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PERSONAL

Date of Birth	11.04.1985
Place of Birth	Isparta

EDUCATION

2010-2016	Middle East Technical University, Physics, Ph.D.
2008-2010	Middle East Technical University, Physics, M.S.
2006-2008	Middle East Technical University, Mathematics, B.S.-minor
2004-2008	Middle East Technical University, Physics Education, B.S.-major

ACADEMIC POSITIONS

March/2018	Assistant Professor, Physics Group Atılım University, Turkey
February/2016- March/2018	Physics Specialists, Central Laboratory Middle East Technical University, Turkey
March/2009- February/2016	Research Assistant, Department of Physics Middle East Technical University, Turkey

HONORS&AWARD

1	Course performance reward in doctorate program from the Department of Physics at Middle East Technical University (2011-2012 academic year)
2	Course performance reward in master program from the Department of Physics at Middle East Technical University (2009-2010 academic year)
3	First rank in the Department of Secondary Science and Mathematics Education at Middle East Technical University (2008)

RESEARCH INTERESTS

1	Semiconductors
2	Thin film deposition and characterization
3	Thin film photovoltaics
4	Schottky diodes

PROFESSIONAL SERVICE

1	Reviewer, Materials Research Bulletin
2	Reviewer, Materials Research Express
3	Reviewer, Optik - International Journal for Light and Electron Optics

PUBLICATIONS

1	H.H. Gullu, M. Parlak, Temperature dependence of electrical properties in $\text{Cu}_{0.5}\text{Ag}_{0.5}\text{InSe}_2/\text{Si}$ heterostructure, Journal of Materials Science: Materials in Electronics, 29, 11258-11264, 2018
2	A. Hosseini, H.H. Gullu, E. Coskun, M. Parlak, C. Ercelebi, Fabrication and characterization of TiO_2 thin film for device applications, Surface Review and Letters, 2018 (online ready)
3	H. H. Gullu, D. E. Yildiz, The analysis of inhomogeneous barrier height in In/SnTe/Si/Ag diode, Journal of Polytechnic, 2018 (online ready)
4	H. H. Gullu, D. E. Yildiz, Frequency dependent dielectric properties of $n\text{-ZnSe/p-Si}$ diode, Journal of Polytechnic, 2018 (online ready)
5	M. Terlemozoglu, O. Bayrakli, H. H. Gullu, T. Colakoglu, D. E. Yildiz, M. Parlak, Analysis of current conduction mechanism in CZTSSe/n-Si structure, Journal of Materials: Materials in Electronics, 29, 5264-5274, 2018
6	F. Yigiterol, H. H. Gullu, O. Bayrakli, D. E. Yildiz, Temperature dependent electrical characteristics of $\text{Au/Si}_3\text{N}_4/4\text{H n-SiC}$ MIS diode, Journal of Electronic Materials, 47, 2979-2987, 2018
7	O. Bayrakli, H. H. Gullu, M. Parlak, Investigation of device characteristics of $n\text{-CdS/p-Ag(Ga-In)Te}_2$ heterojunction diode, Surface Review and Letters, 8, 1850107, 2018
8	F. Yigiterol, H. H. Gullu, D. E. Yildiz, Influence of Si_3N_4 layer on the electrical properties of Au/n-4H SiC diodes, Bulletin of Materials Science Electronics, 41, 66, 2018
9	G. Surucu, H. H. Gullu, O. Bayrakli, M. Parlak, Enhancement in photovoltaic characteristics of CdS/CdTe heterojunction, Journal of Polytechnic, 20, 801-805, 2017
10	H. H. Gullu, O. Bayrakli, D. E. Yildiz, M. Parlak, Study on the electrical properties of ZnSe/Si heterojunction diode", Journal of Materials: Materials in Electronics, 28, 17806-17815, 2017
11	H. H. Gullu, M. Parlak, Investigation of post-thermal annealing on material properties of Cu-In-Zn-Se thin films, Journal of Semiconductors, 38, 123001-1-6, 2017
12	O. Bayrakli, M. Terlemozoglu, H. H. Gullu, M. Parlak, Investigation of precursor sequence and post-annealing effects on the properties of $\text{Cu}_2\text{SnZnSe}_4$ thin films deposited by the elemental thermal evaporation, Materials Research Express, 4, 086411, 2017
13	H. H. Gullu, O. Bayrakli, M. Parlak, Optical and electrical characteristics of thermally evaporated $\text{Cu}_{0.5}\text{Ag}_{0.5}\text{InSe}_2$ thin films, Thin Solid Films, 639, 29-35, 2017
14	H. H. Gullu, E. Coskun, M. Parlak, Investigations of thermal annealing role on the optical properties of Zn-In-Se thin films, Optics-International Journal for Light and Electron Optics, 144, 603-612, 2017
15	O. Bayrakli, M. Terlemozoglu, H. H. Gullu, M. Parlak, Deposition of CZTSe thin films and illumination effects on the device properties of $\text{Ag/n-Si/p-CZTSe/In}$ heterostructure, Journal of Alloys and Compounds, 709, 337-343, 2017
16	H. H. Gullu, M. Parlak, Structural characterization of Zn-In-Se thin films, Modern Physics Letters B 31, 1750043, 2017

