Resume

Name in my old passport: Walid Kahalaf Hamoudi
Name in my recent passport: Waleed Khalaf Hammoodi
E mail: wjuaini2007@yahoo.com
Mobile: 0096 7707916896
Department of Applied Sciences - University of Technology
Baghdad – Iraq

Employment history:
I joined the department of Applied Sciences at the University of Technology in 1985/ Baghdad-Iraq as a full time faculty. I took part in academic teaching and research work. In 1994 I joined a research work at Oxford/ Cambridge and Liverpool-UK to develop new approaches in laser welding/drilling/ and cutting of metallic and nonmetallic materials. In 2005 and 2006, I worked for Eidem Diagnostics in Canada in the field of laser aesthetic applications. Between 2007 and 2009, I joined the University of Nizwa in Oman as a full time professor. I retired in 2019. My research activities are directed to laser development / industrial & medical laser applications / Nanoscience and optoelectronics.

Academic Ranks and Positions
1985 to 1989 Lecturer
1989 to 1996 Assist. Professor
1996 and still Professor
(1996 to 2003) Dean of Department of Applied Sciences / University of Technology in Iraq
Retired since October 2019

Present status:
Retired since October, 2019 but still involved in graduate courses teaching and MSC & PhD theses supervision.

Academic Certificates:
1. Ph.D (Laser Physics) Essex Univ-England 1985
2. M.Sc. in Quantum Electronics By Courses and Thesis, Essex univ-England 1982.
3. B.Sc. in Physics, Almustansiriya Univ-Baghdad/Iraq 1977.

Other Certificates
4. Euro laser Academy Certificate for a study at TWI (Cambridge) at AEA (Oxford) and Liverpool Univ-England 1994.
5. ICS (UNIDO) TRIESTE ITALY “Laser industrial applications-Cairo 2000”.
6. Certificate of significant contribution and recognition-Eidam Dignostics Corporation, Laser Medical (Dermatology) Applications/ Canada 2006.

Teaching experience - Undergraduate courses

(1). Laser Principles, (2). Analog & Digital Electronics, (3). Laser design (4), Laser applications, (5). Systems and signals, (6). Optical communications, (7). Buildings & environment, (8). Light & Optics, (9). Electricity & magnetism, (10). Electromagnetism, (11). Electrical Measurements & Instrumentation, English skills.

Teaching experience - Postgraduate courses

(1). Laser Science, (2). Nanotechnology applications, (3). Laser Engineering applications (Measurements, Materials processing, and Communications), (4). Laser Design, (5). Laser medical applications (Laser – tissue interaction, Photomedicine, Laser dentistry, Laser dermatology and laser opthalmology), (6). English skills & Research methodologies.

Research and creative activities:

103 Published scientific articles in the fields:

1. Laser design & Construction
2. Industrial applications of lasers (Laser welding, laser cutting, laser nanosecond pulses processing of metals, Laser drilling, laser induced diffusion of impurities in semiconductors, laser surface treatment of metals and alloys.
3. Optoelectronics and development of photovoltaic and photoconductive optical detectors (single/ quadrant and linear array).
4. Dermatological / aesthetic applications.

Nanomaterials development and applications

Authors of Books

- Quantum optics and lasers (published1989)
- Laser communications (published in 2013)
- Chapter 7 Information Security Based Nano and Bio Cryptography Multidisciplinary perspectives in cryptology and information security, published in the USA by Information Science Reference/ an imprint of IGI Global (2014).

Patents

1. Fabrication of wide spectral range (1.06 to 10.6 μm) room temperature & noise free laser detectors, HO1S3/00 Patent number: 2798 (3/10/1999)
2. Manufacturing of quadrant and linear array (multielement) laser detectors of ZnTe/Si heterojunction type using innovative method HO1L21/70 G01J1/16 G11B11/10 Patent number: 3371 (17/1/2012).
3. the use of Nd: YAG laser and silver nanoparticles to enhance teeth resistance gainst carries A61C1/00 Patent number 5997 (24/11/2019)
4. Safe treatment of skin disorders by safe intense pulsed light – Genuine edsign

Committees

- Iraqi Scholars council - translation committee (1997-2003).
- Scientific Research council member – Ministry of higer education 1998-2003
- Editing board member of Iraqi Journal of Applied Physics (2005 - 2016).
- Executive Committee of Nanotechnology Center at UoT/Iraq, (2010-2015).
- Editing board of Journal of Engineering-University of El-Nahrein, (2016➔).
- Executive Committee of English Center at UoT/Iraq, (2017➔2019).
- University Scientific and Academic Committee, (2017➔2019).

