALS IN ELECTRONICS, vol.32, no.17, pp.22680-22688, 2021 (SCI-Expanded)
- XIV. **AN APPLICATION of R-HiPIMS METHOD for TiO<sub>2</sub>-AND TiO<sub>2</sub>:Cu-BASED MEMRISTORS: CONTROLLING Cu DOPING USING DC PULSE METHOD**  
Arashloo B. A., EFEÖĞLU H.  
Surface Review and Letters, vol.28, no.2, 2021 (SCI-Expanded)
- XV. **Temperature dependence of electrical parameters of the Cu/n-Si metal semiconductor Schottky structures**  
BAKKALOĞLU Ö. F., EJDERRHA K., EFEÖĞLU H., KARATAŞ Ş., TÜRÜT A.  
JOURNAL OF MOLECULAR STRUCTURE, vol.1224, 2021 (SCI-Expanded)
- XVI. **Single-step, large-area, variable thickness sputtered WS<sub>2</sub> film-based field effect transistors**  
Acar M., Mobtakeri S., Efeöglu H., Ertuğrul M., Gür E.  
CERAMICS INTERNATIONAL, vol.46, no.17, pp.26854-26860, 2020 (SCI-Expanded)
- XVII. **Characterization of electrical transport and properties of an Al/porous Si (PS)/p-Si/Al heterojunction**  
GÜLNAHAR M., KARACALI T., EFEÖĞLU H.  
Journal of Alloys and Compounds, vol.797, pp.859-864, 2019 (SCI-Expanded)
- XVIII. **The Analytical Investigation of Quantum Capacitance on Graphene Oxide Based Memristor**  
Arashloo B. A., EFEÖĞLU H., Ahmadi M. T.  
JOURNAL OF NANOELECTRONICS AND OPTOELECTRONICS, vol.14, no.8, pp.1083-1087, 2019 (SCI-Expanded)
- XIX. **The current-voltage characteristics of the ferroelectric p-YMnO<sub>3</sub> thin film/bulk p-Si heterojunction over a broad measurement temperature range**  
TÜRÜT A., COŞKUN M., COŞKUN F. M., POLAT Ö., DURMUŞ Z., Caglar M., EFEÖĞLU H.  
JOURNAL OF ALLOYS AND COMPOUNDS, vol.782, pp.566-575, 2019 (SCI-Expanded)
- XX. **ZnO and ZnO<sub>1-x</sub> based thin film memristors: The effects of oxygen deficiency and thickness in resistive switching behavior**  
GÜL F., EFEÖĞLU H.  
CERAMICS INTERNATIONAL, vol.43, no.14, pp.10770-10775, 2017 (SCI-Expanded)
- XXI. **Deposition of ZnO thin films by RF&DC magnetron sputtering on silicon and porous-silicon substrates for pyroelectric applications**  
Cicek K., KARACALI T., EFEÖĞLU H., Cakmak B.  
SENSORS AND ACTUATORS A-PHYSICAL, vol.260, pp.24-28, 2017 (SCI-Expanded)
- XXII. **Electrical characteristics of atomic layer deposited Au/Ti/Al<sub>2</sub>O<sub>3</sub>/n-GaAs MIS structures over a wide measurement temperature**  
TURUT A., KARABULUT A., EFEÖĞLU H.  
JOURNAL OF OPTOELECTRONICS AND ADVANCED MATERIALS, vol.19, pp.424-433, 2017 (SCI-Expanded)

- XXIII. **On the studies of capacitance-voltage-temperature and deep level characteristics of an Au/p-GaTe Schottky diode**  
GÜLNAHAR M., EFEOĞLU H., Sahin M.  
JOURNAL OF ALLOYS AND COMPOUNDS, vol.694, pp.1019-1025, 2017 (SCI-Expanded)
- XXIV. **Bipolar resistive switching and conduction mechanism of an Al/ZnO/Al-based memristor**  
GÜL F., EFEOĞLU H.  
SUPERLATTICES AND MICROSTRUCTURES, vol.101, pp.172-179, 2017 (SCI-Expanded)
- XXV. **Resistive switching of reactive sputtered TiO<sub>2</sub> based memristor in crossbar geometry**  
EFEOĞLU H., Gullulu S., Karacali T.  
APPLIED SURFACE SCIENCE, vol.350, pp.10-13, 2015 (SCI-Expanded)
- XXVI. **Characterization of Porous Silicon Fabry-Perot Optical Sensors for Reflectivity and Transmittivity Measurements**  
Hasar U. C., ÖZBEK İ. Y., ÇAVUŞOĞLU B., KARACALI T., EFEOĞLU H., ERTUĞRUL M., Barroso J. J.  
IEEE JOURNAL OF SELECTED TOPICS IN QUANTUM ELECTRONICS, vol.21, no.4, 2015 (SCI-Expanded)
- XXVII. **Porous Si Based Al Schottky Structures on p(+)-Si: A Possible Way for Nano Schottky Fabrication**  
GÜLNAHAR M., KARACALI T., EFEOĞLU H.  
ELECTROCHIMICA ACTA, vol.168, pp.41-49, 2015 (SCI-Expanded)
- XXVIII. **Identification of Gases by Porous Optical Sensors Using Reflectivity Difference and Wavelength Shift**  
Hasar U. C., ÖZBEK İ. Y., ÇAVUŞOĞLU B., KARACALI T., EFEOĞLU H., ERTUĞRUL M., Barroso J. J.  
IEEE PHOTONICS TECHNOLOGY LETTERS, vol.27, no.6, pp.596-599, 2015 (SCI-Expanded)
- XXIX. **THE CURRENT-VOLTAGE CHARACTERISTICS OF THE Au/MBE n-GaAs SCHOTTKY DIODES IN A WIDE TEMPERATURE RANGE**  
EFEOĞLU H., TÜRÜT A.  
INTERNATIONAL JOURNAL OF MODERN PHYSICS B, vol.27, no.19, 2013 (SCI-Expanded)
- XXX. **Temperature dependent I-V characteristics of an Au/n-GaAs Schottky diode analyzed using Tung's model**  
Korucu D., TÜRÜT A., EFEOĞLU H.  
PHYSICA B-CONDENSED MATTER, vol.414, pp.35-41, 2013 (SCI-Expanded)
- XXXI. **Novel Design of Porous Silicon Based Sensor for Reliable and Feasible Chemical Gas Vapor Detection**  
KARACALI T., Hasar U. C., ÖZBEK İ. Y., ORAL E. A., EFEOĞLU H.  
JOURNAL OF LIGHTWAVE TECHNOLOGY, vol.31, no.2, pp.295-305, 2013 (SCI-Expanded)
- XXXII. **Evaluation of lateral barrier height of inhomogeneous photolithography-fabricated Au/n-GaAs Schottky barrier diodes from 80 K to 320 K**  
Korucu D., EFEOĞLU H., Turut A., Altindal S.  
MATERIALS SCIENCE IN SEMICONDUCTOR PROCESSING, vol.15, no.5, pp.480-485, 2012 (SCI-Expanded)
- XXXIII. **The effect of silicon loss and fabrication tolerance on spectral properties of porous silicon Fabry-Perot cavities in sensing applications**  
Hasar U., Özbek İ. Y., Oral E. A., Karacali T., Efeoğlu H.  
Optics Express, vol.20, no.20, pp.22208-22223, 2012 (SCI-Expanded)
- XXXIV. **Multiple-barrier distribution behavior of Mo/p-GaTe fabricated with sputtering**  
GÜLNAHAR M., EFEOĞLU H.  
JOURNAL OF ALLOYS AND COMPOUNDS, vol.509, no.27, pp.7317-7323, 2011 (SCI-Expanded)
- XXXV. **Anodization of aluminium thin films on p(++)Si and annihilation of strong luminescence from Al<sub>2</sub>O<sub>3</sub>**  
EFEOĞLU H., KARACALI T., Meral K., ERDOĞAN I. Y., ONGANER Y.  
JOURNAL OF LUMINESCENCE, vol.130, no.1, pp.157-162, 2010 (SCI-Expanded)
- XXXVI. **Single and Double Fabry-Perot Structure Based on Porous Silicon for Chemical Sensors**  
KARACALI T., ALANYALIOĞLU M., EFEOĞLU H.  
IEEE SENSORS JOURNAL, vol.9, no.12, pp.1667-1672, 2009 (SCI-Expanded)
- XXXVII. **Double barrier nature of Au/p-GaTe Schottky contact: Linearization of Richardson plot**  
GÜLNAHAR M., EFEOĞLU H.

