Curriculum Vitae of Mehdi Adelifard February 2021

Contact Details:

Name: Mehdi Adelifard

Date Of Birth: June 7th 1980

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Education:

- 2012, PhD. in solid state physics, Shahrood University of technology, Iran (Thesis Supervisors: Prof. H. Eshghi and Associated Prof. M. M. Bagheri Mohagheghi)
- 2008, MS. in Solid State Physics, Mashhad University, Iran
- 2005, B.S. in atomic physics, Shiraz University, Iran

Teaching experience:

January 2013 – Present

Graduate courses: "Nanophysics and nanotechnology devices", "Analysis of Nanostructures"

Undergraduate courses: "Fundamental Physics", "Optics & Wave", "Analytical Mechanics", "Geometric Optics"

Research Interests:

- Perovskite, Thin films and organic Solar cells
- Synthesis and Characterization of nanostructures and semiconductor thin films
- Nano Electronics
- Spintronic
- Physics and chemistry of materials
- Magneto optical Properties of materials
- Physical and chemical properties of carbon aerogels prepared by different drying methods for absorbing of organic material

Supervisor in PhD and MSc thesis:

- Study of the parameters of the deposition layer and factors effecting the production and operation of MAPbI perovskite solar cell (Phd student thesis, 2016-present)
- Synthesis, optimization and fabrication of perovskite solar cell based on free lead AgBiI active layer (2017-present)
- Study on factor effecting of fabrication of MAAgBiI perovskite solar cell (2017-present)
- Synthesis and study on nanostructural and non-linear properties of SiO2-Go compound

semiconductor (2017-2017)

- Synthesis and study on physical properties of Sb2S3 and CuSbS as absorber layer in thin film solar cells (2016-2017)
- Fabrication of WS2-CuS thin films (2016-2017)
- Fabrication and investigation on the physical properties of alumina and silica aerogels (2015-2017)
- Preparation, characterization and study on properties of cellulose /graphene oxide and cellulose/reduced graphene oxide composite aerogels; and cellulose aerogel containing magnesium hydroxide nanostructure (2015-2016)
- Synthesis of silicon powder from SiO_2 (2015-2016)
- Synthesis and study of the properties of water-based super absorbent minerals and polysaccharides (2015-2016)
- Synthesis and investigation on the physical properties of nanostructured compounds based on tungsten oxide and tungsten sulfide (2014-2015)
- investigation on physical properties of molybdenum oxide-molybdenum sulfide nanostructured thin films prepared by spray pyrolysis technique (2014-2015)
- preparation and structural and optical characterization of graphene oxide (GO) and graphene (G) (2014-2015)
- An Investigation on physical properties of silver sulfide (Ag2S) nanostructures thin films prepared by spray pyrolysis (2013-2014).
- Physical properties of nanostructured thin films based on copper and aluminum oxide prepared by spray pyrolysis technique (2013-2014).

Research projects:

- A Study in Doping and Annealing Effects On Structural, Electrical and Optical Properties in Transparent Conductor, SnO_2, Thin Films (Research project, Code:24025, This project has been supported by Shahrood University of Technology, Research Department, Shahrood, Iran) (March 2010)
- Spray deposited Cu2ZnSnS4 nanostructured absorber layer: a promising candidate for solar cell applications. This project has been supported by Damghan University, Research Department, Damghan, Iran) (September 2015), Selected research by IRAN Nanotechnology Initiative Council

Professional & Scientific Membership:

- Member of the editorial board of Nanoscience and Nano engineering Journal, Horizon Research Publishing, USA, August 2014-Present.
- Iranian Physics Society

- Iranian Optics & Photonics Society

SCIENTIFIC BACKGROUND

ISI Journal Papers:

