ATILIM UNIVERSITY
1996

Özge SÜRÜCÜ, Assoc. Prof. Dr.

Atılım University
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PERSONAL

Date of Birth	1986
Place of Birth	Ankara

EDUCATION

2011-2018	Middle East Technical University, Physics, Ph.D. (Post B.S)
2004-2009	Gazi University, Physics Education, B.S.

ACADEMIC POSITIONS

11/2019-	Faculty Member (Currently, Assoc. Prof. Dr.), Department of Electrical and Electronics Engineering, Atilim University, Turkey
01/2010-04/2018	Research Assistant, Department of Physics Middle East Technical University, Turkey

HONORS&AWARDS

1	Success Scholarship from Gazi University Foundation (2007)
2	First rank in the Department of Secondary Science and Mathematics Education at Gazi University (2009)

RESEARCH INTERESTS

1	Thin Film deposition and characterization
2	Semiconductor device fabrication
3	Solar Cells
4	2D Materials
5	Computational Material Science

PROFESSIONAL SERVICE

1	Reviewer, Journal of Alloys and Compounds
2	Reviewer, Journal of Materials Science: Materials in Electronics
3	Reviewer, Semiconductor Science and Technology
4	Reviewer, Materials Research Express

PUBLICATIONS

1	**O Surucu**, DE Yıldız, M Yıldırım, *"Study on the dark and illuminated operation of Al/Si3N4/p-Si Schottky photodiodes: optoelectronic insights",* Applied Physics A 130 (2), 103(2024)
2	F Himmet, G Surucu, SB Lisesivdin, **O Surucu**, G Altuntas, B Bostan, A Gencer," *Inovative 2D materials for efficient photocatalysis: A comparative study for WSi2N4, WGe2N4, and their janus counterpart WSiGeN4 monolayers",* International Journal of Hydrogen Energy 78, 761-772, (2024)
3	G Surucu, E Bal, A Gencer, M Parlak, **O Surucu,** *"Performance analysis of CuSbSe2 thin-film solar cells with Cd-free window layers",* Materials Letters 363, 136296,(2024)
4	G Surucu, **O Surucu**, D Usanmaz, F Özel, A Gencer, *"Establishing the NiMo6Se8 Chevrel Phase as a Promising Material Using DFT",*Advanced Theory and Simulations, 2400164, (2024)
5	T Sevinc Dag, G Surucu, A Gencer, **O Surucu**, F Ozel, Y Ciftci, "Investigation of Tungsten-Based Seleno-Chevrel Compounds with Different Compositions for Efficient Water Splitting", Advanced Theory and Simulations, 2300336, (2023)
6	T Bektas, **O Surucu**, M Terlemezoglu, M Parlak, "Physical characterization of thermally evaporated Sn–Sb–Se thin films for solar cell applications", Applied Physics A, 129(5), 381, (2023)
7	M Isik, **O Surucu**, NM Gasanly, "Temperature-dependent current–voltage characteristics of p-GaSe0.75S0.25/n-Si heterojunction", Applied Physics A, 129 (8), 538 (2023)
8	G Surucu , A Gencer, O Surucu, Md Ashraf Ali, "DFT Insights into Noble Gold-Based Compound Li5AuP2: Effect of Pressure on Physical Properties", ACS omega, 8(17), 15673-15683 (2023)
9	T Bektas, M Terlemezoglu, **O Surucu**, M Isik, M Parlak, "Growth and optical characterization of Sn0.6Sb0.4Se layer single crystals for optoelectronic applications", Materials Science in Semiconductor Processing ,141, 106434 (2022)
10	G Ding, T Sun, G Surucu, **O Surucu,** A Gencer, X Wang, "Complex nodal structure phonons formed by open and closed nodal lines in CoAsS and Na 2 CuP solids", Physical Chemistry Chemical Physics 24 (28), 17210-17216 (2022)
11	M Terlemezoglu, **O Surucu**, M Isik, NM Gasanly, M Parlak, "*Temperature-dependent optical characteristics of sputtered NiO thin films",* Applied Physics A 128 (1), 1-6 (2022)
12	**O Surucu**, M Isik, M Terlemezoglu, NM Gasanly, M Parlak, "*Structural and temperature-tuned bandgap characteristics of thermally evaporated β-In_2S_3 thin films",* Journal of Materials Science: Materials in Electronics 32 (12), 15851-15856 (2021)
13	E Yükseltürk, **O Surucu**, M Terlemezoglu, M Parlak, Ş Altındal, "*Illumination and voltage effects on the forward and reverse bias current–voltage (IV) characteristics in In/In2S3/p-Si photodiodes",* Journal of Materials Science: Materials in Electronics 32 (17), 21825-21836 (2021)
14	A Gencer, **O Surucu**, D Usanmaz, R Khenata, A Candan, G Surucu, "*Equiatomic quaternary Heusler compounds TiVFeZ (Z= Al, Si, Ge): half-metallic ferromagnetic materials",* Journal of Alloys and Compounds 883, 160869 (2021)