- SOLID-STATE ELECTRONICS, vol.53, no.9, pp.972-978, 2009 (SCI-Expanded)
- XXXVIII. **Temperature-dependent current-voltage characteristics of the Au/n-InP diodes with inhomogeneous Schottky barrier height**  
Cimilli F. E., SAĞLAM M., EFEOĞLU H., Turut A.  
PHYSICA B-CONDENSED MATTER, vol.404, pp.1558-1562, 2009 (SCI-Expanded)
- XXXIX. **Electrodeposited ZnCoNi alloys**  
KARAHAN İ. H., EFEOĞLU H., BAKKALOĞLU Ö. F.  
OPTOELECTRONICS AND ADVANCED MATERIALS-RAPID COMMUNICATIONS, vol.3, no.3, pp.181-184, 2009 (SCI-Expanded)
- XL. **Temperature-dependent current-voltage and capacitance-voltage characteristics of the Ag/n-InP/In Schottky diodes**  
Cimilli F. E., EFEOĞLU H., SAĞLAM M., Tueruet A.  
JOURNAL OF MATERIALS SCIENCE-MATERIALS IN ELECTRONICS, vol.20, no.2, pp.105-112, 2009 (SCI-Expanded)
- XLI. **Electrical transport properties of p-GaTe grown by directional freezing method**  
EFEOĞLU H., KARACALI T., ABAY B., YOGURTÇU Y.  
Semiconductor Science and Technology, vol.19, no.3, pp.523-530, 2004 (SCI-Expanded)
- XLII. **Temperature dependence of reverse bias capacitance-voltage characteristics of Sn/p-GaTe Schottky diodes**  
COSKUN C., Aydogan S., Efeoglu H.  
SEMICONDUCTOR SCIENCE AND TECHNOLOGY, vol.19, no.2, pp.242-246, 2004 (SCI-Expanded)
- XLIII. **A simple method producing shadow masks used in electrical characterization techniques**  
COŞKUN C., Efeoglu H.  
INSTRUMENTS AND EXPERIMENTAL TECHNIQUES, vol.46, no.3, pp.410-412, 2003 (SCI-Expanded)
- XLIV. **Temperature dependence of current-voltage characteristics of Sn/p-GaTe Schottky diodes**  
COŞKUN C., Biber M., EFEOĞLU H.  
Applied Surface Science, vol.211, pp.360-366, 2003 (SCI-Expanded)
- XLV. **Barrier characteristics of Cd/p-GaTe Schottky diodes based on I-V-T measurements**  
Abay B., ÇANKAYA G., GÜDER H. S., Efeoglu H., YOĞURTÇU Y. K.  
SEMICONDUCTOR SCIENCE AND TECHNOLOGY, vol.18, no.2, pp.75-81, 2003 (SCI-Expanded)
- XLVI. **Formation of low and stable ohmic contacts to GaTe layered crystal**  
COŞKUN C., Efeoglu H.  
SEMICONDUCTOR SCIENCE AND TECHNOLOGY, vol.18, no.1, pp.23-27, 2003 (SCI-Expanded)
- XLVII. **Aging of porous silicon and the origin of blue shift**  
KARACALI T., ÇAKMAK B., EFEOĞLU H.  
Optics Express, vol.11, no.10, pp.1237-1242, 2003 (SCI-Expanded)
- XLVIII. **Anharmonicity in GaTe layered crystals**  
AYDINLI A., Gasanly N., Uka A., EFEOĞLU H.  
CRYSTAL RESEARCH AND TECHNOLOGY, vol.37, no.12, pp.1303-1309, 2002 (SCI-Expanded)
- XLIX. **Low-temperature visible photoluminescence spectra of Tl<sub>2</sub>GaInSe<sub>4</sub> layered crystals**  
ABAY B., EFEOĞLU H., YOĞURTÇU Y. K., ALİEVA M.  
SEMICONDUCTOR SCIENCE AND TECHNOLOGY, vol.16, no.9, pp.745-749, 2001 (SCI-Expanded)
- L. **Solvent effect on the ground and excited state dipole moments of fluorescein**  
ACEMIOĞLU B., ARIK M., EFEOĞLU H., Onganer Y.  
JOURNAL OF MOLECULAR STRUCTURE-THEOCHEM, vol.548, pp.165-171, 2001 (SCI-Expanded)
- LI. **Photoluminescence characterization of GaTe single crystals**  
Güder H., ABAY B., EFEOĞLU H., Yoğurtçu Y.  
Journal of Luminescence, vol.93, no.3, pp.243-248, 2001 (SCI-Expanded)
- LII. **Temperature dependence of the optical energy gap and Urbach-Martienssen's tail in the absorption spectra of the layered semiconductor Tl<sub>2</sub>GaInSe<sub>4</sub>**  
ABAY B., Güder H., EFEOĞLU H., Yoğurtçu Y.  
Journal of Physics and Chemistry of Solids, vol.62, no.4, pp.747-752, 2001 (SCI-Expanded)

