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**RESUME**

**PERSONAL**

**EDUCATION**

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| --- | --- | --- | --- |
| **Degree** | **Institution** | **Area** | **Date** |
| B.S. | Abant İzzet Baysal University | Physics (English) | 2004-2009 |
| M.S. | Anadolu University | Physics / Solid State Physics | 2009-2012 |
| Ph.D. | Eskisehir Technical University | Material Science and Engineering | 2013-2019 |

**Research Areas of Interest**

* Investigation of inorganic nanoparticle synthesis, thin film production and optoelectronic properties
* Perovskite solar cells and photovoltaic characterizations

**Title of PhD Thesis**

The synthesis of new generation inorganic nanoparticles and their application as hole transport layer in perovskite solar cells

**AWARD(S) and HONOR(S)**

2020 – TUBITAK, BIDEB 2247-A – National Leading Researchers Programme

2018 – TUBITAK, BIDEB 2214-A – International Research Fellowship Programme (Laboratory of Photonics and Interfaces – LPI – EPFL, Switzerland / Supervisor : Prof. Michael Grätzel)

2017 – E-MRS Fall Meeting, Best Presentation Award

2017 – ICENTE’17, Best Presentation Award

2015 – Konya Technocity, University - Industry Collaboration Award

**PATENT(S)**

**Seckin Akin**, Maximilian Fleischer, Michael Graetzel, Hui-Seon Kim, Ji-Youn Seo, Elfriede Simon, Shaik Mohammed Zakeeruddin, **Organometallic perovskite solar cell, tandem solar cell, and manufacturing process therefor**, Application number: PCT/EP2019/068247 Internal case number: 2018P16571WOUS

