

# ÇAĞLAR ÇETİNKAYA

## ASSOC. PROF.

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### International Researcher IDs

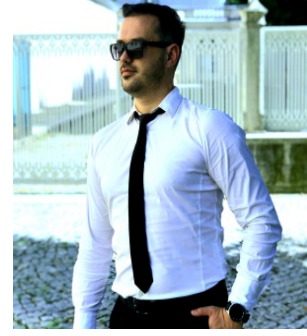
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Publons / Web Of Science ResearcherID: W-3197-2017

ScopusID: 57194853908

Yoksis Researcher ID: 275652



### Learning Knowledge

Doctorate 2016 - 2021	Istanbul University, Institute of Graduate Studies In Sciences, Fen Fakültesi Bölümü, Turkey
Postgraduate 2014 - 2016	Istanbul University, Institute of Graduate Studies In Sciences, Katıhal Fiziği Programı, Turkey
Undergraduate 2010 - 2013	Istanbul University, Faculty Of Science, Fizik Bölümü,, Turkey
Undergraduate 2008 - 2010	Karadeniz Technical University, Fen Fakültesi, Fizik Bölümü, Turkey

### Foreign Languages

English, C1 Advanced

### Certificates, Courses and Trainings

Vocational Training, SUSS MicroTec Mask Aligner MJB4, MEMS, 2017

Vocational Training, Temiz Odalar için Temizleme Kuralları, İNŞEL, 2016

Vocational Training, Temiz Odaların İşletilmesi, İNŞEL, 2016

Vocational Training, Temiz Odalar için Malzeme ve Donanım Geçiş Kuralları, İNŞEL, 2016

Vocational Training, Temiz Odalar için Kişisel Koruyucu Donanımlar ve Değişim Kuralları, İNŞEL, 2016

Vocational Training, Signatone Probe Station, Tekno-TIP Analitik Sistemler Ltd Şti, 2015

Vocational Training, Isıl Buharlaştırma İnce Film Kaplama Sistemi (Thermal Evaporator), Vaksis Ar-Ge ve Mühendislik, 2015

Vocational Training, Stylus Surface Profilometers Applications, KLA Tencor, 2015

Vocational Training, Kulicke&Soffa Wire Bonder Model 4524 by Arie Aronovich, MEMS, 2014

Vocational Training, Pfeiffer Vacuum HLT550, An-Ka Analiz ve Kalite Kontrol Cih. San. T,c. Ltd. Şti, 2014

### Dissertations

Doctorate, Fotonik kristal içeren yarı geçirgen organik güneş hücrelerinin tasarımı ve üretimi, Istanbul University, Faculty Of Science, Department Of Physics, 2021

Postgraduate, III-V Grubu Alaşım Yarıiletkenlerde Gunn Olayı'na Dayalı Işımanın İncelenmesi, Istanbul University, Institute of Graduate Studies In Sciences, Kathal Fiziği Programı, 2016

## Academic Titles / Tasks

Associate Professor 2023 - Continues	Istanbul University, Faculty Of Science, Department Of Physics
Research Assistant PhD 2021 - 2023	Istanbul University, Faculty Of Science, Department Of Physics
Research Assistant 2017 - 2021	Istanbul University, Faculty of Science, Department of Physics
Researcher 2017 - 2017	Istanbul University, Institute of Graduate Studies In Sciences, Fen Fakültesi Bölümü

## Supported Projects

- Üzar Kılıç N., Kınacı B., Çetinkaya Ç., TUBITAK Project, Bor ve Metal Katkılı ZnO İnce Film Şeklindeki Güneş Pili ve Termoelektrik Jeneratörlerden Oluşan Hibrit Sistemin Verimliliğinin Araştırılması, 2022 - 2023
- EROL A., SARCAN F., KURUOĞLU F., ÇOKDUYGULULAR E., ÇETİNKAYA Ç., DÖNMEZ Ö., NUTKU F., KARA K., AKALIN E., Project Supported by Higher Education Institutions, Characterization of temperature dependent operation of a GaInNAsbased RCEPD designed for 1.3 um, 2018 - 2018

## Awards

- Çetinkaya Ç., 2022 YILI PROF. DR. ŞEVKET ERK GENÇ BİLİM İNSANI ÖDÜLÜ, Turkish Physical Society, August 2022
- Çetinkaya Ç., Nature Official Author, Nature Portfolio, March 2022
- ÇETİNKAYA Ç., Turkish Physical Society Ozgen Berkol Dogan The Best Experimental Poster Presentation Award of The Year, Türk Fizik Derneği, September 2013
- ÇETİNKAYA Ç., Bölüm Birinciliği, İstanbul Üniversitesi Fen Fakültesi, July 2013
- ÇETİNKAYA Ç., Fakülte Birinciliği, İstanbul Üniversitesi Fen Fakültesi, June 2013

