

Resume

Prof. Dr. Manal Midhat Abdullah

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Work: Iraq- Baghdad
University of Baghdad
College of Science
Dept. of Physics



Education

- **2001: Post Doctorate in Medical Physics/Physiology dept. / Iraqi College of Medicine/ Al-Nahrain University, Baghdad-Iraq. (laser in medicine). (laser Assisted Erythrocyte Aggregometry as a Predictor of Angiopathy in Diabetic Patents).**
- **1998: Ph.D. in Physics of Laser and molecular physics from Baghdad University/ College of Science/ Physics department. (molecular physics and laser).**
- **1989: M.Sc. in Applied Physics from University of Technology, Baghdad. (applied physics).**
- **1984: B.Sc. in Physics, College of Science, Al-Mustansirya University, Baghdad (one of the top ten graduated students).**

Professional Employment

2003- Present Physics Dept., College Science, Baghdad University,
Iraq, professor

- 1998- 2003 **Head of medical physics dept. /Al-Kindy College of Medicine, Uni. of Baghdad, Iraq.**
- 1989-1991 Al- Mustansriya University, College of Education, Physics Dept., Baghdad, Iraq.
- 1991-1998 Al- Mustansriya University, College of Science, Physics Dept., Baghdad, Iraq, (M.Sc.)
- 1984-1989 The Scientific Research Council, Solar Energy Research Centre, Baghdad, Iraq. Assistant researcher
- 2006-2007 **Amman Al-Ahlyia University, Amman , Jordan /College of Engineering. And Al-Israaa University, Amman, Jordan, College of Basic Science and I.T / Visitor Lecturer**

Work Experience

During my 33 years of research and education career,

- Joined one month training in the national institute of optics (INO) in Florence, Italy (2014).
- **Patent:** solar cell enhancement by using luminescent solar concentrator (1995)
- **Patent:** Self-removing of the deposited dust from the surfaces of the solar cells by using a direct current to charge a home- made conductive glass . (number 4214 24/5/2015).
- **Patent under revision:** A New System for Self-Removal of Accumulated Dust on the Surfaces of Solar Cells Using Direct Current and Conductive Glass.
- **Covering many physical subjects for post graduate and under graduate students (theoretical and practical lectures); including lectures in (laser in dentistry) for Ph.D. students in Baghdad Uni. College of Dentistry (2015- 2016).**
- **One year lecturing experience in the Amman Alahliya uni./ College of Engineering/ Dept. of Medical Engineering / Jordan.**
- Supervisor of M.Sc. and Ph.D. letters.
- Supervisor of undergraduate projects for B. Sc. students.

- Examination committee for Ph. D . thesis and M.Sc. letters
- Organizer of many scientific events.
- Team of establishing the medical schools curriculum for medical colleges in Iraq (united nations program) (1999-2001).
- Establishing the medical physics laboratory for under graduate students in Al- Kindy College of Medicine, Baghdad University, Iraq.
- Member of the establishing team for the material science laboratory in the Laser and Plasma Institute for Postgraduate Students, Iraq (1996).
- Member of the establishing team of dust pollution laboratory in the Solar Energy Research Centre, Scientific Research Council, Baghdad, Iraq(1985).

Current Research Interest

- **Medical Physics.**
- Applied physics
- Solar energy

Patents

- 1995 New System for enhancing the efficiency of the silicon solar cell by Luminescence Solar Collector.(number 2574 31/10/1995).
- 2015 Self-removing of the deposited dust from the surfaces of the solar cells by using a direct current to charge a home- made conductive glass . (number 4214 24/5/2015).
- 2015 (A New System for Self-Removal of Accumulated Dust on the Surfaces of Solar Cells Using Direct Current and Conductive Glass). Under revision.
- 2018 plasma electro-dynamic discharge grid (PEDG) for solar cell's applications
- Writing a new patent: Enhancement of Nanoparticles Photoconductive Detector by adding a conductive Polymer.

Publications

1. Porous Silicon effect on the performance of CdS nanoparticles photodetector

2. Enhancement of CdS nanoparticles' photoconductive detector
3. by adding TPD conductive polymer
4. efficiency enhancement of flexible dye solar cell using TiO₂ nanotube ZnS nanoparticles photoanode . Asian Journal of Chemistry 30 (6), 1374-138

5. Effect of High pH Variation on the Structural and Optical Properties of ZnS Nanoparticles Prepared by Chemical Route. Aust. J. Basic & Appl. Sci., 11(7): 29-36, 2017.

6. Structural and Optical Properties of SnO₂ Thin Films for Conductive Glass (12 x12cm)² by Thermal Spray Method. International Journal of Sciences: Basic and Applied Research (IJSBAR), (2019) Volume 36, No 7, pp 62-69.