- LIII. **Urbach Martienssen Tails in the Absorption Spectra of Layered Ternary Semiconductor TlGaS<sub>2</sub>**  
ABAY B., GÜDER H. S., EFEOĞLU H., YOĞURTÇU Y. K.  
Physica Status Solidi B-Basic Solid State Physics, vol.227, pp.469-476, 2001 (SCI-Expanded)
- LIV. **Current-voltage and capacitance-voltage characteristics of metallic polymer/InSe(:Er) Schottky contacts**  
ABAY B., ONGANER Y., SAĞLAM M., EFEOĞLU H., Türüt A., Yoğurtçu Y.  
Microelectronic Engineering, vol.51, pp.689-693, 2000 (SCI-Expanded)
- LV. **Excitonic Absorption and Urbach Martienssen s Tails in Gd Doped and Undoped p type GaSe**  
ABAY B., GÜDER H. S., EFEOĞLU H., YOĞURTÇU Y. K.  
Semiconductor Science And Technology, vol.15, pp.535-541, 2000 (SCI-Expanded)
- LVI. **Effect of hydrostatic pressure on the characteristic parameters of Au/n-GaAs Schottky-barrier diodes**  
ÇANKAYA G., UÇAR N., Ayyildiz E., Efeoglu H., Turut A., Tuzemen S., YOĞURTÇU Y. K.  
PHYSICAL REVIEW B, vol.60, no.23, pp.15944-15947, 1999 (SCI-Expanded)
- LVII. **Magnetic studies on electrodeposited Cu<sub>1-x</sub>Co<sub>x</sub> alloy films**  
Bakkaloğlu Ö., Karahan I., EFEOĞLU H., YILDIRIM M., ÇEVİK U., Yoğurtcu Y.  
Journal of Magnetism and Magnetic Materials, vol.190, no.3, pp.193-198, 1998 (SCI-Expanded)
- LVIII. **Urbach-Martienssen tails in Er-doped and undoped n-type InSe**  
ABAY B., Güder H., EFEOĞLU H., Yoğurtçu Y.  
Physica B: Condensed Matter, vol.254, pp.148-155, 1998 (SCI-Expanded)
- LIX. **Influence of temperature and phase transitions on the Urbach's tails of absorption spectra for TlInS<sub>2</sub> single crystals**  
Abay B., GÜDER H. S., Efeoglu H., YOĞURTÇU Y. K.  
JOURNAL OF APPLIED PHYSICS, vol.84, no.7, pp.3872-3879, 1998 (SCI-Expanded)
- LX. **Thermal stability of Cr-Ni-Co alloy Schottky contacts on MBE n-GaAs**  
Turut A., GÜMÜŞ A., Sağlam M., Tuzemen S., Efeoglu H., YALÇIN N., MİSSOUS M.  
SEMICONDUCTOR SCIENCE AND TECHNOLOGY, vol.13, no.7, pp.776-780, 1998 (SCI-Expanded)
- LXI. **Low-temperature photoluminescence of n-InSe layer semiconductor crystals**  
ABAY B., EFEOĞLU H., Yoğurtçu Y.  
Materials Research Bulletin, vol.33, no.9, pp.1401-1410, 1998 (SCI-Expanded)
- LXII. **Characteristics of metallic polymer and Au Schottky contacts on cleaved surfaces of InSe(:Er).**  
ABAY B., ONGANER Y., SAĞLAM M., EFEOĞLU H., TURUT A., YOĞURTÇU Y. K.  
SOLID-STATE ELECTRONICS, vol.41, no.6, pp.924-926, 1997 (SCI-Expanded)
- LXIII. **Influences of thermal annealing, the electrolyte pH, and current density on the interface state density distribution of anodic MOS structures**  
SAĞLAM M., TURUT A., Nuhoğlu Ç., EFEOĞLU H., Kılıçoğlu T., EBEOĞLU M. A.  
APPLIED PHYSICS A-MATERIALS SCIENCE & PROCESSING, vol.65, no.1, pp.33-37, 1997 (SCI-Expanded)
- LXIV. **Influences of thermal annealing, the electrolyte pH, and current density on the interface state density distribution of anodic MOS structures**  
SAĞLAM M., TURUT A., Nuhoğlu Ç., EFEOĞLU H., Kılıçoğlu T., EBEOĞLU M. A.  
APPLIED PHYSICS A-MATERIALS SCIENCE, vol.65, pp.33-37, 1997 (SCI-Expanded)
- LXV. **Characteristics of metallic polymer and Au Schottky contacts on cleaved surfaces of InSe(:Er)**  
ABAY B., ONGANER Y., SAĞLAM M., EFEOĞLU H., TURUT A., YOĞURTÇU Y. K.  
SOLID-STATE ELECTRONICS, vol.41, no.6, pp.924-926, 1997 (SCI-Expanded)
- LXVI. **Temperature dependence of galvanomagnetic properties for Er-doped and undoped n-type InSe**  
YILDIRIM M., GÜRBULAK B., ABAY B., EFEOĞLU H., TÜZEMEN S., YOĞURTÇU Y. K.  
JOURNAL OF APPLIED PHYSICS, vol.80, no.8, pp.4437-4441, 1996 (SCI-Expanded)
- LXVII. **Electrothermal investigation of the switching effect in p-type TlInSe<sub>2</sub>, TlInTe<sub>2</sub>, and TlGaTe<sub>2</sub>, chain chalcogenide semiconductors**  
Abay B., Gurbulak B., Yildirim M., Efeoglu H., Tuzemen S., YOĞURTÇU Y. K.  
JOURNAL OF ELECTRONIC MATERIALS, vol.25, no.7, pp.1054-1059, 1996 (SCI-Expanded)

- LXVIII. **Series resistance calculation for the metal-insulator-semiconductor Schottky barrier diodes**  
Saglam M., Ayyıldız E., GÜMÜŞ A., Turut A., Efeoglu H., Tuzemen S.  
APPLIED PHYSICS A-MATERIALS SCIENCE & PROCESSING, vol.62, no.3, pp.269-273, 1996 (SCI-Expanded)
- LXIX. **Temperature dependence of magnetoresistance in neutron-irradiated and unirradiated high resistivity p-type silicon**  
YILDIRIM M., EFEOĞLU H., ABAY B., YOĞURTCU Y. K.  
PHYSICA STATUS SOLIDI A-APPLIED RESEARCH, vol.153, no.2, pp.473-480, 1996 (SCI-Expanded)
- LXX. **Electrothermal investigation of the switching phenomena in p-type TlInSe<sub>2</sub> single crystals**  
Abay B., Gurbulak B., Yildirim M., Efeoglu H., YOĞURTCU Y. K.  
PHYSICA STATUS SOLIDI A-APPLIED RESEARCH, vol.153, no.1, pp.145-151, 1996 (SCI-Expanded)
- LXXI. **Effect of series resistance on the forward current-voltage characteristics of Schottky diodes in the presence of interfacial layer**  
Ayyıldız E., Türüt A., EFEOĞLU H., TÜZEMEN S., SAĞLAM M., Yoğurtçu Y. K.  
Solid-State Electronics, vol.39, no.1, pp.83-87, 1996 (SCI-Expanded)
- LXXII. **High barrier metallic polymer/p-type silicon Schottky diodes**  
ONGANER Y., SAĞLAM M., Türüt A., EFEOĞLU H., TÜZEMEN S.  
Solid-State Electronics, vol.39, no.5, pp.677-680, 1996 (SCI-Expanded)
- LXXIII. **Interpreting the nonideal reverse bias C-V characteristics and importance of the dependence of Schottky barrier height on applied voltage**  
TURUT A., SAĞLAM M., EFEOĞLU H., Yalçın N., YILDIRIM M., ABAY B.  
PHYSICA B-CONDENSED MATTER, vol.205, pp.41-50, 1995 (SCI-Expanded)
- LXXIV. **INTERPRETING THE NONIDEAL REVERSE BIAS C-V CHARACTERISTICS AND IMPORTANCE OF THE DEPENDENCE OF SCHOTTKY-BARRIER HEIGHT ON APPLIED VOLTAGE**  
TURUT A., SAĞLAM M., EFEOĞLU H., Yalçın N., YILDIRIM M., ABAY B.  
PHYSICA B, vol.205, no.1, pp.41-50, 1995 (SCI-Expanded)
- LXXV. **Polyindole-based Schottky diode**  
KÖLELİ F., SAĞLAM M., TURUT A., EFEOĞLU H.  
TURKISH JOURNAL OF CHEMISTRY, vol.18, pp.22-27, 1994 (SCI-Expanded)
- LXXVI. **Polyindole-based Schottky diode**  
KÖLELİ F., SAĞLAM M., TURUT A., EFEOĞLU H.  
TURKISH JOURNAL OF CHEMISTRY, vol.18, pp.22-27, 1994 (SCI-Expanded)
- LXXVII. **Structural defects and their electrical activity in germanium implanted silicon**  
Zhang J., Fan T., Gwilliam R., Hemment P., Wen J., Qian Y., Efeoglu H., Evans J., Peaker A.  
Nuclear Inst. and Methods in Physics Research, B, vol.74, pp.127-130, 1993 (SCI-Expanded)
- LXXVIII. **The impact of lattice dilation on deep states in MBE GaAs**  
POOLE I., Efeoglu H., Singer K., Peaker A.  
Journal of Crystal Growth, vol.127, pp.703-706, 1993 (SCI-Expanded)