## Scholarships

Mikro ve Nanoteknoloji Doktora Bursu, YOK, 2017 - Continues

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

- Enhancement of significant colour properties through Ta<sub>2</sub>O<sub>5</sub> incorporation into ZnO–TeO<sub>2</sub> binary glasses: An effective method for purposeful utilizations in industry and technology**  
Çokduygulular E., Çetinkaya Ç., Kınacı B., Kılıç G., Tekin H. O.

OPTICAL MATERIALS, vol.135, pp.1-15, 2023 (SCI-Expanded)

2. **Enhancement of color and photovoltaic performance of semi-transparent organic solar cell via fine-tuned 1D photonic crystal**  
Çetinkaya Ç., Çokduygulular E., Kınacı B., Emik S., Akın Sönmez N., Özçelik S.  
SCIENTIFIC REPORTS, vol.12, no.1, pp.1-13, 2022 (SCI-Expanded)
3. **Efficient and high-bifacial CdTe-based solar cell enabled by functional designed dielectric/metal/dielectric transparent top contact via light management engineering**  
Çetinkaya Ç.  
OPTICAL MATERIALS, vol.133, pp.1-14, 2022 (SCI-Expanded)
4. **Highly improved light harvesting and photovoltaic performance in CdTe solar cell with functional designed 1D-photonic crystal via light management engineering**  
Çetinkaya Ç., Çokduygulular E., Kınacı B., Güzelçimen F., Özen Y., Akın Sönmez N., Özçelik S.  
SCIENTIFIC REPORTS, vol.12, no.1, pp.1-12, 2022 (SCI-Expanded)
5. **Frequency effect on electrical and dielectric performance of Au/n-GaAs structure with RF sputtering MoO<sub>3</sub> interfacial layer**  
Çetinkaya Ç.  
JOURNAL OF MATERIALS SCIENCE-MATERIALS IN ELECTRONICS, vol.33, no.20, pp.16597-16605, 2022 (SCI-Expanded)
6. **Evaluation of dielectric properties of Au/TZO/n-Si structure depending on frequency and voltage**  
Kınacı B., Bairam C., Yalçın Y., Çokduygulular E., Çetinkaya Ç., Efkere H. İ., Özçelik S.  
Journal of Materials Science: Materials in Electronics, vol.33, pp.10516-10523, 2022 (SCI-Expanded)
7. **Functional optical design of thickness-optimized transparent conductive dielectric-metal-dielectric plasmonic structure**  
Çetinkaya Ç., Çokduygulular E., Güzelçimen F., Kınacı B.  
SCIENTIFIC REPORTS, vol.12, no.1, 2022 (SCI-Expanded)
8. **A quantitative analysis of electronic transport in n- and p-type modulation-doped GaAsBi/AlGaAs quantum well structures**  
Dönmez Ö., Erol A., Çetinkaya Ç., Çokduygulular E., Aydın M., Yıldırım S., Puustinen J., Hilska J., Guina M.  
SEMICONDUCTOR SCIENCE AND TECHNOLOGY, vol.36, no.11, 2021 (SCI-Expanded)
9. **Evaluation on output parameters of the inverted organic solar cells depending on transition-metal-oxide based hole-transporting materials**  
Çetinkaya Ç., Çokduygulular E., Kınacı B., Güzelçimen F., Candan I., Efkere H. İ., Özen Y., Özçelik S.  
OPTICAL MATERIALS, vol.120, 2021 (SCI-Expanded)
10. **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)
11. **Design and fabrication of a semi-transparent solar cell considering the effect of the layer thickness of MoO<sub>3</sub>/Ag/MoO<sub>3</sub> transparent top contact on optical and electrical properties**  
Çetinkaya Ç., Çokduygulular E., Kınacı B., Güzelçimen F., Özen Y., Efkere H. İ., Candan İ., Emik S., Özçelik S.  
SCIENTIFIC REPORTS, vol.11, no.1, 2021 (SCI-Expanded)
12. **Determination of surface morphology and electrical properties of MoO<sub>3</sub> layer deposited on GaAs substrate with RF magnetron sputtering**  
ÇETİNKAYA Ç., ÇOKDUYGULULAR E., ÖZEN Y., CANDAN İ., KINACI B., ÖZÇELİK S.  
JOURNAL OF MATERIALS SCIENCE-MATERIALS IN ELECTRONICS, vol.32, no.9, pp.12330-12339, 2021 (SCI-Expanded)
13. **Effect of Annealing on the Surface Morphology and Current-Voltage Characterization of a CZO Structure Prepared by RF Magnetron Sputtering**  
Kınacı B., Çelik E. G., Çokduygulular E., Çetinkaya Ç., Yalçın Y., Efkere H. İ., Özen Y., Sonmez N. A., Özçelik S.  
SEMICONDUCTORS, vol.55, no.1, pp.28-36, 2021 (SCI-Expanded)
14. **The effect of thickness on surface structure of rf sputtered TiO<sub>2</sub> thin films by XPS, SEM/EDS, AFM**

