

MD İDRİS CANDAN

Personal Information

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Biography

İdris Candan was born at Payas-Hatay, Turkey. He received his Bs degree in Physics Department from [Kocaeli University](#) in 2004. İdris got his Ms. degree in December 2009 and PhD. degree in February 2016 from [Physics Department](#) of [Middle East Technical University \(METU\)](#). His Ms thesis was on "*Growth and Characterization of $CuIn_{1-x}Ga_xSe_2$ (CIGS) Thin Films For Solar Cell Structure*" and PhD thesis was on "*Investigation on The Incorporation of Quantum Dot Thin Film Layers in The Organic and Inorganic Solar Cell Structures*". He worked as a Research Assistant at [METU](#) and as a researcher at [The Center for Solar Energy Research and Applications \(GÜNAM\)](#).

He joined the [Device Research Laboratory \(DRL\)](#) in the [Electrical Engineering Department](#) at [University of California, Los Angeles \(UCLA\)](#) on February 2014 as a Visiting Scholar (Visiting Researcher) till January 31, 2015. He worked at [Western Institute of Nanoelectronics \(WIN\)](#) at [UCLA](#) as a Development Engineer from February 1, 2015 through May 28, 2015. His research interests include thin film solar cell, *nanomaterials for flexible electronics and energy converting devices and diluted magnetic semiconductor device*.

He has worked as a Research Assistant (Dr.) at [Kocaeli University](#) since June 2016

Education Information

Doctorate, Orta Doğu Teknik Üniversitesi, Fen Edebiyat Fakültesi, Fizik, Turkey 2010 - 2016

Post Graduate, Middle East Technical University, Faculty Of Arts And Sciences, Department Of Physics, Turkey 2006 - 2009

Under Graduate, Kocaeli Üniversitesi, Fen Edebiyat Fakültesi, Fizik, Turkey 2000 - 2004

Foreign Languages

English, C2 Proficiency

Research Areas

Physics, Condensed Matter 1: Structural, Mechanical and Thermal Properties, Surfaces, Interfaces, Thin Films and Nanosystems, Intensive Article 2: Electronic Structure, Electric, Magnetic and Optical Properties, Electronic structure of bulk material, Magnetic Properties and Materials, Photochemistry of Organics, Natural Sciences

Academic Titles / Tasks

Research Assistant PhD, Kocaeli University, Fen Edebiyat Fakültesi, Fizik, 2016 - Continues

Research Assistant, Orta Doğu Teknik Üniversitesi, Fen Edebiyat Fakültesi, Fizik, 2004 - 2016

Expert, University Of California, Los Angeles, Henry Samueli School Of Engineering, Electrical Engineering, 2015 - 2015

Other, University Of California, Los Angeles, Henry Samueli School Of Engineering, Electrical Engineering, 2014 - 2015