## Articles Published in Other Journals

- I. **Copper doping effect on the electrical characteristics of TiO<sub>2</sub> based Memristor**  
Arashloo B. A., EFEOĞLU H.  
Brilliant Engineering, vol.2, no.1, pp.19-24, 2021 (Peer-Reviewed Journal)
- II. **Thermal sensitivity from current-voltage-measurement temperature characteristics in Au/n-GaAs Schottky contacts**  
TÜRÜT A., EFEOĞLU H.  
TURKISH JOURNAL OF PHYSICS, vol.45, no.5, pp.268-280, 2021 (ESCI)
- III. **2D photoluminescence mapping of porous silicon using confocal technique**  
ABUŞOĞLU A., KARACALI T., EFEOĞLU H.  
JOURNAL OF OPTICS-INDIA, vol.48, no.2, pp.214-219, 2019 (Peer-Reviewed Journal)



- IV. **Influence of Al<sub>2</sub>O<sub>3</sub> barrier on the interfacial electronic structure of Au/Ti/n-GaAs structures**  
Karabulut A., EFEOĞLU H., TÜRÜT A.  
JOURNAL OF SEMICONDUCTORS, vol.38, no.5, 2017 (ESCI)
- V. **GaTe Tabakalı Yarıiletkeni İçin Omik Kontak Optimizasyonu ve Yapısal Karakterizasyon**  
CEVDET C., EFEOĞLU H., ABAY B., GÜDER H. S., SAKIR A., KARACALI T., YOĞURTÇU Y. K.  
Fırat Üniv. Fen ve Müh. Bilimleri Dergisi, vol.13, pp.159, 2001 (Peer-Reviewed Journal)
- VI. **Effect of Hydrostatic Pressure on the Current-Voltage Characteristics of Au/p-GaSe Schottky-Barrier Diodes**  
ÇANKAYA G., ABAY B., Uçar N., EFEOĞLU H., YOĞURTÇU Y. K.  
Balkan Physics Letters, vol.2001-1, pp.64-69, 2001 (Peer-Reviewed Journal)
- VII. **GaTe Tabakalı Yarıiletkeni İçin Omik Kontak Optimizasyonu ve Yapısal Karakterizasyon**  
CEVDET C., EFEOĞLU H., ABAY B., GÜDER H. S., SAKIR A., KARACALI T., YOĞURTÇU Y. K.  
Fırat Üniv. Fen ve Müh. Bilimleri Dergisi, vol.13, pp.159, 2001 (Peer-Reviewed Journal)
- VIII. **Low Temperature Photoluminescence of GaTe ve GaTe:Er**  
GÜDER H. S., ABAY B., EFEOĞLU H., YOĞURTÇU Y. K.  
Fırat Üniv. Fen ve Müh. Bilimleri Dergisi, vol.13, pp.179, 2001 (Peer-Reviewed Journal)
- IX. **Low Temperature Near Band Edge Photoluminescence Characterisation of GaTe**  
EFEOĞLU H., Gülnahar M., ABAY B., CEVDET C., GÜDER H. S., SAKIR A., KARACALI T., YOĞURTÇU Y. K.  
Fırat Üniv. Fen ve Müh. Bilimleri Dergisi, vol.13, pp.173, 2001 (Peer-Reviewed Journal)
- X. **Electrical Characterization of Bi Doped and Undoped InSe**  
ABAY B., Aydemir U. M., GÜDER H. S., EFEOĞLU H., YOĞURTÇU Y. K.  
Balkan Physics Letters, vol.2001-1, pp.1-7, 2001 (Peer-Reviewed Journal)
- XI. **Low Temperature Near Band Edge Photoluminescence Characterisation of GaTe**  
EFEOĞLU H., Gülnahar M., ABAY B., CEVDET C., GÜDER H. S., SAKIR A., KARACALI T., YOĞURTÇU Y. K.  
Fırat Üniv. Fen ve Müh. Bilimleri Dergisi, vol.13, pp.173, 2001 (Peer-Reviewed Journal)
- XII. **Low Temperature Photoluminescence of GaTe ve GaTe:Er**  
GÜDER H. S., ABAY B., EFEOĞLU H., YOĞURTÇU Y. K.  
Fırat Üniv. Fen ve Müh. Bilimleri Dergisi, vol.13, pp.179, 2001 (Peer-Reviewed Journal)
- XIII. **Electrical Characterization of Bi Doped and Undoped InSe**  
ABAY B., Aydemir U. M., GÜDER H. S., EFEOĞLU H., YOĞURTÇU Y. K.  
Balkan Physics Letters, vol.2001-1, pp.1-7, 2001 (Peer-Reviewed Journal)
- XIV. **Electrical characterization of GaTe and GaTe:Cu Semiconductor Compounds**  
GÜDER H. S., ABAY B., SAKIR A., CEVDET C., EFEOĞLU H., YOĞURTÇU Y. K.  
Turkish J. of Physics, vol.25, no.6, pp.281, 2001 (Peer-Reviewed Journal)
- XV. **Electrical characterization of GaTe and GaTe:Cu Semiconductor Compounds**  
GÜDER H. S., ABAY B., SAKIR A., CEVDET C., EFEOĞLU H., YOĞURTÇU Y. K.  
Turkish J. of Physics, vol.25, no.6, pp.281, 2001 (Peer-Reviewed Journal)
- XVI. **Urbach–Martienssen’s Tail in Layered Semiconductor TlGaS<sub>2</sub>**  
ABAY B., GÜDER H. S., EFEOĞLU H., YOĞURTÇU Y. K.  
Turkish J. of Physics, vol.25, no.6, pp.543-549, 2001 (Peer-Reviewed Journal)
- XVII. **Magnetization Measurements on Electrodeposited Cu<sub>1-x</sub>Cox Alloy Films** 25 451 454 2001  
BAKKALOĞLU Ö. F., KARAHAN İ. H., EFEOĞLU H., YILDIRIM M., ÇEVİK U., YOĞURTÇU Y. K.  
Türk J. Phys, vol.25, pp.451-454, 2001 (Peer-Reviewed Journal)
- XVIII. **Radiative Recombination Centers in GaTe**  
GÜDER H. S., ABAY B., EFEOĞLU H., YOĞURTÇU Y. K.  
Bulgarian Journal of Physics, vol.27, no.2, pp.72-75, 2000 (Peer-Reviewed Journal)
- XIX. **Radiative Recombination Centers in GaTe**  
GÜDER H. S., ABAY B., EFEOĞLU H., YOĞURTÇU Y. K.  
Bulgarian Journal of Physics, vol.27, no.2, pp.72-75, 2000 (Peer-Reviewed Journal)
- XX. **Specific Contact Resistance Measurements on Metal-GaTe Contacts and Its Optimisation**  
CEVDET C., EFEOĞLU H., GÜDER H. S., ABAY B., SAKIR A., KARACALI T., YOĞURTÇU Y. K.