17	H. H. Gullu, M. Parlak, Device characterization of ZnInSe ₂ thin films, Energy Procedia, 102, 110-120, 2016
18	H. H. Gullu, M. Parlak, Structural characteristics of thermally evaporated Cu _{0.5} Ag _{0.5} InSe ₂ thin films, Materials Research Express, 3, 055901, 2016
19	H. H. Gullu, E. Coskun, M. Parlak, Investigation of optical parameters of thermally evaporated ZnSe thin films, Physica Status Solidi (c), 12, 1224-1228, 2015
20	H. H. Gullu, I. Candan, E. Coskun, M. Parlak, Investigation of structural and optical parameters of Cu-Ag-In-Se thin films deposited by thermal evaporation method, Optik-International Journal for Light and Electron Optics, 126, 1578-1583, 2015
21	F. Aksoy Akgul, G. Akgul, H. H. Gullu, H. E. Unalan, R. Turan, Enhanced diode performance in cadmium telluride - Silicon nanowire heterostructures, Journal of Alloys and Compounds, 644, 131-139, 2015
22	F. Aksoy Akgul, G. Akgul, H. H. Gullu, H. E. Unalan, R. Turan, Improved diode properties in zinc telluride thin film - Silicon nanowire heterojunctions, Philosophical Magazine, 95, 1164-1183, 2015
23	E. Coskun, H. H. Gullu, I. Candan, O. Bayrakli, M. Parlak, Device behavior of an In/p-Ag(Ga,In)Te ₂ /n-Si/Ag heterojunction diode, Materials Science in Semiconductor Processing, 34, 138-145, 2015
24	E. Coskun, H. H. Gullu, M. Parlak, C. Ercelebi, Study on the structural and electrical properties of sequentially deposited Ag-Ga-In-Te thin films, Journal of Low Temperature Physics, 178, 62-173, 2015
25	E. Coskun, H. H. Gullu, M. Parlak, Device application of AgGa _{0.5} In _{0.5} Se ₂ thin films deposited by thermal sequential stacked layer method, Materials Research Express, 1, 046407, 2014
26	H. H. Gullu, E. Coskun, M. Parlak, Characterization of co-evaporated Cu-Ag-In-Se thin films, Brazilian Journal of Physics, 44, 719-725, 2014
27	M. Isik, H. H. Gullu, Structural and optical properties of thermally evaporated Ga-In-Se thin films, Modern Physics Letters B, 28, 1450101, 2014
28	H. H. Gullu, O. Bayrakli, I. Candan, E. Coskun, M. Parlak, Structural and optical properties of Zn-In-Te thin films deposited by thermal evaporation technique, Journal of Alloys and Compounds, 566, 83-89, 2013
29	Hosseini, C. Icli, H. H. Gullu, Preparation and characterization of porous TiO ₂ thin films by sol-gel method for extremely thin absorber - ETA solar cell applications, Turkish Journal of Science and Technology, 8, 69-79, 2013
30	M. M. Metbulut, H. H. Gullu, H. Altan, Influence of the spot size of the probe beam on the detected THz power using electro-optic detection method, NATO Science for Peace and Security Series B: Physics and Biophysics, 107-111, 2011
31	D. Koseoglu, H. H. Gullu, and H. Altan, THz probe studies of MBE grown epitaxial GaAs, Journal of Physics: Conference Series 193, 012088, 2009
32	M. M. Metbulut, H. H. Gullu, H. Altan, Influence of the spot size of the probe beam on the detected THz power using electro-optic detection method, TERA-MIR 2009, NATO Advanced Research Workshop Terahertz and Mid Infrared Radiation: Basic Research and Practical Applications, Article number: 5379634, 47-48, 2009