15	G Surucu, A Gencer, **O Surucu,** D Usanmaz, A Candan "*Pressure and spin effect on the stability, electronic and mechanic properties of three equiatomic quaternary Heusler (FeVHfZ, Z= Al, Si, and Ge) compounds",* Materials Today Communications 29, 102941 (2021) A Gencer, S Aydin, **O Surucu**, X Wang, E Deligoz, G Surucu "*Enhanced hydrogen storage of a functional material: Hf2CF2 MXene with Li decoration",* Applied Surface Science 551, 149484 (2021)
16	HH Gullu, M Isik, **O Surucu**, NM Gasanly, M Parlak, "*Temperature effects on optical characteristics of CdSe thin films"* Materials Science in Semiconductor Processing 123, 105559 (2021)
17	**O Surucu**, M Isik, NM Gasanly, M Terlemezoglu, M Parlak**,** "*Temperature-tuned band gap properties of MoS_2 thin films" Materials Letters 275, 128080* (2020)
18	G Surucu, B Yildiz, A Erkisi, X Wang**, O Surucu,** "*The investigation of electronic, anisotropic elastic and lattice dynamical properties of MAB phase nanolaminated ternary borides: M_2AlB_2 (M= Mn, Fe and Co) under spin effects"* Journal of Alloys and Compounds 838, 155436 (2020)
19	A Gencer, **O Surucu**, G Surucu, E Deligoz "*Anisotropic mechanical properties of $Tl_4Ag_{18}Te_{11}$ compound with low thermal conductivity" Journal of Solid State Chemistry* 289, 121469 (2020)
20	M Isik, HH Gullu, M Terlemezoglu, **OB Surucu**, M Parlak, NM Gasanly "*Investigation of band gap energy versus temperature for SnS_2 thin films grown by RF-magnetron sputtering" Physica B: Condensed Matter* 591, 412264 (2020)
21	HH Gullu, **O Surucu**, M Isik, M Terlemezoglu, M Parlak "*Material and Si-based diode analyses of sputtered ZnTe thin films" Journal of Materials Science: Materials in Electronics* 31, 11390 (2020).
22	HH Gullu, DE Yildiz, **O Surucu**, M Parlak "*Frequency effect on electrical and dielectric characteristics of HfO_2-interlayered Si-based Schottky barrier diode"* Journal of Materials Science: Materials in Electronics, 1-14 (2020).
23	G Surucu, A Gencer, X Wang, **O Surucu**, Lattice dynamical and thermo-elastic properties of M2AlB (M= V, Nb, Ta) MAX phase borides, Journal of Alloys and Compounds, 819, 153256, 2020
24	HH Gullu, **O Surucu**, M Terlemezoglu, M Isik, C Ercelebi, NM Gasanly, M Parlak, Temperature-dependent material characterization of $CuZnSe_2$ thin films, Thin Solid Films, 701, 137941, 2020
25	S Delice, M Isik, HH Gullu, M Terlemezoglu, **O Bayrakli Surucu**, NM Gasanly, M Parlak, Temperature dependent band gap in $SnS_{2x}Se_{(2-2x)(x=\ 0.5)}$ thin films, Materials Science in Semiconductor Processing, 114, 105083, 2020
26	**Ö Bayraklı Sürücü,** Characterization of GZO thin films fabricated by RF magnetron sputtering method and electrical properties of In/GZO/Si/Al diode, Journal of Materials Science: Materials in Electronics, 30-21, 19270-19278, 2019
27	**Ö Bayraklı Sürücü**, HH Güllü, M Terlemezoglu, DE Yildiz, M Parlak, Determination of current transport characteristics in Au-Cu/CuO/n-Si Schottky diodes, Physica B: Condensed Matter, 570, 246-253, 2019
28	HH Gullu, **Ö Bayraklı Sürücü**, M Terlemezoglu, DE Yildiz, M. Parlak, Investigation of electrical characteristics of Ag/ZnO/Si sandwich structure, Journal of Materials Science: Materials in Electronics, 30-16, 2019
29	S. Delice, M. Isik, H.H. Gullu, M. Terlemezoglu, **O.B. Surucu**, M. Parlak, N.M. Gasanly, Temperature dependence of band gaps in sputtered SnSe thin films, 131, 22-26, 2019
30	M Terlemezoglu, **Ö Bayraklı Sürücü**, C Dogru, HH Güllü, EH Ciftpinar, Ç Erçelebi, M. Parlak, CZTSSe thin films fabricated by single step deposition for superstrate solar cell applications, Journal of Materials Science: Materials in Electronics, 30-12, 19814-9821, 2019