**SCIENTIFIC PUBLICATIONS**

**A. Full Articles Published in Journals Scanned by SCI, SCI-Expanded, SSCI and AHCI**

1. E Akman, **S Akin\***,*“Poly (N, N′‐bis‐4‐butylphenyl‐N, N′‐bisphenyl) benzidine‐based interfacial passivation strategy promoting efficiency and operational stability of perovskite solar cells in regular architecture”*, **Advanced Materials**, 33 (2), 2006087, (2021). (IF=27.4)
2. **S Akin**,B. Dong, L. Pfeifer, Y. Liu, M. Graetzel, A. Hagfeld, *“Organic ammonium halide modulators as effective strategy for enhanced perovskite photovoltaic performance”*, **Advanced Science**, advs.202001244, 10.1002/advs.202004593, (2021). (IF=15.8)
3. A. E. Shalan, E. Akman, F. Sadegh, **S. Akin\***, "*Efficient and stable perovskite solar cells enabled by dicarboxylic acid supported perovskite crystallization*", **The Journal of Physical Chemistry Letters**, 12, 997-1004, (2021). (IF=6.7)
4. K. Valadi, S. Gharibi, R. Taheri-Ledari, **S. Akin**, A. Maleki, A. E. Shalan, "*Bare and doped metal oxide electron transport materials for effective perovskite solar cells*", **Environmental Chemistry Letters**, 20235009, 10.1007/s10311-020-01171-x, (2021). (IF=5.9)
5. E. Akman, A. E. Shalan, F. Sadegh, **S. Akin\***, *"Moisture-resistant FAPbI3 perovskite solar cell with 22.25% power conversion efficiency through pentafluorobenzyl phosphonic acid passivation",* **ChemSusChem**, 14, 10.1002/cssc.202002707, (2021). (IF=7.9)
6. **S. Akin**, N. Arora, S. M. Zakeeruddin, M. Grätzel, R. H. Friend, M. I. Dar, "*New strategies for defect passivation in high‐efficiency perovskite solar cells",* **Advanced Energy Materials**, 10 (13), 1903090, (2020).(IF=25.2)
7. T. Baumeler, N. Arora, A. Hinderhofer, **S. Akin**, A. Greco, M. Abdi-Jalebi, R.Shivanna, R. Uchida, Y. Liu, F. Schreiber, S. M. Zakeeruddin, R. H. Friend, M. Graetzel, M. I. Dar, "*Minimizing the trade-off between photocurrent and photovoltage in triple-cation mixed-halide perovskite solar cells*", **The Journal of Physical Chemistry Letters**, 11, 10188-10195, (2020). (IF=6.7)
8. S Sonmezoglu, **S Akin\***, “*Suppression of the ınterface-dependent nonradiative recombination by using 2-methylbenzimidazole as interlayer for highly efficient and stable perovskite solar cells*”, **Nano Energy**, 76, 105127, (2020). (IF=16.6)
9. **S Akin\***, E Akman, S Sonmezoglu, “*FAPbI3-based perovskite solar cells employing hexyl-based ıonic liquid with an efficiency over 20% and excellent long-term stability*”, **Advanced Functional Materials**, 30(28), 2002964, (2020). (IF=16.8)
10. F. Sadegh, **S. Akin\***, M. Moghadam, V. Mirkhani, M. A Ruiz‒Preciado, Z. Wang, M. M.Tavakoli, M. Graetzel, A. Hagfeldt, W. Tress, "*Highly efficient, stable and hysteresis‒less planar perovskite solar cell based on chemical bath treated Zn2SnO4 electron transport layer*", **Nano Energy**, 75, 105038, (2020). (IF=16.6)
11. **S. Akin**, Y. Liu, A. Hinderhofer, F. T. Eickemeyer, H. Zhu, J.-Y. Seo, J. Zhang, F. Schreiber, H. Zhang, S. M. Zakeeruddin, A. Hagfeldt, M. I. Dar, M. Gratzel, “*Stabilization of highly efficient and stable phase‐pure FAPbI3 perovskite solar cells by molecularly tailored 2D‐overlayers*”, **Angewandte Chemie**, 59(36), 15688-15694, (2020). (IF=13.0)
12. E Akman, **S Akin**, T Ozturk, B Gulveren, S Sonmezoglu, “*Europium and terbium lanthanide ions co-doping in TiO2 photoanode to synchronously improve light-harvesting and open-circuit voltage for high-efficiency dye-sensitized solar cells*” **Solar Energy**, 202, 227-237, (2020). (IF=4.7)
13. **S. Akin**, M. Bauer, R. Uchida, N. Arora, G. Jacopin, Y. Liu, D. Hertel, K. Meerholz, E. Mena-Osteritz, P. Bäuerle, S. M. Zakeeruddin, M. I. Dar, M. Grätzel, "*Cyclopentadithiophene-based hole-transporting material for highly stable perovskite solar cells with stabilized efficiencies approaching 21%*", **ACS Applied Energy Materials**, 3(8), 7456-7463, (2020). (IF=4.5)
14. **S. Akin\***, “*Boosting the efficiency and stability of perovskite solar cells through facile molecular engineering approaches*”, **Solar Energy**, 199, 136-142, (2020).(IF=4.7)
15. **S. Akin\***, "*Hysteresis-free planar perovskite solar cells with a breakthrough efficiency of 22% and superior operational stability over 2000 h",* **Acs Applied Materials & Interfaces**, 11(43), 39998-40005, (2019). (IF=8.8)
16. H.-S. Kim, J.-Y. Seo, **S. Akin**, E. Simon, M. Fleischer, S. M. Zakeeruddin, M. Grӓtzel, A. Hagfeldt, "*Power output stabilizing feature in perovskite solar cells at operating condition: Selective contact-dependent charge recombination dynamics",* **Nano Energy**, 61, 126-131, (2019). (IF=16.6)
17. **S. Akin**, Y. Altintas, E. Mutlugun, S. Sonmezoglu, "*Cesiumlead based inorganic perovskite quantum-dots as interfacial layer for highly stable perovskite solar cells with exceeding 21% efficiency",* **Nano Energy**, 60, 557-566, (2019). (IF=16.6)
18. N. Arora, M. I. Dar, **S. Akin**, R. Uchida, T. Baumeler, Y. Liu, S. M. Zakeeruddin, M. Grätzel, "*Low‐cost and highly efficient carbon‐based perovskite solar cells exhibiting excellent long‐term operational and uv stability",* **Small**, 15(49), 1904746, (2019). (IF=11.5)
19. **S. Akin**, F. Sadegh, S. Turan, S. Sonmezoglu, "*Inorganic CuFeO2 delafossite nanoparticles as effective hole transport material for highly efficient and long-term stable perovskite solar cells",* **Acs Applied Materials & Interfaces**, 11(48), 45142-45149, (2019). (IF=8.8)
20. **S. Akin**, Y. Liu, L. Pan, R. Uchida, N. Arora, J. V. Milić, A. Hinderhofer, F. Schreiber, A. R. Uhl, S. M. Zakeeruddin, A. Hagfeldt, M. I. Dar, M. Grätzel, "*Ultrahydrophobic 3D/2D fluoroarene bilayer-based water-resistant perovskite solar cells with efficiencies exceeding 22%",* **Science Advances**, 5, eaaw2543, (2019). (IF=13.6)
21. S. Vidal, M. Izquierdo, S. Filippone, I. Fernández, **S. Akin**, J. Y. Seo, S. M. Zakeeruddin, M. Grätzel, N. Martín, "*Site‐selective synthesis of β‐[70] PCBM‐like fullerenes: Efficient application in perovskite solar cells",* **Chemistry–A European Journal**, 25, 3224-3228, (2019). (IF=4.9)