Conferences and Symposiums:

* "Optical switch using an Nd:Yag regenerative amplifier", Proceeding of the international conference on lasers (86), Florida (USA) pp.475-480 (1986).
* "Transformation hardening of En3 steel with a Nd:Yag 10 millisecond laser pulses, 2nd National Technological Conference on Electrical Engineering. Central committee member, 15-16/May/1996. ICALEO (USA) 1994.
* 3rd National Technological CONFERENCE ON Chemical Engineering. Chairman of "spectroscopic measurements session", 13-15/May/1997.
* 4th National Technological Conference on Material Sciences. Chairman of "glass & ceramics session",24/May/1998.
* 2nd conference of Scientific Research Council (Ministry of Higher Education). Central committee member, 14/12/2000.
* 3rd conference of Scientific Research Council (Ministry of Higher Education). Central committee member, 13-14/1/2001.
* "Study of some triplet state quenchers on the photochemical stability of R6G laser dye", 8th National Technological Conference on lasers and electro-optics,15/9/2002.
* "Temperature effect on the performance of obliquely deposited thin films laser detectors", 2nd conference of the Laser and Plasma Institute on lasers and their applications, Dec./2002.
* "Large area silicon position sensitive photo-detector Fabrication and Characterization". Proceeding of CAOL, 2nd International Conference on Advanced Optoelectronics and Lasers 1. 2005.
* "Effect of operating temperature on performance of obliquely deposited Bi, Sb and Bi-Sb semimetal thin film laser detectors", CAOL 2005 proceeding, pp.162-164, September 12-17 (2005), Valta, Crimea Ukraine.
* "First International Conference on Nanotechnology applications" University of Technology – Iraq (2009).
* "Second International Conference on Nanotechnology applications" University of Technology – Iraq (2010).
* "Third International Conference on Nanotechnology applications" University of Technology – Iraq (2011).
* "1st Scientific Conference on Renewable Energy Applications" University of Technology – Iraq (2011).
* "Laser Technology in Industries". Symposium on New Directions in Modern Technology, organized by the Iraqi Scientific Congress, 20-22/5/1997.
* "New Directions in Physics". Symposium on New Directions in Pure Sciences,
organized by the Iraqi Scientific Congress, 17/6/1998.
* "Interaction of laser light with tissue". Symposium on the Applications of Lasers in Medicine organized by Al-Kindy college of medicine (Baghdad), 28/3/2000.
* "Environment and health hazards of Nanoparticles Symposium" University of Technolog – Iraq (2011).
* "Laser cleaning of artifacts" Laser applications conference organized by the University of Technology, 2014.
* Secure optical communication based on new 2D-hyperchaotic map " 3rd International conference of mathematical sciences (ICM2019), AIP Conference Proceeding 2183(1)P090006, DOI: 10.1063/1.5136206 (2019).
* Efficient fabrication of SERS Plasmonics pesticides sensors by pulsed laser etching, accepted in 2nd International Conference in "Physical Science & Advanced materials" 23-25 October 2020 Istanbul / Turkey
* Temperature rise control for safe treatment of varicose vein by Nd: YAG laser, accepted in 2nd International Conference in "Physical Science & Advanced materials" 23-25 October 2020 Istanbul / Turkey
* Histological analysis of tattoo removal by water cavitation bubbles and jet formation using Nd: YAG nanosecond laser pulses, accepted for publication in *Journal of Physics Q3, Conference Series* (*JPCS*)-*IOP Publication,, UK* . (2021) Indexed by Scopus, IF (0.54) and H- index (70)
* Pre-calculated relevant Nd: YAG Laser parameters for optimized varicose veins treatment, accepted for publication in *Journal of Physics Q3, Conference Series* (*JPCS*)-*IOP Publication, UK*. (2021) Indexed by Scopus, IF (0.54) and H- index (70)

* *Temperature rise control for safe treatment of varicose vein by Nd:YAG laser*, 2nd International *Conference in Physical Science & Advanced Materials (American Institute of Physics)*, AIP Conf. Proc. 2372, 080007-1–080007-8; https://doi.org/10.1063/5.0066065 Published by AIP Publishing (Nov-2021). 978-0-7354-4170-5/$30.00
* Efficient Fabrication of SERS Plasmonics Pesticides Sensors by Pulsed Laser Etching, 2nd International Conference in Physical Science & Advanced Materials *(American Institute of Physics)*, AIP Conf. Proc. 2372, 080019-1–080019-11; https://doi.org/10.1063/5.0066052 Published by AIP Publishing (Nov-2021). 978-0-7354-4170-5/$30.00

Published scientific articles

1. Effect of rapid thermal annealing on photovoltaic properties of silicon solar cell fabricated by one-step laser doping in liquid, Applied Physics A - Materials Science & Processing, (2024), pp. (1-10), 130:26 https://doi.org/10.1007/s00339-023-07173-0

2. Optimized selection of neodymium laser parameters for successful enlarged veins treatment, f Springer Nature 2023, Lasers in Medical Science 38:264.