7. Nonlinear optical properties of Polythiophene and iodine doped thin films by aerosol assisted plasma jet polymerization at atmospheric pressure. International Journal of Sciences: Basic and Applied Research (IJSBAR), (2019) Volume 36, No 7, pp 70-80.

8. Effect of Annealing and Deposition Temperature on Structural Properties of CdTe Thin Films Prepared by Thermal Evaporation Method, 2015, Indian journal of applied research 3 (2).

9. Nonlinear optical properties of Polythiophene and iodine doped thin films by aerosol assisted plasma jet polymerization at atmospheric pressure. International Journal of Sciences: Basic and Applied Research (IJSBAR)

10. Efficiency Investigation of (TiO₂)_{1-x}CdO_x Hetero-Junction Solar Cells Prepared by Pulse Laser Deposition Technique.

11. Evaluating a Self-Charging Electrostatic Dust Shield for Solar Cell applications in Baghdad Outdoor weather (unpublished).

12. Porous Silicon effect on the performance of CdS nanoparticles photodetector, International Journal of Current Engineering and Technology, Vol.6, No.4 (Aug 2016).

13. SnO₂ Transparent grid Self- Cleaning Dust Shield for Solar Panels, [International Journal of Current Engineering and Technology, Vol.4, No.6 (Dec 2014) , 5
14. Nonlinear Optical Properties of Polyaniline Iodine Doped Thin Films prepared by Aerosol Assisted Plasma Jet Polymerization at Atmospheric Pressure , International Journal of Current Engineering and Technology, Vol.5, No.5 (Oct 2015), p. 3305.
15. plasma electro-dynamic discharge (PED) as a dust shield for solar panels, Asian Academic Research Journal of Multidisciplinary
16. AARJMD 2016, vol 3 , Issue 6 (JUNE) ISSN : 2319 – 2801.
17. Temperature effect on refractive indices and order parameter for mixture liquid crystal (UCF), Australian Journal of Basic and Applied Sciences, 9(2) February 2015, Pages: 331-338
18. Analysis of repulsed dust from electrostatic curtain , using different voltage, Journal of Zankoi Sulaimani Part-A- (Pure and Applied Sciences) , 17-1,2015.
19. Magnetic Field Effect on the Refractive Index of High Birefringence Liquid Crystal, the journal of Babil uni.- Iraq.
20. Analysis of adhesion of dust particles on glass surfaces, International Journal of Application or Innovation in Engineering & Management (IJAIEM) Volume 3, Issue 8, August 2014.
21. Effect of Iodine Doping on the Characteristics of Polyaniline Thin Films prepared by Aerosol Assisted Plasma Jet Polymerization at Atmospheric Pressure. International Journal of Current Engineering and Technology, Vol.4, No.5 (Oct 2014) .
22. Effect of iodine doping on the characteristics of plasma polymerized Monoaniline thin films.
23. Effect of Iodine Doping on the Characteristics of Polythiophene Thin Films prepared by Aerosol Assisted Plasma Jet Polymerization at Atmospheric Pressure. Iraqi journal of physics, vol.12, no.25, 2014

24. Effect of Doping and Grain Size on Butane gas sensing properties of In_2O_3 doped SnO_2 Sensor". Indian Journal of Energy , International Journal of World Research Vol: I Issue VI, June 2014
25. I-V Characteristics of ITO/CdTe/ Al_2O_3 /Si/Au Thin Film Solar Cell", vol. 4, no.3,2014,pp 1926-1929
26. SnO_2 Transparent Self- Cleaning Dust Shield for Solar Panels, International Journal of Application or Innovation in Engineering & Management (IJAEM), Volume 2, Issue 11, November 2013.
27. Effect of Annealing Temperature on the Optical Properties of Spin Coated CdS/PVA Thin Films, International Journal of Scientific & Engineering Research, Volume 4, Issue 12, December-2013.
28. Coupling Organic and Inorganic luminescent concentrator for Solar Cells: A New Method to Optimize Energy from Sun , Indian jor. of applied research Volume : 3, Issue : 2 |February 2013.
29. Fabrication and Studying the Characteristics of ITO/CdTe/Si/Au Thin Film Solar Cell , International Journal of Physics and Research (IJPR), Vol. 3, Issue 2, Jun 2013, 55-62.
30. Measuring the quality of higher education Graduates from the viewpoint of the university and some sectors of society - an analytical study", The Conference of Integration Between the Outcomes of Education and Labor Market in Public and Private Sectors, Amman ,Jordan, 13-16 may, 2013.
31. Fabrication and Testing of SnO_2 Thin Films as a Gas Sensor", Scholars Research Library Archives of Applied Science Research, 2012, 4 (3):1279-1288
32. Fabrication of SnO_2 Thin Films for H_2 Gas Sensing", 5th. Scientific Conference, Uni. of Wassit, Iraq, 13- 14 Dec. , 2012.
33. Investigation of Optical Properties of the PbS/CdS Thin films by thermal Evaporation", Journal of Electron Devices, Vol. 12, 2012, pp. 761-766