31	HH Gullu, **Ö Bayraklı Sürücü**, M Terlemezoglu, DE Yildiz, M. Parlak, Frequency effect on electrical and dielectric characteristics of In/$Cu_2ZnSnTe_4$/Si/Ag diode structure, Journal of Materials Science: Materials in Electronics, 30-10, 9814-9821, 2019
32	**Ö. Bayrakli Surucu**, H.H. Gullu, Deposition and Characterization of $ZnSnSe_2$ Thin-Films Deposited by Using Sintered Stoichiometric Powder, Journal of Polytechnic, 22, 649 – 653, 2019
33	HH Gullu, DE Yildiz, **ÖB Sürücü**, M Terlemezoglu, M Parlak, Temperature dependence of electrical properties in In/$Cu_2ZnSnTe_4$/Si/Ag diodes, Bulletin of Materials Science, 42-2, 45, 2019
34	**ÖB Sürücü**, HH Güllü, "*Deposition and characterization of ZnSnSe2 thin-films deposited by using sintered stoichiometric powder*", Politeknik Dergisi 22 (3), 649-653,(2019)
35	M Terlemezoglu, **Ö Bayraklı Sürücü**, T Çolakoğlu, MK Abak, HH Güllü, Ç Erçelebi, M. Parlak, Construction of self-assembled vertical nanoflakes on CZTSSe thin films, Materials Research Express, 6-2, 026421, 2018
36	**Ö Bayrakli**, HH Güllü, M. Parlak, INVESTIGATION ON DEVICE CHARACTERISTICS OF nCdS/p-Ag(Ga-In)Te_2 HETEROJUNCTION DIODE, Surface Review and Letters,25, 1850107, 2018
37	F Yigiterol, H.H. Güllü, **Ö Bayraklı**, Dilber Esra Yıldız, Temperature-Dependent Electrical Characteristics of Au/Si_3N_4/4H n-SiC MIS Diode, Journal of Electronic Materials,47, 29792987, 2018
38	O Surucu, "*Deposition and Structural Characterization of Sn-Se-Te Thin Films"* Avrupa Bilim ve Teknoloji Dergisi, 343-347 (2018)
39	M Terlemezoglu, **Ö Bayraklı**, Hasan Hüseyin Güllü, T Çolakoğlu, DE Yildiz, M. Parlak, Analysis of current conduction mechanism in CZTSSe/n-Si structure, Journal of Materials Science: Materials in Electronics, 29, 5264-5274, 2018, 2018
40	**Ö. Sürücü**, Deposition and Structural Characterization of Sn-Se-Te Thin Films, European Journal of Science and Technology, 14, 343 – 347, 2018
41	H.H. Güllü, M. Terlemezoglu, **Ö Bayraklı**, D.E. Yıldız, M. Parlak, Investigation of carrier transport mechanisms in the Cu–Zn–Se based hetero-structure grown by sputtering technique, Canadian Journal of Physics, 96, 816-825,2018
42	**Ö Bayraklı**, M Terlemezoglu, HH Güllü, M. Parlak, Investigation of precursor sequence and post-annealing effects on the properties of $Cu_2SnZnSe_4$ thin films deposited by the elemental thermal evaporation, 4, 086411,2017
43	HH Güllü, **Ö Bayraklı**, M. Parlak, Optical and electrical characteristics of thermally evaporated $Cu_{0.5}Ag_{0.5}InSe_2$ thin films, Thin Solid Films, 639, 29-35, 2017