Courses

Fizik II, Under Graduate, 2017 - 2018, 2019 - 2020, 2020 - 2021

Fizik I, Under Graduate, 2019 - 2020, 2020 - 2021

Fizik II, Under Graduate, 2019 - 2020, 2020 - 2021

Fizik II, Under Graduate, 2019 - 2020, 2020 - 2021

Fizik I, Under Graduate, 2019 - 2020, 2020 - 2021

Optik Laboratuvarı, Under Graduate, 2019 - 2020

Mesleki İngilizce I, Under Graduate, 2019 - 2020

Fizik II, Under Graduate, 2017 - 2018

Fizik I, Under Graduate, 2017 - 2018

Articles Published in Journals That Entered SCI, SSCI and AHCI Indexes

- I. **Comparison of TiO₂ and ZnO electron selective layers on the inverted-type polymer solar cells**
Candan İ., Özen Y.
Journal Of Materials Science-Materials In Electronics, vol.78, no.6, pp.3117-3129, 2021 (Journal Indexed in SCI)
- II. **Determination of surface morphology and electrical properties of MoO₃ layer deposited on GaAs substrate with RF magnetron sputtering**
Çetinkaya Ç., Çokduygular E., Özen Y., Candan İ., Kinacı B., Özçelik S.
Journal Of Materials Science-Materials In Electronics, vol.4, pp.1-10, 2021 (Journal Indexed in SCI)
- III. **SnO₂ interlayer effects on the inverted polymer solar cells**
Özen Y., Candan İ.
Chemical Physics Letters, vol.740, pp.1-5, 2020 (Journal Indexed in SCI)
- IV. **PbS quantum dot enhanced p-CIGS/n-Si heterojunction diode**
Candan İ., Parlak M., Ercelebi C.
JOURNAL OF MATERIALS SCIENCE-MATERIALS IN ELECTRONICS, vol.30, pp.2127-2135, 2019 (Journal Indexed in SCI)
- V. **Layer-by-layer hybrid chemical doping for high transmittance uniformity in graphene-polymer flexible transparent conductive nanocomposite**
Biswas C., Candan I., Alaskar Y., Qasem H., Zhang W., Stieg A. Z. , Xie Y., Wang K. L.
SCIENTIFIC REPORTS, vol.8, 2018 (Journal Indexed in SCI)
- VI. **Active carbon/graphene hydrogel nanocomposites as a symmetric device for supercapacitors**
Ates M., Cinar D., Caliskan S., Gecgel U., Uner O., Bayrak Y., Candan I.
FULLERENES NANOTUBES AND CARBON NANOSTRUCTURES, vol.24, pp.427-434, 2016 (Journal Indexed in SCI)
- VII. **Device behavior of an In/p-Ag(Ga,In)Te-2/n-Si/Ag heterojunction diode**
COŞKUN E., Gullu H. H. , Candan I., Bayrakli O., PARLAK M., Ercelebi C.
MATERIALS SCIENCE IN SEMICONDUCTOR PROCESSING, vol.34, pp.138-145, 2015 (Journal Indexed in SCI)
- VIII. **Investigation of structural and optical parameters of Cu-Ag-In-Se thin films deposited by thermal evaporation method**
Gullu H. H. , Candan I., COŞKUN E., PARLAK M.
OPTİK, vol.126, pp.1578-1583, 2015 (Journal Indexed in SCI)
- IX. **Structural and optical properties of Zn-In-Te thin films deposited by thermal evaporation technique**
Gullu H. H. , Bayrakli O., Candan I., COŞKUN E., PARLAK M.
JOURNAL OF ALLOYS AND COMPOUNDS, vol.566, pp.83-89, 2013 (Journal Indexed in SCI)

Articles Published in Other Journals

- I. **PbS Kuantum Nokta İnce Filmlerin Üretilmesi ve Karakterizasyonu**
Candan İ.
Gazi Üniversitesi Fen Bilimleri Dergisi Part C: Tasarım ve Teknoloji, vol.8, no.4, pp.1021-1033, 2020 (Refereed Journals of Other Institutions)
- II. **P3HT:PCBM Fotoaktif Tabanlı Tersine Çevrilmiş Polimer Güneş Hücrelerinin Üretimi ve Karakterizasyonu**
CANDAN İ., ÖZEN Y.
Gazi Üniversitesi Fen Bilimleri Dergisi Part C: Tasarım ve Teknoloji, vol.7, pp.916-926, 2019 (Other Refereed National Journals)
- III. **Comparative Study on The Properties of CuInSe₂ and CuGaSe₂ Thin Films**
Candan İ., Güllü H. H.
Avrupa Bilim ve Teknoloji Dergisi, no.15, pp.77-85, 2019 (Other Refereed National Journals)