- Bulgarian Journal of Physics, vol.27, no.2, pp.80-83, 2000 (Peer-Reviewed Journal)
- XXI. **Specific Contact Resistance Measurements on Metal-GaTe Contacts and Its Optimisation**  
CEVDET C., EFEOĞLU H., GÜDER H. S., ABAY B., SAKIR A., KARACALI T., YOĞURTÇU Y. K.  
Bulgarian Journal of Physics, vol.27, no.2, pp.80-83, 2000 (Peer-Reviewed Journal)
- XXII. **Lab-PC+ and Controlling of Miniature Alloying Furnace Unit for Ohmic Contact Annealing**  
EFEOĞLU H., COŞKUN C., KARACALI T., AYDOĞAN Ş., YOĞURTÇU Y. K.  
National Inst. Conference on Measurement and Automation) , 2000 (Peer-Reviewed Journal)
- XXIII. **Specific Contact Resistance Measurement on Metal/GaTe Contacts and Its Optimisation**  
COŞKUN C., EFEOĞLU H., ABAY B., güder h. s., AYDOĞAN Ş., YOĞURTÇU Y. K.  
Proceeding Supplements of Bulgarian Journal of Physics, 2000 (Peer-Reviewed Journal)
- XXIV. **A STUDY ON TEMPERATURE DEPENDENCE OF CURRENT TRANSPORT IN P PP SI (P PP SI YAPILARINDA AKIM İLETİMİNİN SICAKLIĞA BAĞLILIĞI ÜZERİNE BİR ÇALIŞMA)**  
TÜZEMEN S., EFEOĞLU H., YALÇIN N.  
Erciyes Üniversitesi Fen Bilimleri Enstitüsü Fen Bilimleri Dergisi Volume 7 Issue 2 Pages 1222-1233, vol.7, pp.1222-1233, 1991 (Peer-Reviewed Journal)

## Books

- I. **Erbium related defects in gallium arsenide**  
AR P., F, C., EFEOĞLU H., EVANSFREEMAN J., MAUDE D., PORTAL J., P, R., KE S., SCHOLE S. A., AC W.  
in: DEFECTS IN SEMICONDUCTORS ICDS 19, Davies, G; Nazare, MH, Editor, TRANSTEC PUBLICATIONS LTD, ZURICH-UETIKON, pp.1551-1558, 1998

## Papers Published in Refereed Scientific Meetings

- I. **Memristiv effect on W/Ti/p-Si structure: Aging phenomena and one of the origin of barrier inhomogeneity**  
EFEOĞLU H.  
2nd International Congress on Semiconductor Materials and Devices (ICSMD), Ardahan, Turkey, 28 - 30 August 2018, vol.46, pp.7033-7039
- II. **Temperature dependence of interface-state density distributions in Cu/ CuO/n-type Si structures**  
KARATAŞ Ş., EJDERHA K., BAKKALOĞLU Ö. F., EFEOĞLU H., Turut A. M.  
2nd International Congress on Semiconductor Materials and Devices (ICSMD), Ardahan, Turkey, 28 - 30 August 2018, vol.46, pp.7030-7032
- III. **Memristör uygulaması için TiO<sub>2</sub> ve TiO<sub>2</sub>:Cu film büyütme oranında HiPIMS frekansının etkisi**  
EFEOĞLU H., Arashloo B. A.  
EEMKON 2019 Elektrik Elektronik Mühendisliği Konferansı, Turkey, 14 - 16 November 2019
- IV. **Growth Rate Enhancement of TiO<sub>2</sub> by R-HiPIMS and Application to Memristor Fabrication**  
ARASHLOO B. A., EFEOĞLU H., KARACALI T.  
INTERNATIONAL SYMPOSIUM ON APPLIED SCIENCES AND ENGINEERING, Erzurum, Turkey, 26 - 28 November 2018, pp.4-6
- V. **Memristiv Properties of Er<sub>2</sub>O<sub>3</sub> and Er<sub>2</sub>O<sub>3</sub>:Cu Thin films on Silicon: HiPIMS application for Cu Doping**  
EFEOĞLU H., GÜL M.  
Science and Application of Thin Films, Conference Exhibition (SATF2018), İzmir, Turkey, 17 - 21 October 2018
- VI. **Memristiv effect on W/Ti/p-Si Structure: Aging Phenomena and One of the origin of Barrier Inhomogeneity**  
EFEOĞLU H.  
2nd International Congress on Semiconductor Materials and Devices, 28 - 30 September 2018
- VII. **The investigation of current conduction mechanisms in Cu/CuO/n-type Si Structures as temperature**

**dependence**

BAKKALOĞLU Ö. F., EJDERHA K., EFEOĞLU H., TURUT A., KARATAŞ Ş.

2nd INTERNATIONAL CONGRESS ON SEMICONDUCTOR MATERIALS AND DEVICES, 28 - 30 August 2018

- VIII. **ANALYSIS OF BARRIER HEIGHT AND SERIES RESISTANCE IN Cu/CuO/n-TYPE Si STRUCTURES IN WIDE TEMPERATURE RANGE**  
KARATAŞ Ş., EJDERHA K., BAKKALOĞLU Ö. F., EFEOĞLU H., TURUT A.  
2nd INTERNATIONAL CONGRESS ON SEMICONDUCTOR MATERIALS AND DEVICES, Ardahan, Turkey, 28 - 30 August 2018
- IX. **2D Power Mapping Of N/P/P/Al Crystalline Silicon Solar Cells**  
EFEOĞLU H., ES F., ÖZERBAŞ Z. E., MAVİ A., TURAN R.  
PVCON2018, Ankara, Turkey, 4 - 06 July 2018
- X. **The Effect of Post-Annealing on XRD Pattern of DC Sputtered ZnO/SiO<sub>2</sub> Structure**  
GÜL F., EFEOĞLU H.  
8th International Advanced Technologies Symposium (IATS17), 19 - 21 October 2017
- XI. **Microcontroller Based Circuit and Software Design to Automate Czerny-Turner Type Monochromator in a Computer Aided Photoluminescence Measurement System**  
GÜL F., EFEOĞLU H.  
8th International Advanced Technologies Symposium (IATS17), 19 - 21 October 2017
- XII. **Surface modification and temperature dependence of life time of silicon solar cell**  
EFEOĞLU H., ÖZERBAŞ Z. E.  
Science and Applications of thin films Conference and exhibition, 19 - 23 September 2016
- XIII. **Detection Nonuniformity of Porous Silicon Using Confocal 2D Luminescence and Reflectance Mapping**  
ABUŞOĞLU A., KARACALI T., EFEOĞLU H.  
NanoTr-12 12th International Nanoscience and Nanotechnology Conference, 3 - 05 June 2016
- XIV. **Current configurable resistance of CeO<sub>2</sub> based memristor structures**  
EFEOĞLU H., YENGEJEH M. V., KARACALI T.  
NanoTR-12 12th International Nanoscience and Nanotechnology Conference, Gebze, Turkey, 3 - 05 June 2016
- XV. **CeO<sub>2</sub> based RRAM and resistive switching mechanism**  
YENGEJEH M. V., EFEOĞLU H.  
IPCAP2016 International Physics conference at the anatolian peak, Erzurum, Turkey, 25 - 27 February 2016
- XVI. **Modelling approach to electric field induced switching in vanadium oxide**  
YENGEJEH M. V., EFEOĞLU H.  
ipcap2016 International Physics conference at the Anatolian peak, Erzurum, Turkey, 25 - 27 February 2016
- XVII. **Life Time Measurement of Thin Film Silicon Solar Cells and Aging Effect**  
ÖZERBAŞ Z. E., ES F., TURAN R., EFEOĞLU H.  
IPCAP2016 International Physics conference at the Anatolian peak, Erzurum, Turkey, 25 - 27 February 2016
- XVIII. **The Effect of Bazal Noise Reduction Method for Improving the Limit of Detection LOD of the Microsensor on In Vivo Neurotransmitter Analysis**  
KOÇ H., GÜLŞAH K., GEYİKOĞLU M. D., MUHAMMET EMİN D., ACAR M., ÇAVUŞOĞLU B., ÖZBEK İ. Y., ORAL E. A., HACİMÜFTÜOĞLU A., SÖNMEZ E., et al.  
ELECTROTECH 2015, 2 - 04 November 2015
- XIX. **Fabrication of a New Ceramic based Microelectrode for Measurement of Neurotransmitters in the Central Nervous System**  
ACAR M., SHAMSI H., OĞUZHAN O., KOÇ H., ÖZBEK İ. Y., ÇAVUŞOĞLU B., ORAL E. A., HACİMÜFTÜOĞLU A., SÖNMEZ E., KARACALI T., et al.  
ELECTROTECH '15, 2 - 04 October 2015
- XX. **Fabrication of A New Ceramic Based Microelectrode for Measurement of Neurotransmitter In The Central Nervous System**  
Acar M., Shamsi H., Oyar O., Özbek İ. Y., Hacimüftüoğlu A., Çavuşoğlu B., Oral E. A., Karacalı T., Sönmez E., Ertuğrul M., et al.