1. S. Vidal, M. Izquierdo, S. Filippone, I. Fernández, **S. Akin**, J. Y. Seo, S. M. Zakeeruddin, M. Grätzel, N. Martín, "*Cover feature: Site‐selective synthesis of β‐[70] PCBM‐like fullerenes: Efficient application in perovskite solar cells",* **Chemistry–A European Journal**, 25, 3144-3144, (2019). (IF=4.9)
2. W. Xiang, Z. Wang, D. J. Kubicki, W. Tress, J. Luo, D. Prochowicz, **S. Akin**, L. Emsley, J. Zhou, G. Dietler, M. Grätzel, A. Hagfeldt, "*Europium-doped CsPbI2Br for stable and highly efficient inorganic perovskite solar cells",* **Joule**, 3, 205-214, (2019). (IF=27.1)
3. J.-Y. Seo, H.-S. Kim, **S. Akin**, M. Stojanovic, E. Simon, M. Fleischer, A. Hagfeldt, S. M. Zakeeruddin, M. Grätzel, "*Novel p-dopant toward highly efficient and stable perovskite solar cells",* **Energy & Environmental Science**, 11, 2985-2992, (2018). (IF=33.3)
4. **S. Akin**, Y. Liu, M. I. Dar, S. M. Zakeeruddin, M. Grätzel, S. Turan, S. Sonmezoglu, "*Hydrothermally processed CuCrO2 nanoparticles as an inorganic hole transporting material for low-cost perovskite solar cells with superior stability",* **Journal of Materials Chemistry A**, 6, 20327-20337, (2018). (IF=11.3)
5. I. C. Kaya, **S. Akin**, H. Akyildiz, S. Sonmezoglu, "*Highly efficient tandem photoelectrochemical solar cells using coumarin6 dye-sensitized CuCrO2 delafossite oxide as photocathode",* **Solar Energy**, 169, 196-205, (2018). (IF=4.7)
6. **S. Akin**, E. Erol, S. Sonmezoglu, "*Enhancing the electron transfer and band potential tuning with long-term stability of ZnO based dye-sensitized solar cells by gallium and tellurium as dual-doping",* **Electrochimica Acta**, 225, 243-254, (2017). (IF=6.2)
7. **S. Akin**, Y. Ulusu, H. Waller, J. H. Lakey, S. Sonmezoglu, "*Insight into interface engineering at TiO2/dye through molecularly functionalized Caf1 biopolymer",* **Acs Sustainable Chemistry & Engineering**, 6, 1825-1836, (2017). (IF=7.6)
8. **S. Akin**, S. Acikgoz, M. Gulen, C. Akyurek, S. Sonmezoglu, "*Investigation of the photoinduced electron injection processes for natural dye-sensitized solar cells:The impact of anchoring groups",* **Rsc Advances**, 6, 85125-85134, (2016). (IF=3.1)
9. **S. Akin**, M. Gulen, S. Sayin, H. Azak, H. B. Yildiz, S. Sonmezoglu, "*Modification of photoelectrode with thiol-functionalized calix[4]arenes as interface energy barrier for high efficiency in dye-sensitized solar cells",* **Journal of Power Sources**, 307, 796-805, (2016). (IF=8.2)
10. O. Ates Sonmezoglu, **S. Akin**, B. Terzi, S. Mutlu, S. Sonmezoglu, "*An effective approach for high‐efficiency photoelectrochemical solar cells by using bifunctional DNA molecules modified photoanode",* **Advanced Functional Materials**, 26, 8776-8783, (2016). (IF=16.8)
11. **S. Akin**, S. Sonmezoglu, "*Impact of copper-doped titanium dioxide interfacial layers on the interface-state and electrical properties of Si-based MOS devices",* **Metallurgical and Materials Transactions A**, 46, 4150-4159, (2015). (IF=1.9)
12. **S. Akin**, F. Ozel, M. Kus, S. Sonmezoglu, "*Improvement in electrical performance of half-metallic Fe3O4/GaAs structures using pyrolyzed polymer film as buffer layer",* **Philosophical Magazine**, 94, 2678-2691, (2014). (IF=1.6)
13. S. Acikgoz, Y. Ulusu, **S. Akin**, S. Sonmezoglu, I. Gokce, M. N. İnci, "*Photoinduced electron transfer mechanism between green fluorescent protein molecules and metal oxide nanoparticles",* **Ceramics International**, 2943–2951, (2014). (IF=3.6)
14. **S. Akin**, G. Karanfil, A. Gultekin, S. Sonmezoglu, "*Improvement of physical properties of CdO thin films by Au–Ag nanocluster codoping",* **Journal of Alloys and Compounds**, 579, 272-278, (2013). (IF=4.7)
15. S. Sonmezoglu, **S. Akin**, "*Current transport mechanism of antimony-doped TiO2 nanoparticles based on MOS device",* **Sensors and Actuators A: Physical**, 199, 18-23, (2013). (IF=2.9)
16. S. Sonmezoglu, T. Termeli, **S. Akin**, İ. Askeroglu, "*Synthesis and characterization of tellurium-doped CdO nanoparticles thin films by sol–gel method",* **Journal of Sol-Gel Science and Technology**, 67, 97-104, (2013). (IF=2.0)
17. **S. Akin\***, S. Sonmezoglu, "*Nanostructured TiO2 thin films: Synthesis and characterisations",* **Materials Technology**, 27, 342-349, (2012). (IF=0.4)
18. S. Sonmezoglu, **S. Akin**, "*High performance GaAs metal-insulator–semiconductor devices using TiO2 as insulator layer",* **Current Applied Physics**, 12, 1372-1377, (2012). (IF=2.3)
19. S. Sonmezoglu, C. Akyurek, **S. Akin**, "*High-efficiency dye-sensitized solar cells using ferrocene-based electrolytes and natural photosensitizers",* **Journal of Physics D: Applied Physics**, 45, 425101, (2012). (IF=2.9)
20. S. Sonmezoglu, R. Tas, **S. Akin**, M. Can, "*Polyaniline micro-rods based heterojunction solar cell: Structural and photovoltaic properties",* **Applied Physics Letters**, 101, 253301, (2012). (IF=3.6)