1. S. S. Hosseini, M. Adelifard, "The Impact of Cesium and Antimony Alloying on the Photovoltaic Properties of Silver Bismuth Iodide Compounds" Physica Status Solidi a, Online Published, February 2021.
2. M. Ataei, M. Adelifard, S. S. Hosseini, "Physical Properties and Photovoltaic Performance of Perovskite Solar Cells Based on Lead-Free A3Bi2I9 (A = CH3NH3, Cs) Active Layers", Journal of Electronic Materials, Online Published, November 2020.
3. S. S. Hosseini, M. Adelifard, "The Effect of Multi-Walled Carbon Nanotubes and Reduced Graphene Oxide Doping on the Optical and Photovoltaic Performance of Ag2BiI5-Based Solar Cells, Journal of ELECTRONIC MATERIALS, Vol. 49, No. 10, 2020.
4. Ali Ebrahimi, Behnaz Dahrazma & Mehdi Adelifard, "Facile and novel ambient pressure drying approach to synthesis and physical characterization of cellulose-based aerogels" Journal of Porous Materials (2020) 27:1219–1232.
5. S. S. Hosseini, M. Adelifard, M. Ataei, 'An investigation on physical properties of Ag2BiI5 absorber layers synthesized by microwave assisted spin coating technique', J Mater Sci: Mater Electron, 30 (2019) 5021.
6. M. Alimoradi, M. Adelifard, 'An investigation on the effect of substrate temperature and substrate type on physical properties of Sb2S3 thin films prepared by spray pyrolysis', Journal of Analytical and Applied Pyrolysis 140 (2019) 205.
7. H. Darabi, M. Adelifard, Y. Rajabi, 'Characterization of nonlinear optical refractive index for graphene oxide-Silicon oxide nanohybrid composite' JNOMP 28 (2019).
8. M. Adelifard, 'Preparation and characterization of Cu_2FeSnS_4 quaternary semiconductor thin films via the spray pyrolysis technique for photovoltaic applications', Journal of Analytical and Applied Pyrolysis 122 (2016) 209–215.
9. M. Adelifard, M. Jahandoost, "Synthesis of MoS2/MoO3 compound thin films using spray pyrolysis technique and investigation on annealing treatment effect on their physical properties", Journal of Research on Many-body Systems, Volume 7, Number 15, winter 2017
10. M. Adelifard, H. Darrudi, 'A facile fabrication of chemically converted graphene oxide thin films and their uses as absorber materials for solar cells', Applied Physics A, 122 (2016) 682.
11. M. Adelifard, M. Jahandoost, 'Impact of sulfur concentration on morphological, optical, electrical and thermoelectrical properties of nanostructured MoO_3 thin films', J Mater Sci: Mater Electron, 27 (2016) 5427.
12. M. Adelifard, R. Salamatizadeh, S.A. Ketabi, 'Fabrication and characterization of nanostructural WS2/WO3 binary compound semiconductors prepared by the sulfurization of sprayed thin films', J Mater Sci: Mater Electron, 27 (2016) 5443.
13. M. Adelifard, 'Nanostructured Cu_2ZnSnS_4 thin Films: Influence of substrate temperature on structural, morphological, optical and electrical properties', Applied Physics A, 121 (2015) 95.

14. M. Adelifard, R. torkamani, 'Spray deposited Cu_2ZnSnS_4 nanostructured absorber layer: a promising candidate for solar cell applications', J Mater Sci: Mater Electron 26 (2015) 3700.

15. M. Adelifard, R. torkamani, 'Influence of growth temperature and silver to sulfur molar ratios on optical, electrical and thermoelectrical properties of nanostructured Ag_2S thin films', J Mater Sci: Mater Electron, 26 (2015) 7554.

16. M. Adelifard, M. M. Bagheri Mohagheghi, S. Namavar, 'Study of structural, morphological and optical properties of S and Cu co-doped SnO2 nanostructured thin films prepared by spray pyrolysis', Int. J. Mater. Res. (formerly Z. Metallkd.) 105 (2014) 11.

17. M. Adelifard, M. M. Bagheri Mohagheghi, H. Eshghi, "Preparation and characterization of Cu_2SnS_3 ternary semiconductor nanostructures via spray pyrolysis technique for photovoltaic applications" (Phys. Scr. 85 (2012) 035603).
18. M. Adelifard, H.Eshghi, M.M.Bagheri Mohagheghi, "Comparative Studies of spray pyrolysis deposited Copper Sulfide Nanostructural Thin Films on glass and FTO coated glass" (Bulletin of Material Science, 35 (2012) 739.

19. M. Adelifard, H.Eshghi, M.M.Bagheri Mohagheghi, " An investigation on substrate temperature and copper to sulphur molar ratios on optical and electrical properties of nanostructural CuS thin films prepared by spray pyrolysis method" (Applied Surface Science 258 (2012) 5733– 5738)

20. M. Adelifard, H.Eshghi, M.M.Bagheri Mohagheghi, "Synthesis and characterization of nanostructural CuS-ZnS binary compound thin films prepared by spray pyrolysis" (Optics communications, 285 (2012) 4400–4404)

21. M. Adelifard, H.Eshghi, M.M.Bagheri Mohagheghi, "Comparative Studies of spray pyrolysis deposited Copper Sulfide Nanostructural Thin Films on glass and FTO coated glass" (Bulletin of Material Science, 35 (2012) 739.

22. H. Eshghi, A. Biaram, M.Adelifard, "An investigation on impurity and grain boundary effects on structural, optical and electrical properties of SnO_2:F thin films deposited by spray pyrolysis" (Modern Physics Letters B, Vol.25, No. 17 (2011) 1473-1485)

23. E. Attaran Kakhki, M.Adelifard, "Magneto-optic properties and optical parameter of thin MnCo films", Iranian Journal of Physics Research, 9:2 (2009).