DAKAM, Electrotech '15, III. International Electrical & Electronic Engineering and Technologies Conference, İstanbul, Turkey, 2 - 03 October 2015

- XXI. **Fabrication of a New Ceramic-based Microelectrode for Measurement of Neurotransmitters in the Central Nervous System**  
ACAR M., KOÇ H., ÖZBEK İ. Y., HACİMÜFTÜOĞLU A., ÇAVUŞOĞLU B., ORAL E. A., KARACALI T., SÖNMEZ E., ERTUĞRUL M., EFEOĞLU H.  
ELECTROTECH, 2 - 03 October 2015
- XXII. **ZnO and ZnO<sub>1-x</sub> Based Thin film memristor**  
GÜL F., EFEOĞLU H.  
11th Nanoscience and Nanotechnology Conference (NanoTR-11), Ankara, Turkey, 22 - 25 June 2015
- XXIII. **Improving the limit of detection (LOD) of microsensor used in detection of brain diseases via wavelet filter**  
KOC H., KADIHASANOGLU G., GEYIKOGLU M. D., DERTLI M. E., ÇAVUŞOĞLU B., ÖZBEK İ. Y., ORAL E. A., HACİMÜFTÜOĞLU A., HACİMÜFTÜOĞLU A., SÖNMEZ E., et al.  
2015 23rd Signal Processing and Communications Applications Conference, SIU 2015 - Proceedings, Malatya, Turkey, 16 - 19 May 2015, pp.1676-1679
- XXIV. **Improving the limit of detection (LOD) of microsensor used in detection of brain diseases via wavelet filter**  
KOC H., KADIHASANOGLU G., GEYIKOGLU M. D., DERTLI M. E., ÇAVUŞOĞLU B., ÖZBEK İ. Y., ORAL E. A., HACİMÜFTÜOĞLU A., HACİMÜFTÜOĞLU A., SÖNMEZ E., et al.  
2015 23rd Signal Processing and Communications Applications Conference, SIU 2015 - Proceedings, Malatya, Turkey, 16 - 19 May 2015, pp.1676-1679
- XXV. **Metal Oxide thin films and multilevel resistive switching**  
EFEOĞLU H., YENGEJEH M. V., TEVHİT K.  
International Semiconductor Science -Technology Conference ISSTC-2015, İzmir, Turkey, 11 - 13 May 2015
- XXVI. **Microelectrod fabrication for diagnosis and treatment of brain disorders**  
ACAR M., ACAR M., SHAMSI H., OYAR O., ÖZBEK İ. Y., HACİMÜFTÜOĞLU A., ÇAVUŞOĞLU B., ORAL E. A., KARACALI T., SÖNMEZ E., et al.  
2015 23rd Signal Processing and Communications Applications Conference, SIU 2015 - Proceedings, Malatya, Turkey, 9 - 11 May 2015, pp.2058-2061
- XXVII. **Laser based local annealing and 2D deep level characterisation of amorph silicon solar cell**  
SERPİL BOYDAŞ N., EFEOĞLU H.  
SolarTR-3 2015, Ankara, Turkey, 23 - 25 April 2015
- XXVIII. **Memory select devices for crossbar RRAM array architecture**  
YENGEJEH M. V., EFEOĞLU H.  
11th Nanoscience and nanotechnology conference (NanoTR-11), 22 - 25 June 2015
- XXIX. **New Silicon Based Multisite Microelectrode Fabrication for Neurotransmitter Concentration Detection**  
SHAMSI H., ACAR M., OYAR O., ÖZBEK İ. Y., HACİMÜFTÜOĞLU A., ORAL E. A., ÇAVUŞOĞLU B., SÖNMEZ E., KARACALI T., ERTUĞRUL M., et al.  
10th Nanoscience and Nanotechnology Conference, June 2014, İstanbul, TURKEY, Turkey, 17 - 21 July 2014
- XXX. **Konfokal Mikroskop ve 2D Fotoluminesans Haritalaması**  
ABUŞOĞLU A., KARACALI T., EFEOĞLU H.  
13. Ulusal Optik, Elektro-Optik ve Fotonik Toplantısı, Turkey, 23 September 2011
- XXXI. **Zn/Al Tabakalı Yapılarında İnce Film Sıralamasının ZnO Oluşumu Üzerine Etkisi ve UV-VIS Lüminesans Özellikleri**  
EFEOĞLU H., SALTUK M. F., KARACALI T.  
Fotonik 2009, ODTÜ, Turkey, 16 October 2009
- XXXII. **Fiber Optik Kuplajlı Gözenekli Silisyum Tabanlı Rugate Filtre Optik Kimyasal Sensör ve Lock-In Tekniği ile Organik Kimyasal Çözücü Buharı Algılamada Kullanımı**  
KARACALI T., KALELİ A., ORAL E. A., EFEOĞLU H.