34. Structural, Electrical and Photoluminescence Properties of In₂O₃-Doped SnO₂", Journal of Chemical, Biological and Physical Sciences, August-October, Vol.2, No.4, , 2012, pp.1963-1973.
35. Red shift band gap enhancement of the nanostructure ZnO 100-x Al x thin films as a function of Al concentration for optoelectronic applications", Int. national review of physics vol. 5, no.6, dec. 2011.
36. XPS INVESTIGATION OF SURFACE SECONDARY PHASE SEGREGATION in CIGS Thin Films, 978-1-4244-9965-6/11 ,2011 IEEE.
37. Fresnel Mirror in Solar Extraction of Oil from Shells ",ATTI DELLA FONDAZIONE GIORGIO RONCHI). 2007
38. Electrical Properties of Composites as detected by Guard Electrode System, ATTI DELLA FONDAZIONE GIORGIO RONCHI, AnnoLXII,2007- n.4,luglio-agosto 2007)
39. A Comparative Study for Psoriasis treatment with two CO₂ Laser systems", ATTI DELLA FONDAZIONE GIORGIO RONCHI, AnnoLXII,2007- n.3.
40. Plasma protein aggregation changes in diabetic patients", Iraqi journal of science, vol.46, no.1, 2005, pp154-159.
41. Erythrocyte Sedimentation as detected by He:Ne laser, Journal of the Faculty of Medicine Baghdad . Iraqi, no. 133, 2004.
42. Shockwave Velocity in Laser Driven Targets Composite Material", Atti Della Fondazione Giorgio Ronchi, n.3 , maggio-giugno, 2001.
43. Effect of Gamma Ray on Electronic Transition in SnO₂ Thin Film Prepared by Thermal Evaporation Method", journal of Mathematics and Physics Vol.16, no.4, 2001.
44. A-C Electrical Properties of Novoak- copper and Novolak- nickel Composites", Journal of College of Education Al-Mustensrya

University, no.7, 2001.

45. Study of Environment Effects on the Mechanical and Thermal Properties ,4th. International Conference of Condensed Materials, April 10th-13th 2000,pp 98-103.
46. Effect of Sun Radiation and Acid Solution on the Mechanical and Thermal Properties of Epoxy Composites , Journal of Education College, no.6, 2000,pp. 63-69.
47. Power Output Enhancement of Luminescent Solar Collectors , the 3rd International Conference of energy systems, 2000, ICES, 2K 25-28th Sep.2000, Amman – Jordan.
48. A Study of Laser Ablation Rate and Power Density on Phenol-Metal Composite , ATTI DELLA(FONDAZIONE GIORGIO RONCHI/1999.
49. Theoretical and Experimental Results for Recoil Pressure Composite Material ATTI DELLA(FONDAZIONE GIORGIO RONCHI, 1999.
50. An Investigation of Nd-glass Laser Ablation of Polymer, Polymer-metal Compositied Targets. (Published in: Third Jordanian mechanical and industrial energy conference (JMIEC), May 9-12 1999, Amman-Jordan).
51. Recoil Pressure Study of Novolak-Metal Composite in Laser Ablation Process", The French- Lebanon Symposium for material Metrology and Physical Chemistry.
52. Generation and Decay of Laser Driven Shock waves, The Journal of Islamic Academy of science, vol.9, no.1-4 October 1997.
53. Etching of Polymer-metal Composites by Laser Ablation, The conference of Mu'tah University, 1997, Mu'tah, Karak, Jordan.
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Energy Collection. (Published in: First Jordanian mechanical and industrial conference, 1995, Amman-Jordan).

55. Fluorescence Augmentation of Photovoltaic Power Output. Proceedings of international renewable energy conference , June 22-26, 1992, Amman- Jourdan
56. The adhesion of Dust Particles, Mahmood Al-Abbasi, Manal Midhat Abdullah, the Heliogram Journal, no. 1, 1989.
57. Measurements of Optical and Structural Properties of Different Selective Surfaces, Proceedings of the Fourth Scientific Conference, Scientific Research Council, October 23-28 1986, Baghdad-Iraq.
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59. International Journal of Humanities, Arts, Medicine and Sciences 2 (7), 21-26
60. Electrical properties of ZnO additive with (Al₂O₃) and (TiO₂) nano thin films MM Abdullah , International Journal of Scientific & Engineering Research 4 (3)