PROJECTS

1	Middle East Technical University (METU) BAP (01.01.2018-31.12.2018) Project No: BAP-01-05-2018 "Alternatif soğurucu katman olarak $\text{SnSe}_x\text{Te}_{(1-x)}$ ince film yapısının üretimi ve özelliklerinin araştırılması" (Proje Yürütücüsü: Prof. Dr. Mehmet Parlak)
2	Middle East Technical University (METU) BAP (01.01.2017-31.12.2017) Project No: BAP-01-05-2017-002 " $\text{Cu}_2\text{ZnSn}(\text{S},\text{Se})_4$ ince filmlerinin fiziksel buharlaştırma tekniği ile üretilmesi ve özelliklerinin belirlenmesi" (Project Manager: Prof. Dr. Mehmet Parlak)
3	Middle East Technical University (METU) BAP (01.01.2016-31.12.2016) Project No: BAP-01-05-2016-004 " $\text{Cu}_2\text{ZnSnSe}_4$ ince filmlerinin fiziksel buharlaştırma tekniği ile üretilmesi ve özelliklerinin belirlenmesi" (Project Manager: Prof. Dr. Mehmet Parlak)
4	Middle East Technical University (METU) BAP (01.01.2015-31.12.2015) METU BAP Project No: BAP-01-05-2015-001 " ZnSnS_2 ince filmlerinin ısısal buharlaştırma tekniği ile üretilmesi ve özelliklerinin belirlenmesi" (Project Manager: Prof. Dr. Mehmet Parlak)
5	TÜBİTAK-1002 (15.06.2014-15.06.2015) Project No: 114F065 "Çok ince soğurucu katman ETA güneş gözelerinin üretimi ve incelenmesi" (Project Manager: Prof. Dr. Mehmet Parlak)
6	Middle East Technical University (METU) BAP (01.01.2014-31.12.2014) Project No: BAP-01-05-2014-006 " $\text{CuSn}(\text{S},\text{Se}$ yada $\text{Te})_2$ ve $\text{CuZn}(\text{S},\text{Se})_2$ ince filmlerinin ısı buharlaştırma ve saçtırmalı kaplama tekniğiyle üretilmesi ve özelliklerinin belirlenmesi" (Project Manager: Prof. Dr. Mehmet Parlak)
7	TÜBİTAK-1007 (01.09.2013-01.09.2017) Project No: 111A018 "Kızıl ötesi görüntüleyici arayıcı başlık geliştirilmesi" (Project Manager: Prof. Dr. Cengiz Beşikçi)
8	Middle East Technical University (METU) BAP (01.01.2013-31.12.2013) Project No: BAP-01-05-2013-005 " CuZnSnTe_2 ince filmlerinin manyetik saçtırmalı kaplama tekniğiyle üretilmesi ve özelliklerinin belirlenmesi" (Project Manager: Prof. Dr. Mehmet Parlak)
9	Middle East Technical University (METU) BAP (01.01.2012-31.12.2012) Project No: BAP-01-05-2012-004 " $\text{Zn}_x\text{In}_{1-x}\text{Te}_2$ ince filmlerin üretimi ve aygıt özelliklerinin belirlenmesi" (Project Manager: Prof. Dr. Mehmet Parlak)
10	Middle East Technical University (METU) BAP (01.01.2011-31.12.2011) Project No: BAP-01-05-2011-002 " CuAgInSe_2 ince filmlerin üretimi ve film özelliklerinin incelenmesi" (Project Manager: Prof. Dr. Mehmet Parlak)