Symposium Proceedings:

- O. Malekan. M.M. Bagheri Mohagheghi, "Synthesis and characterization of PbI and MAI perovskite absorber layer for solar cells" (Conference on nanostructured solar cells (NSSC96, Sharif University of Technology, Iran, December,2017)

- H. Darrudi, M. Adelifard, "Synthesis, characterization and study of the structural, morphological and optical Graphene oxide (GO) and Reduced Graphene Oxide (RGO)", (23rd Symposium of Crystallography and Mineralogy of Iran, January 2016).

- M. Jahandoost, M. Adelifard, "Influence of Chemical reduction processes on the surface and optical properties of nanostructures Sulfur doped molybdenum trioxide semiconductor", (23rd Symposium of Crystallography and Mineralogy of Iran, January 2016).

- R. Salamatizadeh, M. Adelifard, S.A. Ketabi, "Synthesis and investigation on structural, morphological and optical properties of nanocrystallite tungsten oxide (WO_3) prepared by sol-gel method", (23rd Symposium of Crystallography and Mineralogy of Iran, January 2016).

- M. Jahandoost, M. Adelifard, "Study of annealing effect in H_2S atmosphere on structural and optical properties of molybdenum trioxide semiconductors" (22th Iranian Conference on Optics and Photonics, January 2016).

- R. Salamatizadeh, M. Adelifard, S.A. Ketabi, "Investigation on structural, morphological and optical properties of WO_3/ WS_2 compound semiconductor thin films, (22th Iranian Conference on Optics and Photonics, January 2016).

- M. Adelifard, "CZTS absorbing layer prepared using spray pyrolysis technique: A potential candidate for photovoltaic applications, (12th Iranian annual Conference on Condensed Matter, 27-28 January 2015)

- Rohallah Torkamani, M. Adelifard, Mahdi Ardyanian, "Synthesis and characterization of Ag_8SnS_6 ternary compound semiconductors by spray pyrolysis technique (12th Iranian annual Conference on Condensed Matter, 27-28 January 2015)

- M. Azizi, M.R. Fadavi eslam, M. Adelifard, "Study on the annealing temperature effect on structural and optical properties of copper-aluminium oxide binary compound semiconductor prepared by spray pyrolysis technique" (12th Iranian annual Conference on Condensed Matter, 27-28 January 2015)

- M. Azizi, M.R. Fadavi eslam, M. Adelifard, "Study on the substrate temperature effect on structural and optical properties of nanostructured copper oxide thin films prepared by spray pyrolysis", (Iranian annual conference physics, September 2014)

- Rohallah Torkamani, M. Adelifard, Mahdi Ardyanian, "The effect of substrate temperature and sulfur concentration on the structural, optical and morphological properties of nanostructured Ag_2S thin films prepared by spray pyrolysis" (Iranian annual conference physics, September 2014)

- M. Adelifard, Rohallah Torkamani, Mahdi Ardyanian, "The effect of silver and sulfur concentrations on the structural and optical properties of silver sulfide thin films deposited by spray pyrolysis method", (1th Iranian Conference on Nanotechnology, May 2013)

- M. Adelifard, Hosein Eshghi, Mohamad Mehdi Bagheri Mohagheghi, "A study on the substrate temperature effect on optical and structural properties of copper sulphide thin films prepared by spray pyrolysis" (10th Iranian annual Conference on Condensed Matter, 27-28 January 2011)

- M. Adelifard, Hosein Eshghi, Mohamad Mehdi Bagheri Mohagheghi, "The effect of sulphur concentration on structural and optical properties of copper sulphide thin films deposited by spray pyrolysis" (17th Iranian Conference on Optics and Photonics, International Center for Science, High Technology & Environmental Sciences, 8-10 February 2011)

- M. Adelifard, Hosein Eshghi, Mohamad Mehdi Bagheri Mohagheghi, "Structural, optical and electrical properties of copper sulfide thin films deposited by spray pyrolysis on glass and FTO coated glass, a camparison", (5th International Conference on Amorphous and Nanostructured Chalcogenides, Bucharest, June26-July1, 2011)

- Ebrahim Attaran Kakhki, Mehdi Adelifard, "Study of magneto – optical kerr effect in Mn-Co thin films" (2th Iranian conference of physics Research, Summer 2007)

- Ebrahim Attaran Kakhki, Mehdi Adelifard, Mohamad Mehdi Bagheri Mohagheghi, "Magneto – optical properties of Mn-Co thin films prepared by spray pyrolysis" (Iranian annual conference physics, Summer 2007)