**B. Proceedings Presented in International Scientific Meetings**

1. **S. Akın**, “Addressing the stability issue of perovskite solar cells using low-cost CuSCN hole transporting material”, **6th International Conference on Materials Science and Nanotechnology for Next Generation (MSNG2019)**,16-18 November 2019, Niğde – Turkey (Oral Presentation)
2. **S. Akın**, “The effect of absorber layer thickness on the performance of perovskite solar cell”, **6th International Conference on VI. International Energy Technologies Conference (ENTECH’19)**,20 December 2019, İstanbul – Turkey (Oral Presentation)
3. **S. Akın**, N. Eczacıoğlu, B. Terzi, Y. Ulusu, Ö. Ateş Sönmezoğlu, S. Sönmezoğlu, “An insight into genetically modified energy – How DNA enhances photoelectrochemical solar cells”, **The European Materials Research Society (E-MRS) 2017 Fall Meeting and Exhibit**, 18−21 September 2017, Warsaw – Poland (Oral Presentation)
4. B. Tekin, M.Gülen, **S. Akın**, E.Akman, B. Çarbaş, F. Özel, S**.** Sönmezoğlu, “Solution processed Cu2XSnS4 (X= Zn, Mn, Ni, Fe, Co) photoelectrochemical solar cells via electrochemical process free-sulphurization”, **The European Materials Research Society (E-MRS) 2017 Fall Meeting and Exhibit**, 18−21 September 2017, Warsaw – Poland (Oral Presentation)
5. **S. Akın**, E. Erol, M. Gülen, E. Akman, B. Çarbaş, F. Özel, S. Sönmezoğlu, “Synthesis of CXTS (X= Mn2+, Ni2+) thin films by two-step electrodeposition and their application in DSSC as counter electrode”, **The European Materials Research Society (E-MRS) 2017 Fall Meeting and Exhibit,** 18−21 September 2017, Warsaw – Poland (Oral Presentation)
6. M. Gülen, E. Erol, **S. Akın**, S. Sönmezoğlu, “Co-electrodeposited Cu2(Co/Fe)SnS4 catalyst-based dye sensitized solar cells with over 5% efficiency”, **The European Materials Research Society (E-MRS) 2017 Fall Meeting and Exhibit,** 18−21 September 2017, Warsaw – Poland. (Oral Presentation)
7. İ. C. Kaya, **S. Akın**, S. Sönmezoğlu, H. Akyıldız, “*P-type dye sensitized solar cells based on Mg-doped CuCrO2 nanofiber*” **The European Materials Research Society (E-MRS) 2017 Fall Meeting and Exhibit**, 18−21 September 2017, Warsaw – Poland (Poster Presentation)
8. **S. Akın**, Y. Ulusu, H. Waller, J. H. Lakey,S. Sönmezoğlu,“Improved electron transfer and reduced recombination rate at TiO2/dye interface by Caf-1 protein in dye-sensitized solar cells”, **2nd International Conference on Nanotechnology and Nanomaterials in Energy (ICNNE2017)**, 07-09 June 2017, Lyon – France (Oral Presentation)
9. T. Öztürk, H. Arslan, **S. Akın**, B. Gülveren, S. Sönmezoğlu, “Investigation of the photocatalytic properties of terbium doped titanium dioxide thin films under visible light”, **International Congress on Semiconductor Materials and Devices (ICSMD-2017)**, 17-19 August 2017, Konya – Turkey (Oral Presentation)
10. H. Arslan, B. Gülveren, **S. Akın**, T. Öztürk, S. Sönmezoğlu,“Enhanced efficiency of dye sensitized solar cells by modified photoanode with europium doping*”*, **International Conference on Engineering Technologies (ICENTE’17)**,7-9 December 2017, Konya – Turkey (Oral Presentation)
11. İ. C. Kaya, **S. Akın**, H. Akyıldız, S. Sönmezoğlu, “Exploring on synthesis of p-type CuCrO2 nanoparticles and effect of  
    photocathode thickness on photovoltaic performance in tandem-dye  
    sensitized solar cells”,**3th International Nanoscience and Nanotechnology for Next Generation 2016 (NaNoNG 2016)**,20-22 October 2016, Antalya – Turkey (Oral Presentation)
12. **S. Akın**, S. Sönmezoğlu, “Fabrication of penternary Cu(In1–xGax)(Se1–yTey)2 thin film solar cells with 11.37% efficiency by hydrazine–free solution method”, **The European Materials Research Society (E-MRS)** **-** **2016 Fall Meeting and Exhibit**, 19-22 September 2016, Warsaw – Poland (Oral Presentation)
13. **S. Akın**, R. Taş, E. Erol, M. Can, S. Sönmezoğlu, “A high performance zinc-embedded poly(aniline) conducting polymer as catalyst material in dye-sensitized solar cells*”*, **The European Materials Research Society (E-MRS)** **-** **2016 Fall Meeting and Exhibit**, 19-22 September 2016, Warsaw – Poland (Poster Presentation)