Refereed Congress / Symposium Publications in Proceedings

- I. **Morphological investigation of polymer solar cell layers using atomic force microscopy and Raman spectroscopy**
Candan İ.
International Conference on Advanced Materials Science & Engineering and High Tech Devices Applications; Exhibition (ICMATSE 2020), Ankara, Turkey, 2 - 04 October 2020, pp.184-185
- II. **Effects of Metal Oxide Layer Deposition Technique on Organic Polymer Solar Cells Efficiency**
Candan İ.
4th. International Marmara Sciences Congress, IMASCON 2020 Spring, Kocaeli, Turkey, 19 - 20 June 2020, pp.1
- III. **PbS Quantum Dots Layer Effect on Ag/n-Si/p-CIGS/PbS QDs/In Heterojunction Diode**
Candan İ., Erçelebi A. Ç.
2017 MRS Fall Meeting Exhibit, Massachusetts, United States Of America, 26 November - 01 December 2017
- IV. **Production of Graphene Based Upconversion Material Assist Solar Cells**
Duru A. S. , Yavuz H. İ. , Candan İ.
2017 MRS Fall Meeting Exhibit, Massachusetts, United States Of America, 26 November - 01 December 2017
- V. **Defect Mediated Ferromagnetism in Mn Gd doped ZnO Nanocrystals**
Akyol M., Kılıç Çetin S., Candan İ., Ekicibil A.
2nd International Congress on The World of Technology and Advanced Materials, Kırşehir, Turkey, 28 September - 02 October 2016
- VI. **Optimizing New Type Nano Composite Infrared to Ultraviolet Up Conversion Luminescence Layer for Efficient Anatase Titania Film Based Dye Sensitized Solar Cell**
YAVUZ H. İ. , CANDAN İ., YETKİN S.
2016 MRS Spring Meeting Exhibit, Phoenix, United States Of America, 28 March - 01 April 2016
- VII. **Formation of ZnSnSe₂ Thin Films Deposited by Using Sintered Stoichiometric Powder**
Güllü H. H. , Bayraklı Ö., Candan İ., Parlak M.
2016 MRS Spring Meeting & Exhibite, Arizona, United States Of America, 28 March - 01 April 2016
- VIII. **Characterization of Ag Ga In Te Thin Film for Solar Cell Applications**
Bayraklı Ö., Güllü H. H. , Candan İ., Coşkun E., Parlak M.
Science and Applications of Thin Films, Conference and Exhibition, İzmir, Turkey, 15 - 19 September 2014
- IX. **Characterization of Sputtered Cu Zn Sn Te Thin Films for Device Applications**
GÜLLÜ H. H. , COŞKUN E., BAYRAKLI Ö., CANDAN İ., PARLAK M.
E-MRS Spring Meeting 2014, Lille, France, 26 - 30 May 2014
- X. **Saçtırma Yöntemi Kullanılarak Üretilen TiO₂ İnce Filmlerde Üretim Süresinin Yapı ve Optik Özelliklere Etkisi**