3. Pesticide detection optimization of plasmonics gold nanoparticles/ silicon nano-columns structures by controlling the coupling lasers power density, Springer-Golden Bulletin, (2022) , https://doi.org/10.1007/s13404-022-00323-x

4. Ultimate figures of merit broadband self-powered obliquly deposited antimony thin film laser detectors, Nature – Scientific reports, (2022) 12:19794, https://doi.org/10.1038/s41598-022-24116-6

5. The combination of laser and nanoparticles enamel protection: an in vitro study, J Lasers Med Sci, accepted for publication (2021); Vol. 1:e82; PP. 1-8

6. Exact laser fluence for successful treatment of face and leg telagiectacia, Wiadomosci Lekarskie, Vol LXXIV, Issue 9, September 2021, PP 2340-2344 - doi: 10:36740/Wlek202109215

7. Pre-calculated relevant Nd: YAG laser parameters for optimized varicose veins treatment, 2021, Journal of Physics: Conference Series, **2114** (2021) 012053 IOP Publishing, PP. 1-10, doi:10.1088/1742-6596/2114/1/012053

8. *Temperature rise control for safe treatment of varicose vein by Nd:YAG laser*, 2nd International *Conference in Physical Science & Advanced Materials (American Institute of Physics)*, AIP Conf. Proc. 2372, 080007-1–080007-8; https://doi.org/10.1063/5.0066065 Published by AIP Publishing (Nov-2021). 978-0-7354-4170-5/$30.00

9. Efficient Fabrication of SERS Plasmonics Pesticides Sensors by Pulsed Laser Etching, 2nd International Conference in Physical Science & Advanced Materials *(American Institute of Physics)*, AIP Conf. Proc. 2372, 080019-1–080019-11; https://doi.org/10.1063/5.0066052 Published by AIP Publishing (Nov-2021). 978-0-7354-4170-5/$30.00

10. Sensing Performance of Mono and Bimetallic Nano Photonics Surface Enhanced Raman Scattering (SERS) Devices, Engineering & Technology Journal, Vol. 39, PP. 1174-1184 (2021)
11. Enhanced pesticides' limit of detection using bimetallic alloys nanoparticles, Mater Sci: Mater Electron, Springer – published on-line 04 July 2021, https://10.1007/s10854-021-06381-9

12. Histological analysis of tattoo removal by water cavitation bubbles and jet formation using Nd: YAG nanosecond laser pulses**,** accepted for publication in *Journal of Physics Q3, Conference Series* (*JPCS*)-*IOP Publication,, UK* . Indexed by Scopus, IF (0.54) and H- index (70)

13. Pre-calculated relevant Nd: YAG Laser parameters for optimized varicose veins treatment, accepted for publication in *Journal of Physics Q3, Conference Series* (*JPCS*)-*IOP Publication, UK*. Indexed by Scopus, IF (0.54) and H- index (70)
14. Controllable formation of plasmonic gold nanoparticles by pulsed laser–induced etching; accepted for publication in Optical and Quantum Electronics (2020) 52:351, https://doi.org/10.1007/s11082-020-02466-7

15. Modifications of Hydroxyapatite properties by nanosecond Nd: YAG laser pulses, accepted in Lasers in Manufacturing and Materials Processing - LMMP-D-20-00012R1, June 2020.