14. **S. Akın**, I. C. Kaya, H. Akyıldız, S. Sönmezoglu, “Annealing effect on the performance of nanocrystal CuCrO2 photocathodes for tandem dye sensitized solar cell applications*”*, **The European Materials Research Society (E-MRS)** **-** **2016 Fall Meeting and Exhibit**, 19-22 September 2016, Warsaw – Poland (Poster Presentation)
15. T. Öztürk, H. Arslan, **S. Akın**, B. Gülveren, S. Sönmezoğlu,“Gallium-doped zinc oxide thin films: synthesis, characterization and  
    visible-light photocatalytic activity*”,* **3th International Nanoscience and Nanotechnology for Next Generation 2016 (NaNoNG 2016)**, 20-22 October 2016, Antalya – Turkey (Oral Presentation)
16. H. Yüngeviş, S. Açıkgöz, **S. Akın**, C. Akyürek, S. Sönmezoğlu, “Manipulationof the radiative decay rate of natural dye molecules by TiO2  
    nanoparticles*”,* **3th International Nanoscience and Nanotechnology for Next Generation 2016 (NaNoNG 2016)**,20-22 October 2016, Antalya – Turkey (Poster Presentation)
17. T. Öztürk, H. Arslan, **S. Akın**, B. Gülveren, S.  
    Sönmezoğlu,“Investigation of the photocatalytic properties of tellurium doped zinc oxide  
    thin films under visible light*”,* **2nd International Advanced and Functional Materials Technologies (AFMAT 2016)**,20-22 October 2016, Antalya – Turkey (Oral Presentation)
18. E. Turan, **S. Akın**, “Synthesis and characterization of SnO2 thin films deposited by spray pyrolysis technique”,**International Science and Technology Conference 2016 (ISTEC 2016)**, 13-15 July 2016, Wien – Austuria (Poster Presentation)
19. **S. Akın**, S. Sönmezoğlu, “A novel catalyst material as counter electrode in DSSCs: Cu(InGa)(SeTe)2 thin film”, **IV. International Energy Technologies Conference (ENTECH '16)**, 15-16 December 2016, İstanbul – Turkey (Oral Presentation)
20. E. Erol, **S. Akın**, R. Taş, M. Can, S. Sönmezoğlu, “A high−performance counter electrode based on polyaniline via incorporation of silver for Pt−free dye−sensitized solar cells”, **IV. International Energy Technologies Conference (ENTECH '16)**, 15-16 December 2016, İstanbul – Turkey (Poster Presentation)
21. **S. Akın,** R. Taş, **M. Gülen, E. Akman,** M. Can**,**F. Özel, **S. Sönmezoğlu,** “The effects of solvents on the photovoltaic performance of dye sensitized solar cells based on copper doped polyaniline as counter electrode”, **SolarTR-3**, 27-29 April 2015, Ankara – Turkey (Poster Presentation)
22. **A. Şahin, S. Akın,**T. Taşköprü**, S. Sönmezoğlu,** “Improved photovoltaic performance of dye-sensitized solar cells using GaxTe1-xZnO nanoparticles as effective photoanodes”, **SolarTR-3**, 27-29 April 2015, Ankara – Turkey (Poster Presentation)
23. R. Taş,**S. Akın, M. Gülen, E. Akman,**M. Can,**S. Sönmezoğlu,** “Synthesized in a diffrent solvent medium of aluminium doped polyaniline conducting polymers and its application in dye-sensitized solar cells as counter electrode”, **SolarTR-3**, 27-29 April 2015, Ankara – Turkey (Poster Presentation)
24. **S. Akın**, S. Sayın,**M. Gülen,**H. Azak, H. B. Yıldız,**S.Sönmezoğlu,** “Modification of titanium oxide electrode with thiol-functionalized calixarenes layer for high-performance of dye-sensitized solar cell**”**, **SolarTR-3**, 27-29 April 2015, Ankara – Turkey (Poster Presentation)
25. **S. Akın,** H. Yüngeviş, S. Açıkgöz, **S. Sönmezoğlu,** “Non–vacuum processed chalcopyrite CuInGa(SeTe)2 thin films: effect of pre– and post–annealing temperatures on photoinduced electron transfer efficiency”, **6th International Conference on Nanotechnology, Fundamentals and Applications (ICNFA16)**, 15-17 July 2015, Barcelona – Spain (Poster Presentation)
26. **S. Akın,** **S. Sönmezoğlu**, “Fabrication and temperature dependent electrical characterization of poly(EDOT–CO–TAA)/P–Si device in wide temperature range”, **1st International Conference on Organic Electronic Material Technologies (OEMT2015)**, 25-28 March 2015, Elazığ – Turkey (Poster Presentation)