- Hosseini A., Candan İ., Güllü H. H. , Erçelebi A. Ç.
Yoğun Madde Fiziği 19, Bilkent Ün., Ankara, Turkey, 13 - 20 December 2013
- XI. **Cu-Zn-Sn-Te İnce Filmlerin Yapısal ve Optik Özelliklerinin İncelenmesi**
GÜLLÜ H. H. , CANDAN İ., SÜRÜCÜ Ö., PARLAK M.
Yoğun Madde Fiziği 19,Bilkent, Turkey, 20 December 2013
- XII. **Güneş Pili Uygulamalarında Soğurucu Katman Olarak Kullanılan Cu(In,Ga)Se (CIGS) İnce Filmlerinin Üretimi ve Karakterizasyonu.**
Candan İ., Güllü H. H. , Parlak M., Erçelebi A. Ç.
Yoğun Madde Fiziği 19, Bilkent Ün., Ankara, Turkey, 20 December 2013
- XIII. **Growth and optimization of ZIT thin films for photovoltaic applications**
CANDAN İ., GÜLLÜ H. H. , BAYRAKLI Ö., PARLAK M., ERÇELEBİ A. Ç.
9th Nanoscience and Nanotechnology Conference, Erzurum, Turkey, 24 - 28 June 2013
- XIV. **Structural characterization of aluminum induced polycrystalline silicon films**
Kılıçerkan G., Candan İ., Güllü H. H. , Turan R., Ertuğrul M.
9th Nanoscience and Nanotechnology Conference, Erzurum, Turkey, 24 - 28 June 2013
- XV. **Characterization of co evaporated Cu Ag In Se thin film by the physical vapor deposition**
GÜLLÜ H. H. , CANDAN İ., PARLAK M.
9th Nanoscience and Nanotechnology Conference, Erzurum, Turkey, 24 - 28 June 2013
- XVI. **Investigation of the physical properties of Cu In Zn Se Thin Films Deposited by Sputtering**
GÜLLÜ H. H. , CANDAN İ., BAYRAKLI Ö., ERÇELEBİ A. Ç. , PARLAK M.
E-MRS Spring Meeting 2013, Strasbourg, France, 27 - 31 May 2013
- XVII. **Growth and characterization of Ga rich CuIn_{1-x}GaxSe₂ CIGS thin films by sputtering technique for photovoltaic application**
CANDAN İ., GÜLLÜ H. H. , BAYRAKLI Ö., PARLAK M., ERÇELEBİ A. Ç.
E-MRS Spring Meeting 2013, Strasbourg, France, 27 - 31 May 2013
- XVIII. **ITO/TiO₂/CdTe/Au ince film hetero-eklem aygıtların karakterizasyonu**
Hosseini A., CANDAN İ., GÜLLÜ H. H. , ERÇELEBİ A. Ç.
Yoğun Madde Fiziği – İzmir Toplantısı, İzmir, Turkey, 05 April 2013
- XIX. **Effect of In Ga Ratio on The Properties of Semiconductor CuIn_{1-x}GaxSe₂ CIGS Thin Films**
CANDAN İ., GÜLLÜ H. H. , BAYRAKLI Ö., PARLAK M., ERÇELEBİ A. Ç.
Solar TR-2, Antalya, Turkey, 6 - 09 November 2012
- XX. **CIGS İnce Filmlerde Isıl İşlemin Yarıiletken Özelliklere Olan Etkisi**
CANDAN İ., GÜLLÜ H. H. , PARLAK M., ERÇELEBİ A. Ç.
Yoğun Madde Fiziği – İzmir Toplantısı, İzmir, Turkey, 06 April 2012
- XXI. **Saçtırma (Sputtering) Tekniği ile Ag-Zengini Üretilen Cu_{1-x}Ag_xInSe₂ İnce Filmlerin Karakterizasyonu**
GÜLLÜ H. H. , CANDAN İ., PARLAK M., ERÇELEBİ A. Ç.
Yoğun Madde Fiziği – İzmir Toplantısı, İzmir, Turkey, 06 April 2012
- XXII. **The Structural and Optical Analyzing of CIGS Thin Films Deposited by Sputtering Technique**
CANDAN İ., GÜLLÜ H. H. , PARLAK M., ERÇELEBİ A. Ç.
7th Nanoscience and Nanotechnology Conference, İstanbul, Turkey, 27 June - 01 July 2011
- XXIII. **Investigation of Structural Electrical and Optical Properties of Cu_{1-x}Ag_xInSe₂ Thin Films with Different Cu Ag Ratios**
GÜLLÜ H. H. , CANDAN İ., PARLAK M., ERÇELEBİ A. Ç.
7th Nanoscience and Nanotechnology Conference, İstanbul, Turkey, 27 June - 01 July 2011
- XXIV. **Characterization of CIGS Thin Films Deposited with Double Sources e beam Evaporation by the Three stage Process**
CANDAN İ., PARLAK M., ERÇELEBİ A. Ç.
E-MRS Spring Meeting 2010, Strasbourg, France, 7 - 11 June 2010
- XXV. **Electrical and Optical Characterization of CuIn_{0.5}Ga_{0.5}Se₂ Thin Films Deposited by Electron Beam Technique for Solar Cell Structures**
CANDAN İ., KARAAĞAÇ H., PARLAK M., ERÇELEBİ A. Ç.

Solar TR-1, Ankara, Turkey, 29 - 30 April 2010

XXVI. The Device Behaviors of p Si n Ag In Se Junction

KALELİ M., PARLAK M., KARAAĞAÇ H., ERÇELEBİ A. Ç. , CANDAN İ.

E-MRS Spring Meeting 2009, Strasbourg, France, 8 - 12 June 2009

XXVII. Annealing Effects on the Structural and Optical Properties of AgGa0.5In0.5Se2 Thin Films Deposited by Electron Beam Technique

KARAAĞAÇ H., PARLAK M., CANDAN İ., KALELİ M.