CONFERENCE PRESENTATIONS

1	S. Kayra Gullu, H. H. Gullu, M. Parlak, A. Bek, Plasmonic effect of spray-deposited Ag nano-particles on the photovoltaic characteristics of Si-based heterojunction diode, Materials Research Society (MRS) Fall Meeting, USA, 2017 (Oral presentation)
2	O. Bayrakli, M. Terlemezoglu, H. H. Gullu, D. E. Yildiz, M. Parlak, Deposition of CZTSe thin films and investigation of their device properties, International Conference on Condensed Matter and Material Science (ICMMS-17), Turkey, 2017 (Oral presentation)
3	M. Terlemezoglu, O. Bayrakli, H. H. Gullu, D. E. Yildiz, M. Parlak, The electrical properties of p-CZTSSe/n-Si heterostructure, International Conference on Condensed Matter and Material Science (ICMMS-17), Turkey, 2017 (Oral presentation)
4	H. H. Gullu, M. Terlemezoglu, O. Bayrakli, D. E. Yildiz, M. Parlak, Investigation of carrier transport mechanisms in the Cu-Zn-Se based heterostructure grown by sputtering technique, Turkish Physical Society 33. International Physics Congress (TFD-33), Turkey, 2017 (Oral presentation)
5	G. Surucu, O. Bayrakli, H. H. Gullu, M. Terlemezoglu, M. Parlak, Deposition and characterization of ZTSeS thin films for photovoltaic applications, Photovoltaic Technical Conference (PVTEC), France, 2017 (Oral presentation)
6	A. Hosseini, H. H. Gullu, O. Bayrakli, M. Parlak, R. Turan, C. Ercelebi, Fabrication and investigation of extremely thin CdTe absorber layer solar cells, 2. International Congress on the World of Technology and Advanced Materials (WITAM), Turkey, 2016 (Oral presentation)
7	O. Bayrakli, H. H. Gullu, M. Parlak, C. Ercelebi, Investigation of the device properties of CZTSe thin films for solar cells, 2. International Congress on the World of Technology and Advanced Materials (WITAM), Turkey, 2016 (Oral presentation)
8	S. Kayra Gullu, H. H. Gullu, A. Bek, The effect of metal nanoparticles on performance of Si-based thin film solar cells, 2. International Congress on the World of Technology and Advanced Materials (WITAM), Turkey, 2016 (Oral presentation)
9	S. Kayra Gullu, H. H. Gullu, M. Parlak, A. Bek, Improvement on the photovoltaic device performance of n-CdS/p-Si heterojunction diode with the inclusion of Ag plasmonic layer, 12. International Nanoscience and Nanotechnology Conference (NANOTR-12), Turkey, 2016 (Oral presentation)
10	O. Bayrakli, H. H. Gullu, M. Parlak, "AgGa _x In _(1-x) Te ₂ ince filmlerin üretilmesi ve aygıt özelliklerinin belirlenmesi", 21. Yoğun Madde Fiziği Ankara Toplantısı (YMF-21), Turkey, 2015 (Oral presentation)
11	O. Bayrakli, H. H. Gullu, M. Parlak, Device measurements and analysis of Ag-Ga-In-Te based thin Film heterojunction diode, 3. Turkish Solar Electricity Conference and Exhibition (SolarTR-3), Turkey, 2015 (Oral presentation)
12	H. H. Gullu, E. Coskun, O. Bayrakli, M. Parlak, Material and device characterization of Cu _{0.5} Ag _{0.5} InSe ₂ and ZnInSe ₂ thin films for photovoltaic applications, Materials Research Society (MRS) Spring Meeting, USA, 2015 (Oral presentation)
13	O. Bayrakli, H. H. Gullu, I. Candan, E. Coskun, M. Parlak, C. Ercelebi, Characterization of Ag-Ga-In-Te thin film for solar cell applications, Science and Applications of Thin Films Conference and Exhibition (SATF2014), Turkey, 2014 (Oral presentation)

CITATIONS

Sum of times cited without self-citations (ISI Web of Science):	28
H-index (ISI Web of Science):	4

COURSES GIVEN

1	PHYS101 – General Physics I
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