27. B. Gülveren, T. Öztürk, **S. Akın, M. Gülen, S. Sönmezoğlu**, “Improving the efficiency of dye-sensitized solar cells using manganese doped TiO2 photoanodes”, **2nd International Nanoscience and Nanotechnology for Next Generation 2015 (NaNoNG 2015)**, 29-31 October 2015, Antalya – Turkey (Poster Presentaion)
28. B. Gülveren, T.Öztürk, **M. Gülen,** **S. Akın,** **S. Sönmezoğlu,** “The synthesis and characterization of cobalt doped thin films and their application on dye-sensitized solar cells as photoanodes”, **2nd International Nanoscience and Nanotechnology for Next Generation 2015 (NaNoNG 2015)**, 29-31 October 2015, Antalya – Turkey (Poster Presentation)
29. T. Öztürk, B.Gülveren,**S. Akın,** **A. Şahin, S. Sönmezoğlu,** “Investigation of the photocatalytic properties of manganese-doped TiO2 thin films”, **2nd International Nanoscience and Nanotechnology for Next Generation 2015 (NaNoNG 2015)**, 29-31 October 2015, Antalya – Turkey (Poster Presentation)
30. G. Karanfil, **S. Akın**, M. Gülen, S. Sönmezoğlu, “Enhanced photovoltaic performance of nanocrystalline CdTe solar cell using different morphologies of ZnO nanostructures”, **The International Conference on Science, Ecology and Technology I**, 25-28 August 2015, Wien – Austuria (Oral Presentation)
31. **M. Gülen, S. Akın,** Y. Ulusu, İ. Gökçe, **S. Sönmezoğlu,** J. H. Lakey, “**Bio-sensitized solar cell based on green fluorescent protein as a sensitizer**”, **International Workshop On Flexible Bio- and Organic Printed Electronics**, 1-3 May, 2014, Konya – Turkey (Poster Presentation)
32. S. Sönmezoğlu, M. Gülen, E. Akman, **S. Akın**,A. Gültekin, H. E. Ünalan, R. Turan, “Effect of annealing temperature on the physical properties of CdS thin films prepared by chemical bath deposition”, **International Nanoscience and Nanotechnology for Next Generation Conference 2014 (NaNoNG 2014)**, 20-22 August 2014, Elazığ – Turkey (Poster Presentation)
33. S. Sönmezoğlu, **S. Akın**, M. Gülen, E.Akman, A. Gültekin, H. E. Ünalan, R. Turan, “The effect of annealing temperature on the structural and morphological properties of CuInGaSeTe nanostructures grown by the sol-gel process”, **International Nanoscience and Nanotechnology for Next Generation Conference 2014 (NaNoNG 2014)**, 20-22 August 2014, Elazığ – Turkey (Poster Presentation)
34. **S. Akın,** C. Akyürek, H. Akış, S.Sönmezoğlu,“Fabrication of dye-sensitized solar cells with different counter electrodes and indigo natural dyes as photo-sensitizers”, **International Nanoscience and Nanotechnology for Next Generation Conference 2014 (NaNoNG 2014)**, 20-22 August 2014, Elazığ – Turkey (Poster Presentation)
35. E. Ünver, **S. Akın**,S. Sönmezoğlu“The influence of Cu–doped TiO2 oxide layer on electrical characteristic of MOS devices”, **International Nanoscience and Nanotechnology for Next Generation (NaNoNG) Conference**, 20-22 August 2014, Elazığ – Turkey (Poster Presentation)
36. S. Sönmezoğlu, M. Gülen, E. Akman, **S. Akın**,A. Gültekin, H. E. Ünalan, R. Turan, “Influence of Al concentrations on the physical properties of transparent conducting Al-doped ZnO thin films”, **Science and Applications of Thin Films, Conference & Exhibition (SATF 2014),** 15 – 19 September 2014, Çeşme (İzmir) – Turkey (Poster Presentation)
37. **S. Akın, S. Sönmezoğlu,** “**Synthesis and surface properties of Ga-Te co-doped ZnO nanorods**”, **International Porous and Powder Materials Symposium and Exhibition**, 03 – 06 September 2013, Çeşme (İzmir) – Turkey (Oral Presentation)
38. **S. Akın,** C. Akyürek, H. Akış, **S. Sönmezoğlu,** “**Natural juglon dye as a Photosensitizer for dye-sensıtızed solar cells**”, **International Porous and Powder Materials Symposium and Exhibition**, 03 – 09 Septemberl 2013, Çeşme (İzmir) – Turkey (Oral Presentation)
39. **S. Akın**, H. Akış, C. Akyürek, **S. Sönmezoğlu,** “**Modification of juglon dye by different metal adding and its applications as a sensitizer**”, **9th Nanoscience and Nanotechnology Conference**, 24 – 28 June 2013, Erzurum – Turkey (Poster Presentation)