- Fotonik 2009, ODTÜ, Turkey, 16 October 2009
- XXXIII. **Al Doping of ZnO Films on SiO<sub>2</sub>/Si Substrates and Band Edge Luminescence**  
EFEOĞLU H., KARACALI T., TURAN R., DOĞAN I.  
NANO-TR5 June 2009, Anadolu Üniversitesi, Turkey, 01 June 2009
- XXXIV. **Porous Si Based Al Schottky Structures on p-Si: A Possible way for Nano Schottky Fabrication**  
KARACALI T., EFEOĞLU H., GÜLNAHAR M.  
NanoTR IV Nano Bilim ve Nano Teknoloji Konferansı, Turkey, 9 - 13 June 2008
- XXXV. **Anodization of Aluminium Thin Films and Room Temperature Strong UV Luminescence from Al<sub>2</sub>O<sub>3</sub>**  
EFEOĞLU H., KARACALI T., ONGANER Y., MERAL K.  
NanoTR IV Nano Bilim ve Nano Teknoloji Konferansı 9-13 Haziran 2008, İTÜ, Turkey, 9 - 13 June 2008
- XXXVI. **İdeal Au/n-Si Schottky Yapısına Ait Kontak Engel Yüksekliğinin Deneysel Eldesi ve Gauss Dağılımı**  
EFEOĞLU H., KARACALI T., GÜLNAHAR M.  
Fotonik 2007, Aselsan, Turkey, 28 September 2007
- XXXVII. **Gözenekli Silisyumdan Oluşturulmuş Çift Fabry-Perot Yapıların Optik Kimyasal Algılayıcı Olarak İncelenmesi**  
KARACALI T., ALANYALIOĞLU M., EFEOĞLU H.  
Fotonik 2007, Aselsan, Turkey, 28 September 2007
- XXXVIII. **İdeale Yakın Au-GaAs Schottky ve Yüksek Çözünürlüklü Akım-Gerilim-Sıcaklık ( I-V-T ) Karakterizasyonu**  
EFEOĞLU H., KARACALI T., GÜLNAHAR M., ABUŞOĞLU A.  
Fotonik 2006, Koç Üniversitesi, Turkey, 15 September 2006
- XXXIX. **Chemical Sensor Application of Porous Silicon based Fabry-Perot Structures**  
KARACALI T., EFEOĞLU H., ERTUĞRUL M.  
NanoScience and NanoTechnology 2005, Turkey, 25 - 27 May 2005
- XL. **Gözenekli Silisyum Tabanlı Fabry-Perot Yapıların Anodizasyon Şartlarına Ve Yaşlanmaya Bağımlılığı**  
KARACALI T., EFEOĞLU H.  
6.Ulusal optik, elektro-optik ve fotonik çalışma toplantısı, Turkey, 10 December 2004
- XLI. **Darbeli Anodizasyon Tekniği ile Gözenekli Silisyum Tabanlı Fabry-Perot yapıların Fabrikasyonu ve Optik Karakterizasyonu**  
KARACALI T., EFEOĞLU H.  
5. Ulusal Optik, Elektro-Optik, Fotonik Çalışma Toplantısı, Turkey, 12 December 2003
- XLII. **Aging of Porous Silicon and The origin of Blue Shift**  
KARACALI T., EFEOĞLU H.  
TFD 21. Fizik Kongresi, Turkey, 11 - 14 September 2002
- XLIII. **Doğrudan Katılaştırma Yöntemi ile Büyütülmüş GaTe 'in Elektriksel Özellikleri ve Isıl İşlemin Etkisi**  
EFEOĞLU H., ABAY B., KARACALI T., AYDINLI A., YOĞURTÇU Y. K.  
TFD 21. Fizik Kongresi, Turkey, 11 - 14 September 2002
- XLIV. **The Optical Absorption Edge for Tl<sub>0.995</sub>GaPr<sub>0.005</sub>Se<sub>2</sub> and TlGaSe<sub>2</sub>**  
GÜRBULAK B., ATEŞ A., DOĞAN S., YILDIRIM M., EFEOĞLU H., TÜZEMEN S., YOĞURTÇU Y. K.  
BPU-4 Fourth General Conference of the Balkan Physical Union, Veliko Turnovo, 22-27 August 2000., 22 - 27 August 2000
- XLV. **Lab-PC and Controlling of Miniature Alloying Furnace Unit for Ohmic Contact Annealing, Proceedings-NIWeek 2000**  
EFEOĞLU H., COŞKUN C., KARACALI T., AYDOĞAN Ş., YOĞURTÇU Y. K.  
Proceedings-NIWeek 2000, (National Inst. Conference on Measurement and Automation), 1 - 04 August 2000
- XLVI. **PC Based Automation of Keithley 610C Electrometer for Current-Voltage Measurements using Lab PC.**  
EFEOĞLU H., KARACALI T., COŞKUN C., YOĞURTÇU Y. K.  
Proceedings-NIWeek 2000, (National Inst. Conference on Measurement and Automation), 1 - 04 August 2000
- XLVII. **Keithley 610C Elektrometresinin Akım-Gerilim Ölçümleri için Bilgisayar Kontrolüne Alınması**  
KARACALI T., COŞKUN C., EFEOĞLU H., YOĞURTÇU Y. K.

17. Fizik Kongresi, Turkey, 27 - 31 October 1998

XLVIII. **Hall, Rezistivite ve Magnetorezistans Ölçümleri için Enstrumantasyon**  
COŞKUN C., KARACALI T., EFEOĞLU H.

17. Fizik Kongresi, Turkey, 27 - 31 October 1998

XLIX. **Optical Assesment of Bulk and Epitaxial Structures, Optical Spectroscopy of Low Dimensional Semiconductor Structures, NATO-ASI (Advanced Study Institute), September 9-20, 1996, Bilkent University, Ankara-Antalya, (Poster Presentation).**

TÜZEMEN S., EFEOĞLU H., ABAY B., YILDIRIM M., GÜRBULAK B., YOĞURTÇU Y. K.

NATO-ASI (Advanced Study Institute), September 9-20, 1996, Bilkent University, Ankara-Antalya, , 9 - 22 September 1996

L. **LEC Tekniğiyle Büyütülmüş GaAs in Kuantum Veriminin Laser Yardımlı Anodik Oksidasyon ile Artırılması**

EFEOĞLU H., TÜZEMEN S., TURUT A., ABAY B., YILDIRIM M., GÜRBULAK B., COŞKUN C., YOĞURTÇU Y. K.

Türk Fizik Derneği 15. Fizik Kongresi 26-29 Eylül Kaş-Antalya (Sözlü bildiri), Turkey, 26 - 29 September 1995

LI. **AIIBVI ve AIIBIII Ternary Yarıiletkenlerini Büyütme Sistemi ve TlInSe2 ile TlGaSe2 Tek Kristallerinin Büyütülmesi.**

GÜRBULAK B., ABAY B., YILDIRIM M., TÜZEMEN S., EFEOĞLU H., SAĞLAM M., YOĞURTÇU Y. K.

Türk Fizik Derneği 15.Ulusal Fizik Kongresi 26-29 Eylül 1995 Kaş Antalya (Poster bildiri), Turkey, 26 - 29 September 1995

LII. **Tam Otomatik Fotoluminesans Sisteminin Dizaynı ve Yarıiletken Karakterizasyonunda Uygulaması.**

EFEOĞLU H., TÜZEMEN S., YILDIRIM M., ABAY B., TURUT A., SAĞLAM M., GÜRBULAK B., YOĞURTÇU Y. K.

Türk Fizik Derneği 15. Fizik Kongresi 26-29 Eylül 1995 Kaş-Antalya (Sözlü bildiri), Turkey, 26 - 29 September 1995

LIII. **LEC Tekniğiyle Büyütülmüş n-Tipi GaAs'xxde Galvanomagnetik Etkilerin Sıcaklığa Bağlı İncelenmesi.**

GÜRBULAK B., YILDIRIM M., ABAY B., TÜZEMEN S., EFEOĞLU H., DOĞAN S., YOĞURTÇU Y. K.