E-MRS Spring Meeting 2009, Strasbourg, France, 8 - 12 June 2009

Supported Projects

CANDAN İ., YAMANOĞLU R., Project Supported by Higher Education Institutions, Spintronik aygıt uygulamaları için NiCr katkılı ZnO seyreltilmiş manyetik yarıiletkenlerin sıcak pres yöntemi ile üretilmesi ve manyetoelektronik özelliklerinin incelenmesi, 2020 - Continues

Özen Y., Candan İ., Çetinkaya Ç., Kınacı B., Project Supported by Higher Education Institutions, Organik Güneş Hücreleri için Boşluk Transport Tabakalarının Geliştirilmesi ve Verimliliğe Etkisinin İncelenmesi, 2020 - 2021

Parlak M., Erçelebi A. Ç. , Candan İ., Project Supported by Higher Education Institutions, Fabrication and investigation of CuSn(S,Se yada Te)₂ ve CuZn(S,Se)₂ thin film properties by utilizing thermal evaporation and sputtering techniques. lenmesi, 2014 - 2014

Parlak M., Erçelebi A. Ç. , Candan İ., Bayraklı Ö., Project Supported by Higher Education Institutions, Production and investigation of CuZnSnTe₂ thin films by magnetic scattering technique, 2013 - 2013

Activities in Scientific Journals

Gazi Üniversitesi Fen Bilimleri Dergisi Part: C Tasarım ve Teknoloji, Editor, 2019 - Continues

European Journal of Technique, Editor, 2019 - Continues

Scientific Refereeing

JOURNAL OF MATERIALS SCIENCE-MATERIALS IN ELECTRONICS, SCI Journal, May 2021

JOURNAL OF MATERIALS SCIENCE-MATERIALS IN ELECTRONICS, SCI Journal, May 2021

JOURNAL OF ALLOYS AND COMPOUNDS, SCI Journal, February 2021

JOURNAL OF MATERIALS SCIENCE-MATERIALS IN ELECTRONICS, SCI Journal, February 2021

JOURNAL OF MATERIALS SCIENCE-MATERIALS IN ELECTRONICS, SCI Journal, February 2021

JOURNAL OF MATERIALS SCIENCE-MATERIALS IN ELECTRONICS, SCI Journal, September 2020

POLYMER BULLETIN, SCI Journal, July 2020

CHEMICAL PHYSICS LETTERS, SCI Journal, July 2020

BALKAN JOURNAL OF ELECTRICAL AND COMPUTER ENGINEERING, National Scientific Refreed Journal, May 2020

JOURNAL OF THE FACULTY OF ENGINEERING AND ARCHITECTURE OF GAZI UNIVERSITY, Journal Indexed in SCI-E, February 2020

JOURNAL OF ALLOYS AND COMPOUNDS, SCI Journal, February 2020

JOURNAL OF ALLOYS AND COMPOUNDS, SCI Journal, February 2020

CHEMICAL PHYSICS LETTERS, SCI Journal, January 2020

JOURNAL OF MATERIALS SCIENCE-MATERIALS IN ELECTRONICS, SCI Journal, December 2019

POLYMER BULLETIN, SCI Journal, December 2019

CHEMICAL PHYSICS LETTERS, Journal Indexed in SCI-E, December 2019

JOURNAL OF MATERIALS SCIENCE-MATERIALS IN ELECTRONICS, SCI Journal, August 2019

JOURNAL OF MATERIALS SCIENCE-MATERIALS IN ELECTRONICS, SCI Journal, May 2019

JOURNAL OF ALLOYS AND COMPOUNDS, SCI Journal, May 2019

JOURNAL OF MATERIALS SCIENCE-MATERIALS IN ELECTRONICS, SCI Journal, March 2019

JOURNAL OF ALLOYS AND COMPOUNDS, SCI Journal, June 2018

Balkan Journal of Electrical and Computer Engineering, National Scientific Refreed Journal, June 2018

International Journal of Energy Applications and Technologies, National Scientific Refreed Journal, December 2017

European Journal of Technic (EJT), National Scientific Refreed Journal, October 2017

Technopark, Middle East Technical University, Turkey, September 2016

Scientific Consultations

ÖLÇME, SEÇME VE YERLEŞTİRME MERKEZİ (ÖSYM), ANKARA, Scientific Consultancy, Kocaeli Üniversitesi, Fen Edebiyat Fakültesi, Fizik, Turkey, 2018 - 2019

Citations

Total Citations (WOS):55

h-index (WOS):5