40. **E. Akman, S. Akın, S. Sönmezoğlu,** “**Improvement of physical properties of ZnO thin films by tellurium doping**”, **9th Nanoscience and Nanotechnology Conference**, 24 – 28 June 2013, Erzurum – Turkey (Poster Presentation)
41. **S. Akın**, G. Karanfil, A. Gültekin, S. Sönmezoğlu, “Synthesis and surface characterizations of CdS QDs doped CdO thin films for photovoltaic devices” **SOLARTR-2**, 07-09 November 2012, Antalya – Turkey (Poster Presentation)
42. G. Karanfil, **S. Akın**, A. Gültekin, S. Sönmezoğlu, “Synthesis and Optical Characterizations of Au NPs doped CdO and TiO2 Thin Films for Solar Cells” **SOLARTR-2**, 07-09 November 2012, Antalya – Turkey (Poster Presentation)
43. **S. Akın**, B. Erdoğan, S. Sönmezoğlu, İ. Askeroğlu, “The investigation of optical, structural and morphological properties of boron doped TiO2 thin films”, **8th Nanoscience and Nanotechnology Conference,** 25-29 June 2012, Ankara – Turkey (Poster Presentation)
44. **S. Akın**, T. A. Termeli, S. Sönmezoğlu, İ. Askeroğlu, “The influence of Te doping on micro/structural, optical and morphologic properties of CdO thin ﬁlms prepared by sol-gel dip-coating process”, **8th Nanoscience and Nanotechnology Conference,** 25-29 June 2012, Ankara – Turkey (Poster Presentation)
45. T. Çırpar, **S. Akın**, G. Karanfil, A. Gültekin, S. Sönmezoğlu,“Determination of optical characteristics of CdS quantum dots-doped CdO thin films”, **8th Nanoscience and Nanotechnology Conference,** 25-29 June 2012, Ankara- Turkey (Poster Presentation)
46. G. Karanfil, T. Çırpar, **S. Akın**, A. Gültekin, S. Sönmezoğlu“Synthesis and optical characterizations of CdS quantum dots, Au and Au+Ag nanoparticles”, **8th Nanoscience and Nanotechnology Conference,** 25-29 June 2012, Ankara- Turkey (Poster Presentation)
47. **S. Akın**, G. Karanfil, T. Çırpar, A. Gültekin, S. Sönmezoğlu,“Optical constants of Au nanoparticles-doped TiO2 thin films by sol-gel spin coating method”, **8th Nanoscience and Nanotechnology Conference,** 25-29 June 2012, Ankara- Turkey (Poster Presentation)
48. G. Karanfil, **S. Akın**, A. Gültekin, S. Sönmezoğlu, C. Tozlu, “Optical characterizations of CdO-TiO2 compound thin films”, **Turkish Physical Society 29 th International Physics Congress,** 05-08 September 2012, Bodrum (Muğla)- Turkey (Oral Presentation)
49. **S. Akın**, C. Akyürek, A. Gültekin, S. Sönmezoğlu, “Enhancement of dye-sensitized solar cells”, **Turkish Physical Society 29 th International Physics Congress,** 05-08 September 2012, Bodrum (Muğla)- Turkey (Poster Presentation)
50. E. Turan, **S. Akın**, M. Kul, A. Ş. Aybek, M. Zor, S. Sönmezoğlu, “Structural and optical characterization of SnO2 films deposited by spray pyrolysis method”, **7th Nanoscience and Nanotechnology Conference,** 27 June - 1 Temmuz 2011, İstanbul – Turkey (Poster Presentation)
51. **S. Akın**, T. A. Termeli, B. Erdoğan, M. Koç, E. Turan, S. Sönmezoğlu, “The influence of antimony doping on optical properties of TiO2 nanoparticles thin films”, **Turkish Physical Society 28 th International Physics** **Congress**, 06-09 September 2011, Bodrum (Muğla) – Turkey (Poster Presentation)
52. T. A. Termeli, B. Erdoğan, M. Koç, **S. Akın**, İ. Askeroğlu,E. Turan, S. Sönmezoğlu, “Optical characterizations of aliminium doped TiO2 nanoparticles thin films Obtained by Sol-Gel Dip Coating”, **Turkish Physical Society 28 th International Physics Congress,** 06-09 September 2011, Bodrum (Muğla) – Turkey (Poster Presentation)
53. B. Erdoğan, M. Koç, **S. Akın**, T. A. Termeli, İ. Askeroğlu,E. Turan, S. Sönmezoğlu, “The determination of optical constants of pure and copper doped TiO2 nanoparticles thin films”, **Turkish Physical Society 28 th International Physics Congress,** 06 – 09 September 2011, Bodrum (Muğla)- Turkey (Poster Presentation)
54. M. Koç**, S. Akın**, T. A. Termeli, B. Erdoğan,E. Turan, S. Sönmezoğlu, “The influence of aluminium, copper and antimony doping on structural properties of TiO2 nanoparticles thin films”, **Turkish Physical Society 28 th International Physics Congress,** 06- 09 September 2011, Bodrum (Muğla) – Turkey (Poster Presentation)