Türk Fizik Derneği 15.Ulusal Fizik Kongresi 26-29 Eylül 1995 Kaş Antalya (Poster bildiri), Turkey, 26 - 27 September 1995

LIV. **Investigation of Optic and Photoelectrical Properties of TlIn<sub>1-x</sub>GaxSe<sub>2</sub> (0 ≤ x ≤ 0.3, 0.55 ≤ x ≤ 1) Solid Solution, 10th International Conference on Ternary and Multiternary Compounds, 19-22 September, 1995, Stuttgart - Germany. (Poster Presentation).**

ABAY B., EFEOĞLU H., GÜRBULAK B., YOĞURTÇU Y. K., AGAEVA M. S., ALİEVA M., DARVİSHOV N. G., PASHAEVD A. M.

10th International Conference on Ternary and Multiternary Compounds, 19-22 September, 1995, Stuttgart - Germany, 19 - 22 September 1995

LV. **Mapping of Infra-red Absorption Centres in Layered TlGaSe<sub>2</sub>, TlGaS<sub>2</sub> and TlInS<sub>2</sub> 7-19 October, 1994 Barcelona- Spain, (Oral Presentation).**

TÜZEMEN S., GÜRBULAK B., EFEOĞLU H., YILDIRIM M., YOĞURTÇU Y. K., ABAY B.

The First International Conference on Materials for Microelectronics, 7 - 09 November 1994

LVI. **Nötronlarla Işınlanmış Yüksek Öz dirençli p-Tipi Silisyumda Enine Magnetorezistansın Sıcaklığa Bağlılığı.**

YILDIRIM M., EFEOĞLU H., GÜRBULAK B., SAĞLAM M., YOĞURTÇU Y. K.

Türk Fizik Derneği 14. Ulusal Fizik Kongresi 25-27 Ekim 1993 Yakın Doğu Üniversitesi Lefkoşa K.K.T.C. (Sözlü bildiri), Turkey, 25 - 27 October 1993

LVII. **AIBIII ve AIIBIV Ternary Yarıiletkenlerini Büyütme Sistemi ve CuInSe<sub>2</sub> Tek Kristallerinin Büyütülmesi,**

GÜRBULAK B., ABAY B., EFEOĞLU H., YOĞURTÇU Y. K., SAĞLAM M.

TFD 14. Ulusal Fizik Kongresi, 25-27 Ekim 1993, Yakın Doğu Üniversitesi, Lefkoşa, K.K.T.C., (Poster Bildiri), Turkey, 25 - 27 October 1993

## Supported Projects

- EFEÖĞLU H., AKIN Ö., Project Supported by Higher Education Institutions, Ba05Sr05TiO3 İnce Filmlerin Memristif Özelliginde Katkılama Etkisinin İncelenmesi, 2022 - 2025
- EFEÖĞLU H., Project Supported by Higher Education Institutions, ElektrikElektronik MühendisliđiNanoteknolojiKathal Elektroniđi Arařtırma Laboratuvarı Bakım Onarım Projesi, 2023 - 2024
- NADAROĞLU H., HACİMÜFTÜOĞLU A., DAŞ E., BAYRAKÇEKEN YURTCAN A., BARIŞ Ö., GÜR E., ÇOMAKLI Ö., KARAKAN M., ERTUĞRUL M., EFEÖĞLU H., et al., Project Supported by Higher Education Institutions, World Congress on Applied Nanotechnology 2021, 2021 - 2022
- EFEÖĞLU H., Project Supported by Higher Education Institutions, YARIİLETKEN AYGIT ISIL İŞLEM ÜNİTESİ, 2020 - 2022
- Karacalı T., EFEÖĞLU H., TUBITAK Project, Kokunun Görüntüye Dönüřtürülmesi İle Koku Sensörü Gerçekleřtirilmesi, 2018 - 2021
- Efeöđlu H., TUBITAK Project, Geçiř Elementi Katkılı Metal/Metal-Oksit/Metal Yapıların Memristiv Özelliklerinin Geliřtirilmesi Ve Rram Uygulaması, 2018 - 2021
- EFEÖĞLU H., Project Supported by Higher Education Institutions, MİNYATÜR ISIL İŞLEM ÜNİTESİ, 2017 - 2020
- KARACALI T., GÖR BÖLEN M., BAYRAKÇEKEN YURTCAN A., EFEÖĞLU H., Project Supported by Higher Education Institutions, PROTON GEÇİREN MEMBRAN TASARIM VE ÜRETİMİ, 2016 - 2017
- ERTUĞRUL M., KARACALI T., ÖZBEK İ. Y., ORAL E. A., ÇAVUŞOĞLU B., EFEÖĞLU H., Project Supported by Higher Education Institutions, KARBON NANOTÜPLERİN İLETKEN TEL BOYUNCA PARALEL HALE GETİRİLMESİ, 2016 - 2017
- EFEÖĞLU H., TUBITAK Project, Amorf PIN-Si İnce Film Güneř Hücrelerinde Enerji Dönüřüm Veriminin İki Boyutta Yařam Süresi Ve Rekombinasyon Merkezlerinin Dađılımları İle Karakterizasyonu, 2014 - 2017
- Küfreviođlu Ö. İ., Hacimüftüođlu A., Efeöđlu H., Ertuđrul M., Malkoç İ., řengül G., Ekinci D., Mavi A., Karacalı T., Özcan H., et al., TUBITAK Project, Beyin Hastalıklarının Tanı ve Tedavisinde Yeni Yöntem In Vivo Mikrosensör Teknolojisi, 2013 - 2017
- EFEÖĞLU H., Project Supported by Higher Education Institutions, CEO TABANLI MEMRİSTÖR YAPILARIN SIRALI REAKTİF SPUTTER İLE FABRİKASYONU VE HAFIZA ELEMANI UYGULAMASI, 2015 - 2016
- EFEÖĞLU H., TUBITAK Project, Metal Oksit Tabanlı Memristör Yapıların Sıralı Reaktif Sputter Tekniđi İle Fabrikasyonu Ve Karakterizasyonu, 2011 - 2015
- EFEÖĞLU H., Project Supported by Higher Education Institutions, REAKTİF SPUTTER TEKNİĐİ İLE METALOKSİT YAPILARIN ÜRETİMİ VE PROGRAMLANABİLİR DİRENÇ YAPIMI, 2011 - 2012
- Efeöđlu İ., Efeöđlu H., TUBITAK Project, Anodize Aluminium Oksit'in (AAO) Sıfır ve Bir Boyutlu Yapıların Fabrikasyonunda Kullanımı: ZnO Tabanlı Nano Lazerler ve Tribolojik Uygulamalar, 2005 - 2008
- EFEÖĞLU İ., ABAY B., EFEÖĞLU H., TUBITAK Project, GaTe ikili yarıiletken bileřiđinin büyüütme parametrelerinin kristal yapı üzerindeki etkilerinin yapı analizi optik ve elektriksel karakterizasyonla arařtırılması, 1999 - 2002

## Memberships / Tasks in Scientific Organizations

- MFAG Grup Yürütme Kurulu, Member of Science Committee, 2022 - Continues, Turkey
- Matematik, Fizik Arařtırma Destek Grubu (MFAG), Executive Board Member, 2021 - Continues, Turkey
- Matematik Fizik Arařtırma Grubu, Executive Board Member, 2022 - 2023, Turkey

## Metrics

- Publication: 162
- Citation (WoS): 1484
- Citation (Scopus): 1483
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- H-Index (Scopus): 22

## **Non Academic Experience**

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