## and SAM

Güzelçimen F., Tanören B., Çetinkaya Ç., Kaya M. D., Efkere H. İ., Özen Y., Bingöl D., Sirkeci M., Kinacı B., Ünlü M. B., et al.

VACUUM, vol.182, 2020 (SCI-Expanded)

15. **A comprehensive study on Cu-doped ZnO (CZO) interlayered MOS structure**  
Cokduygulular E., ÇETİNKAYA Ç., Yalcin Y., KINACI B.  
JOURNAL OF MATERIALS SCIENCE-MATERIALS IN ELECTRONICS, vol.31, no.16, pp.13646-13656, 2020 (SCI-Expanded)
16. **Negative capacitance phenomena in Au/SrTiO<sub>3</sub>/p-Si heterojunction structure**  
Kinacı B., Çetinkaya Ç., Cokduygulular E., Efkere H. I., Sonmez N. A., Ozcelik S.  
JOURNAL OF MATERIALS SCIENCE-MATERIALS IN ELECTRONICS, vol.31, no.11, pp.8718-8726, 2020 (SCI-Expanded)
17. **Electronic transport in n-type modulation-doped AlGaAs/GaAsBi quantum well structures: influence of Bi and thermal annealing on electron effective mass and electron mobility**  
Donmez Ö., Aydın M., Ardali S., Yildirim S., Tiras E., Nutku F., Cetinkaya Ç., Cokduygulular E., Puustinen J., Hilska J., et al.  
SEMICONDUCTOR SCIENCE AND TECHNOLOGY, vol.35, no.2, 2020 (SCI-Expanded)
18. **V-groove etched 1-eV-GaInNAs nipi solar cell**  
Muhammetgulyev A., Kinaci B., Aho A., Yalcin Y., Cetinkaya Ç., Kuruoglu F., Guina M., Erol A.  
APPLIED PHYSICS A-MATERIALS SCIENCE & PROCESSING, vol.125, no.1, 2019 (SCI-Expanded)
19. **Optical properties of n- and p-type modulation doped GaAsBi/AlGaAs quantum well structures**  
Cetinkaya C., Cokduygulular E., Nutku F., Donmez Ö., Puustinen J., Hilska J., Erol A., Guina M.  
JOURNAL OF ALLOYS AND COMPOUNDS, vol.739, pp.987-996, 2018 (SCI-Expanded)
20. **Characterization of emitted light from travelling Gunn domains in Al<sub>0.08</sub>Ga<sub>0.92</sub>As alloy based Gunn devices**  
Cetinkaya C., Mutlu S., Donmez Ö., Erol A.  
SUPERLATTICES AND MICROSTRUCTURES, vol.111, pp.744-753, 2017 (SCI-Expanded)

## Articles Published in Other Journals

1. **Theoretical Evaluation of Angle-Dependent Optical Properties of a Thin Film Solar Cell including One-Dimension Photonic Crystals**  
Çetinkaya Ç.  
GAZI UNIVERSITY JOURNAL OF SCIENCE, vol.9, no.2, pp.164-172, 2022 (Scopus)

## Books & Book Chapters

1. **Observation of Anomalous Dielectric Behavior in the Wide Temperature Range of MIS Structure with STO Interlayer**  
Çetinkaya Ç., Çokduygulular E., Kinacı B.  
in: INSAC Natural and Engineering Sciences, Doç. Dr. Gizem Mısıır, Dr. Mehmet Uzun, Editor, Duvar Yayınları, Ankara, pp.109-120, 2021

## Refereed Congress / Symposium Publications in Proceedings

1. **'Light Management Engineering' ile 1D Fotonik Kristallerin Güneş Hücrelerine Entegrasyonu**  
Çetinkaya Ç.  
İstanbul Yoğun Madde Fiziği Toplantısı 2022, İstanbul, Turkey, 26 - 27 September 2022