**C. Books / Book Chapters**

**1. S**. **Akin**,S. Sonmezoglu, (2018). Metal Oxide Nanoparticles as Electron Transport Layer for Highly Efficient Dye-Sensitized Solar Cells. Cheong, K.Y., Impellizzeri, G. and Fraga, M.A. (Editors), *Emerging Materials for Energy Conversion and Storage* (pg. 39-79). Amsterdam: Elsevier.

**2.** I. C. Kaya, **S**. **Akin**,S. Sonmezoglu, (2021). Future Perspectives on Perovskite Solar Cells: Metal Oxide-based Inorganic Hole Transporting Materials. K.-Y.Cheong, L.-C. Chen (Editors),  *Sustainable Materials for Next Generation Energy Devices* (pg. 181-219). Amsterdam: Elsevier.

**COMPLETED / ONGOING RESEARCH PROJECTS**

1. *"Fabrication of Large-Area and All Printable Perovskite Solar Modules", TÜBİTAK-2247-A National Leading Researchers Program, Project No: 120C126, Executive, (March 2021* – *March 2024). (1.346.520 TL)*
2. *“Development of Highly-Efficient and Stable Perovskite Solar Cells”,* TÜBİTAK-1001, Project No: 119F185, **Executive**, (February 2020 – July 2022). (676.215 TL)
3. “*Production of Mesoporous SnO2 Electron Transporting Material and Applications in Perovskite Solar Cells*”, TÜBİTAK-1002, Project No: 120M820, **Evecutive**, (November 2020 – November 2021). (45.000 TL)
4. *“Synthesis of New Generation Inorganic Nanoparticles and Applications in Perovskite Solar Cells as Hole Transporting Layer”,* Anadolu University BAP, Project No: 1610F667, **Researcher**, (January 2016 – February 2019). (40.000 TL)
5. *“Synthesis of New Generation CuMSnS4 (M=Zn2+,Co2+,Fe2+,Mn2+,Ni2+) Thin Films by Electrochemical Method and Dye-Sensitized Solar Cell Applications as Counter Electrodes”,* (COST) European Cooperation in Science and Technology - TÜBİTAK Project No: 115M762, **Fellow**, (November 2015 – November 2017). (358.228 TL)
6. *“Synthesis of Terbium Doped Titanium Dioxide Nanoparticles by Hydrothermal Method and Investigation of Their Photocatalytic Properties”,* Selçuk University BAP, Project No: 16401045, **Researcher**, (June 2016 – June 2017). (17.500 TL)
7. *“Magnification, Characterization and Investigation of Dye-Sensitized Solar Cell Applications of Thulium (Tm+3) doped TiO2 Films”,* Selçuk University BAP, Project No: 15401110, **Researcher**, (October 2015 – October 2017). (23.000 TL)
8. *“Synthesis and Characterization of Alloy CdTeSe Quantum Dots”,* Karamanoğlu Mehmetbey University BAP, Proje No: 14-M-13, **Researcher**, (May 2014 – May 2015). (14.750 TL)
9. *“Growth, Characterization and Investigation of Solar Cell Applications of Cu(In1-xGax)(Se1-yTey) (CIGST) Semiconductor Thin Films by Sol-Gel Method”,* (COST) European Cooperation in Science and Technology - TÜBİTAK Project No: 112T981, **Fellow**, (April 2013 – October 2015). (300.000 TL)
10. *"Production and Characterization of CdTe/ZnO Heterojunction Solar Cells",* Karamanoğlu Mehmetbey University BAP, Project No: 05-M-14, **Researcher**, (July 2014 – December 2015). (20.000 TL)
11. *“Synthesis of Chalcoprite Cu(AlxGa1-X)Se2 (CAGS) Thin Films by Sol-Gel Method and Investigation of Photoconductivity Properties”,* TÜBİTAK-1002 Project No: 113F190, **Researcher**, (August 2013 – August 2014). (30.000 TL)
12. *“Obtaining Natural Dyestuffs From Walnut (Juglans regia) Fruit Outer Shell and Investigation of Solar Cell Potential”,* Karamanoğlu Mehmetbey University BAP, Project No: 28–M–12, **Researcher**, (February 2012 – February 2013). (18.500 TL)
13. *“Investigation of Solar Power Generation Efficiency in Karaman Province”,* Mevlana Development Agency Direct Activity Support Project, MEVKA-DFD-07, **Expert**, (May 2012 – May 2013). (72.930 TL)
14. *“Determination Of Drying Behavior and Dielectric Properties of Some Apple Varieties Grown in Karaman Province”,* Karamanoğlu Mehmetbey University BAP, Project No: 40-M-12, **Researcher**, (May 2012 – May 2013). (29.850 TL)
15. *“Synthesis of GaxTe1-xZnO Nanoparticles and Solar Cell Applications”,* Karamanoğlu Mehmetbey University BAP, Project No: 30–M–12, **Researcher**, (May 2012 – May 2013). (16.000 TL)
16. *“Investigation of Optical, Structural and Morphological Properties of Aluminum, Antimony and Copper Doped Nano Particle TiO2 Thin Films Obtained by Sol-Gel Method”,* Karamanoğlu Mehmetbey University BAP, Project No: 23-M-11, **Researher**, (February 2011 – February 2012). (22.000 TL)

**Reviewer for International Publications**

* Advanced Materials
* Advanced Functional Materials
* Chemical Society Reviews
* Green Energy & Environment
* Journal of Materials Chemistry A
* RSC Advances
* Solar Energy
* ACS Applied Materials & Interfaces
* ACS Applied Energy Materials
* Superlattices and Microstructures
* Advanced Optical Materials
* Surface and Interface Analysis
* Journal of Photovoltaics

**Scientific Committee Membership in International Conferences**

* 2nd International Conference on Energy, Power and Environmental System Engineering (ICEPESE2021), July 4-5, 2021, Shanghai, China.
* The 10th Global Conference on Materials Science and Engineering (CMSE 2021), August 1-4, 2021, Kyiv, Ukraine.
* International Conference on New Energy, Power and Environmental. Engineering (NEPEE2020), December 21-22, 2020, Xiamen, China.