44	H.H. Güllü, **Ö Bayraklı**, DE Yildiz, M. Parlak, Study on the electrical properties of ZnSe/Si heterojunction diode, Journal of Materials Science: Materials in Electronics, 28, 17806-17815, 2017
45	Ö Bayraklı, M Terlemezoglu, HH Güllü, M. Parlak, Deposition of CZTSe thin films and illumination effects on the device properties of Ag/n-Si/p-CZTSe/In heterostructure, Journal of Alloys and Compounds, 709, 337-343, 2017
46	G.Sürücü, H.H. Güllü, **Ö. Bayraklı**, M. Parlak, Enhancement in Photovoltaic Characteristics of CdS/CdTe Heterojunction, Journal of Polytechnic, 20, 801-805, 2017
47	B. Kilic, S. Turkdogan, O.C. Ozer, M. Asgin, **O. Bayrakli**, G. Surucu, A. Astam, D. Ekinci, Produce of graphene/iron pyrite (FeS_2) thin films counter electrode for dye-sensitized solar cell, Materials Letters, 185, 584-587,2016
48	E. Coşkun, HH Güllü, İ. Candan, **Ö Bayraklı**, M. Parlak, C Ercelebi, 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

49	HH Güllü, **Ö Bayraklı**, İ. Candan, E. Coşkun, 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

PROJECTS

1	TÜBİTAK-ARDEB-3501-KARİYER**,** Project Coordinator, *Cu-Sb-Kalkojen (Cu-Sb-Se) İnce Film Hetero-Eklem Fabrikasyonu ve Fotovoltavik Uygulamaları*- 01.02.2021-01.08.2023-
2	TÜBİTAK (TEYDEB-Bireysel Girişimcilik-Project No:2170087), Project Coordinator, "Gümüş Nano Yapilar İle Esnek Saydam İletken Film Üretimi" (01.10.2017-01.10.2018)
3	TÜBİTAK (ARDEB-3001 Project No: 118F317), Researcher, "Katmanlı Yapıda Termal Buharlaştırma Tekniği Ile Üretilen Cdsexte1-X (Cst) Yarı-Iletken İnce Filmlerinin Malzeme Karakterizasyonu" (15.12.2018-…)
4	Middle East Technical University (METU) BAP Project No: BAP-01-05-2018), Researcher "Alternatif soğurucu katman olarak $SnSe_xTe_{(1-x)}$ ince film yapısının üretimi ve özelliklerinin araştırılması" (01.01.2018-31.12.2018)
5	Middle East Tehcnical University BAP (Project No: BAP-01-05-2017-002), Researcher "$Cu_2ZnSn(S,Se)_4$ ince filmlerinin fiziksel buharlaştırma tekniği ile üretilmesi ve özelliklerinin belirlenmesi" (01.01.2017-31.12.2017)
6	Middle East Technical University BAP Project No: BAP-01-05-2016-004, Researcher "$Cu_2ZnSnSe_4$ ince filmlerinin fiziksel buharlaştırma tekniği ile üretilmesi ve özelliklerinin belirlenmesi" (01.01.2016-31.12.2016)
7	Middle East Technical University BAP Project No: BAP-01-05-2015-001, Researcher, "ZnSnS2 ince filmlerinin ısısal buharlaştırma tekniği ile üretilmesi ve özelliklerinin belirlenmesi (01.01.2015-31.12.2015)
8	Middle East Technical University BAP Project No: BAP-01-05-2014-006, Researcher "$CuSn(S,Se$ yada $Te)_2$ ve $CuZn(S,Se)_2$ ince filmlerinin ısıl buharlaştırma ve saçtırmalı kaplama tekniğiyle üretilmesi ve özelliklerinin belirlenmesi" (01.01.2014-31.12.2014)
9	Middle East Technical University BAP Project No: BAP-01-05-2013-005, Researcher "$CuZnSnTe_2$ ince filmlerinin manyetik saçtırmalı kaplama tekniğiyle üretilmesi ve özelliklerinin belirlenmesi" (01.01.2013-31.12.2013)
10	Middle East Technical University BAP Project No: BAP-01-05-2012-004, Researcher "$Zn_xIn_{1-x}Te_2$ ince filmlerin üretimesi ve aygıt özelliklerinin belirlenmesi" (01.01.2012-31.12.2012)