2. **Investigation of Semi-Transparent Properties of Cdte Solar Cell with Transparent Contacts**  
Çetinkaya Ç.  
International Conference on Academic and Scientific Studies, Elazığ, Turkey, 1 - 02 September 2022, pp.51-52
3. **Design of One-Dimension Photonic Crystal-Based Biosensor Working in Visible Region for Non-Invasiv Detection of Various Cancer and Blood Cells**  
Çetinkaya Ç.  
TURKISH PHYSICAL SOCIETY 38th INTERNATIONAL PHYSICS CONGRESS, Muğla, Turkey, 31 August - 04 September 2022, pp.201
4. **TEK BOYUTLU FOTONİK KRİSTAL TABANLI YARI-PERİYODİK FİBONACCİ FRAKTAL YAPILARININ OPTİK BİR İNCELEMESİ**  
Çetinkaya Ç.  
5. Ulusal Baskent Disiplinlerarası Bilimsel Çalışmalar Kongresi, Ankara, Turkey, 22 June 2022, pp.1
5. **INVESTIGATION of OPTICAL PROPERTIES of MgF<sub>2</sub>/WO<sub>3</sub> PHOTONIC CRYSTAL SYSTEM**  
Çetinkaya Ç.  
1st International Congress on Modern Sciences, Toskent, Uzbekistan, 10 - 11 May 2022, pp.1
6. **Electrical Properties Of Modulation Doped Bi-Containing Highly Mismatched Quantum Well Structures**  
ÇETİNKAYA Ç., ÇOKDUYGULULAR E., DÖNMEZ Ö., EROL A., NUTKU F., YILDIRIM S.  
Turkish Physical Society 34th International Physics Congress, Muğla, Turkey, 5 - 09 September 2018, vol.34, pp.273
7. **ELECTRONIC TRANSPORT IN n-type MODULATION DOPED GaInAs/GaAs and GaInNAs/GaAs QUANTUM WELL STRUCTURES**  
Rajhi A., Aydın M., ÇOKDUYGULULAR E., ÇETİNKAYA Ç., DÖNMEZ Ö., YILDIRIM S., SARCAN F., EROL A.  
Türk Fizik Derneği 34. Uluslararası Fizik Kongresi, Muğla, Turkey, 5 - 09 September 2018, pp.161
8. **EFFECT OF BI ALLOYING ON THE OPTICAL PROPERTIES OF MODULATION DOPED GAASBI/ALGAAS QUANTUM WELL STRUCTURES**  
ÇETİNKAYA Ç., ÇOKDUYGULULAR E., NUTKU F., DÖNMEZ Ö., EROL A.  
Türk Fizik Derneği 34. Uluslararası Fizik Kongresi, Muğla, Turkey, 5 - 09 September 2018, pp.273
9. **Optical and Electrical Properties of n- and p-type Modulation Doped GaAs<sub>1-x</sub>Bix/Al<sub>0.15</sub>Ga<sub>0.85</sub>As Single Quantum Well Heterostructure**  
ÇETİNKAYA Ç., ÇOKDUYGULULAR E., NUTKU F., DÖNMEZ Ö., Puustinen J., EROL A., Guina M.  
International Conference on Condensed Matter and Material Sciences, Adana, Turkey, 11 - 15 October 2017, pp.125
10. **Photoluminescence Study of GaAs/AlGaAs and GaAsBi/AlGaAs Modulation Doped Quantum Well Structures**  
ÇETİNKAYA Ç., ÇOKDUYGULULAR E., NUTKU F., DÖNMEZ Ö., Puustinen J., EROL A., Guina M.  
Türk Fizik Derneği 33. Uluslararası Fizik Kongresi, Muğla, Turkey, 6 - 10 September 2017, pp.125
11. **Optical characterization of n- and p-type modulation doped GaAsBi/AlGaAs quantum well structures**  
ÇETİNKAYA Ç., ÇOKDUYGULULAR E., NUTKU F., DÖNMEZ Ö., Puustinen J., EROL A., Guina M.  
8. International Workshop on Bismuth-Containing Semiconductors Philipps-Universitat Marburg, Marburg, Germany, 23 - 26 July 2017, pp.125
12. **Light Emission from Al<sub>0.08</sub>Ga<sub>0.92</sub>As Gunn Device**  
ÇETİNKAYA Ç., MUTLU S., DÖNMEZ Ö., EROL A.  
Nanophotonics and Micro/Nano Optics International Conference, Paris, France, 1 - 10 December 2016, pp.10
13. **Stimulated Light Emission from Gunn Domains in Fabry Pérot Al<sub>0.08</sub> Ga<sub>0.92</sub>As Gunn Device**  
ÇETİNKAYA Ç., MUTLU S., DÖNMEZ Ö., EROL A.  
Turkish Physical Society 32nd International Physics Congress, Muğla, Turkey, 6 - 10 September 2016, pp.89
14. **Electronic transport properties of p-type GaInNAs/GaAs quantum well structures**  
MUTLU S., ÇOKDUYGULULAR E., ÇETİNKAYA Ç., SARCAN F., DÖNMEZ Ö., EROL A.  
Türk Fizik Derneği 32. Uluslararası Fizik Kongresi, Muğla, Turkey, 6 - 09 September 2016, pp.125
15. **Investigation of Light Emission Based on Gunn Effect in n -type GaAs**  
ÇETİNKAYA Ç., MUTLU S., DÖNMEZ Ö., EROL A.

9th International Physics Conference of the Balkan Physical Union, İstanbul, Turkey, 24 - 27 August 2015, pp.421

16. **Electronic Transport in n- and p-type modulation doped Ga<sub>1-x</sub>In<sub>x</sub>NyAs<sub>1-y</sub> /GaAs quantum well structures**

ÇETİNKAYA Ç., DÖNMEZ Ö., EROL A., Arıkan Ç., Puustinen J., Mircea G.

30th International Physics Congress by Turkish Physical Society, Muğla, Turkey, 1 - 02 September 2013, pp.1

## Courses

Yenilenebilir Enerji, Undergraduate, 2022 - 2023

Nanoteknoloji ve Nanobilim, Undergraduate, 2022 - 2023

Fizik 1 Uygulama, Undergraduate, 2021 - 2022

Klasik Teorik Mekanik Uygulama, Undergraduate, 2021 - 2022

Düz ve Kısmi Türevli Diferansiyel Denklemler Uygulama, Undergraduate, 2020 - 2021

Kuantum Fiziği 2 Uygulama, Undergraduate, 2018 - 2019

Atom ve Molekül Fiziği Uygulama, Undergraduate, 2018 - 2019

TEBİP Fizikte Matematik Metodlar, Undergraduate, 2018 - 2019

TEBİP Modern Fizik, Undergraduate, 2018 - 2019

Elektromagnetik Teori Uygulama, Undergraduate, 2018 - 2019

Fizikte Matematik Metodlar Uygulama, Undergraduate, 2017 - 2018

Kuantum Fiziği Uygulama, Undergraduate, 2018 - 2019

## Mobility Activity

Other, Research During Graduate Education, Gazi University, Turkey, 2020 - 2020

## Metrics

Publication: 38

Citation (WoS): 148

Citation (Scopus): 154

H-Index (WoS): 7

H-Index (Scopus): 7

## Congress and Symposium Activities

International Conference on Academic and Scientific Studies, Attendee, Elazığ, Turkey, 2022

38th International Physics Congress by Turkish Physical Society, Attendee, Muğla, Turkey, 2022

5. Ulusal Baskent Disiplinlerarası Bilimsel Çalışmalar Kongresi, Attendee, Ankara, Turkey, 2022

1st International Congress on Modern Sciences, Attendee, Toskent, Uzbekistan, 2022

34rd International Physics Congress by Turkish Physical Society, Attendee, Muğla, Turkey, 2018

International Conference on Condensed Matter and Material Sciences, Attendee, Adana, Turkey, 2017

33rd International Physics Congress by Turkish Physical Society, Attendee, Muğla - Bodrum, Turkey, 2017

Nanophotonics and Micro/Nano Optics International Conference - NANOP, Attendee, Paris, France, 2016

32nd International Physics Congress by Turkish Physical Society, Attendee, Muğla - Bodrum, Turkey, 2016

9 th International Physics Conference of the Balkan Physical Union (BPU-9), Attendee, İstanbul, Turkey, 2015

31th International Physics Congress by Turkish Physical Society, Attendee, Muğla, Turkey, 2014

4th Physics Workshop, Istanbul University, Attendee, Turkey, 2014

30th International Physics Congress by Turkish Physical Society, Attendee, Turkey, 2013

Novel Gain Materials and Devices Based on III-V-N/Bi Compounds, Attendee, Turkey, 2013  
2nd Physics Workshop, Istanbul University, Attendee, İstanbul, Turkey, 2012  
1st Physics Workshop, Istanbul University, Attendee, İstanbul, Turkey, 2011  
27th International Physics Congress by Turkish Physical Society, Attendee, İstanbul, Turkey, 2010

## 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, Electronic transport in condensed matter, Natural Sciences