CONFERENCE PRESENTATIONS (SELECTED ORAL PRESENTATIONS)

1	**Ö. Sürücü**, "A Theoretical and Experimental Study for CuSbSe2 Thin Films and Their Photovoltaic Applications" International Conference on Emerging Photovoltaic Materials and Technologies, (2022)-**Invited Speaker**
2	Ö. SÜRÜCÜ, "Thin film heterojunction solar cell based on CuSbSe2 absorber layer" 3rd International Symposium on Multidisciplinary Studies and Innovative Technologies-Ankara / Turkey (October, 2019)
3	Ö. SÜRÜCÜ , "Prediction of the best solar cell efficiency for Kesterite Solar Cell" 6th International conference on materials science and nanotechnology for next generation (MSNG2019) Niğde, TURKEY (October, 2019)
4	Ö. BAYRAKLI SÜRÜCÜ, M. TERLEMEZOĞLU, H.H. GÜLLÜ, D. E. YILDIZ, M. PARLAK, "Fabrication and Electrical Characterization of p-AgGa0.5In0.5Te2 Thin Film with Cd- Free Front Layer"

	TFD 34. Uluslararası Fizik Kongresi Bodrum/Turkey (September 2018)
5	Ö. BAYRAKLI SÜRÜCÜ; H. H. GÜLLÜ, İ. CANDAN, E. COŞKUN and M. PARLAK "Characterization of Ag-Ga-In-Te Thin Film Solar Cell", SATF 2014 Çeşme/Turkey (September 2014)
6	G. Surucu , Ö. Bayraklı , H. H. Gullu ,M. Terlemezoglu and M. PARLAK, "DEVICE BEHAVIOR OF CZTSE/SI NANOWIRE HETEROJUNCTION", PVTC 2017 Marseille/France (April 2017)
7	Ö. BAYRAKLI, H. H. GÜLLÜ, and M. PARLAK , "Device Measurement and analysis of Ag-Ga-In-Te based thin film heterojunction", Solar TR-3 Ankara/Turkey (April-2015)
8	O. Bayrakli, H. H. Gullu, M. Parlak, "$AgGa_xIn_{(1-x)}Te_2$ ince filmlerin üretilmesi ve aygıt özelliklerinin belirlenmesi", 21. Yoğun Madde Fiziği Ankara Toplantısı (YMF-21), Turkey, 2015
9	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
10	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 (ICCMMS-17), Turkey, 2017
11	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 (ICCMMS-17), Turkey, 2017

CITATIONS

Sum of times cited without self-citations (ISI Web of Science):	502
H-index (ISI Web of Science):	16

COURSES GIVEN

1	General Physics I-Mechanics (PHYS101)
2	General Physics II-Electricity and Magnetism (PHYS102)
3	Condensed Matter Theory (PHYS 515)
4	Physics of Semiconductor Devices (PHYS 516)

THESES SUPERVISED/CO-SUPERVISED

1	MS Thesis, Fabrication of Cu-doped Sb_2Se_3 thin films by electron beam and thermal Co-evaporation method for photovoltaic applications and their characterization, 2023.