16. Efficient fabrication of SERS Plasmonics pesticides sensors by pulsed laser etching, accepted in 2nd International Conference in "Physical Science & Advanced materials" 23-25 October 2020 Istanbul / Turkey

17. Temperature rise control for safe treatment of varicose vein by Nd: YAG laser, accepted in 2nd International Conference in "Physical Science & Advanced materials" 23-25 October 2020 Istanbul / Turkey

18. Acid resistance enhancement of human tooth enamel surface by Nd:YAG laser and incorporating silver nanoparticles: in vitro study, Lasers in Dental Science – Springer, e-ISSN 2367-2587, DOI 10.1007/s41547-019-00082-7, 4: 7-16 (2020)

19. Secure optical communication based on new hyper-chaotic map " 3rd International conference of mathematical sciences (ICM2019), AIP Conference Proceeding 2183(1)P090006, DOI: 10.1063/1.5136206 (2019)

20. Hybrid CdS nanowires/Si heterostructure photodetector fabricated by intense pulsed light assisted - laser ablation in liquid; Optical and Quantum Electronics (2019) 51:126 https://doi.org/10.1007/s11082-019-1840-x

21. The effect of laser hardening and embedding nanoparticles on tooth resistance against carries, International Journal of Dental Research & Development (IJDRD), ISSN (P): 2250-2386; ISSN (E): 2321-0117 Vol. 9, Issue 1, Jun 2019, 5-14

22. Synthesis of Au nanoparticles–decorated CdS nanowires via laser ablation in liquid for opto-electronic applications, Applied Physics A – Materials Science & Processing, (2018) online 124:683 https://doi.org/10.1007/s00339-018-2110-7

23. New Route for Cadmium Sulfide Nanowires Synthesis by Pulsed Laser Ablation in Liquid, Materials Research Express, Vol. 5, 1-13, (2018).

24. Nanosecond Nd: YAG laser surface cleaning of metals and marbles, Iraqi Journal of laser, Vol. 14 (A), PP 21-26 (2018).

25. Electrophoretic deposition of hydroxyapatite-shrimp crusts nanocomposite thin films for bone implant studies, IET Nano-biotechnology Volume 12, Issue 6, p. 714 – 721, September (2018)

26. Nanosecond laser pulses for aluminum and copper drilling, Iraqi Journal of Physics, Vol.16, No.36, PP. 47-52, (2018).

27. Construction and temporal behaviour study of multi RLC intense light pulses for dermatological Applications, Journal of Cosmetic and Laser Therapy (2017) - USA, Vol. 19 (6), PP 325-333.

28. Micro and nano laser pulses for melting and surface alloying of aluminum with copper, Lasers in Manufacturing and Materials Processing (2017) 4:24–35.

29. Synthesis of diamond-like carbon films by electro-deposition technique for solar cell applications, Optical and Quantum Electronics, Volume 48, Issue 1, January 2016. Impact Factor 0.987

30. Application of Nd: YAG laser to induce shock wave stone fragmentation for lithotripsy, TOFIQ Journal of Medical Science TJMS (USA), Vol. 3, Issue 1, 17-25 (2016).

31. Annealing time effect on nanostructured nZnO/pSi heterojunction photodetector performance Surface Review and Letters Vol. 22 No.1 (2015).

32. Improved photoresponse of porous silicon photoconductors by embedding CdS nanoparticles, Indian Journal of Pure and Applied Physics Vol. 53 Nov. pp. 718-724 (2015).

33. Design and temporal control study of multi LC network medical Intense Pulsed Light (IPL) system, Eng. & Tech. Vol. 33 Part (B), No. 5, PP. 772-778, (2015).

34. Laser surface cleaning of stones and some metal objects Eng. & Tech. Vol. 33 Part (B), No. 5, PP. 972-983, (2015).

35. Effect of rapid thermal annealing on characteristics of amorphous carbon/n type crystalline silicon heterojunction solar cells, Materials Science in Semiconductor Processing 21 (2014) 194- 199

36. Nonablative tattoo removal using fundamental and second harmonic Nd: YAG laser (tattoo ink clearance response) IJAP Vol. 10 No.1 (2014). ISSN 2309 1673

37. Optimization of silicon solar cells efficiency by chemical texturing IJAP Vol. 10 No. 2 (2014) ISSN 2309 1673

38. Characterizations of HAp thin films deposited by spray pyrolysis on Ti substrates for bone implant applications IJAP Vol. 10, No. 3-4 Dec (2014) ISSN 2309 1673

39. Characterization of nanostructured hydroxyapatite prepared by N:Yag laser deposition Material Science and Engineering C. 33 47 to 52 (2013). [Citation indexed (ISI/SCOPUS)

40. Improvement of Wound Healing in Rabbit Skin by Low Level Polarized Laser Light IJAP Vol. 9 No.4 (2013). ISSN 2309 1673

41. Characterization of Nanostructured Apatite phase prepared by PLD. Proceeding of 3rd Nanotechnology conference pp. 35 to 39 UOT (2013).

42. Histological observations of nonablative tattoo removal using Nd: YAG laser IJAP Vol. 9 No.4 (2013). ISSN 2309 1673
43. Charactreristics of noval silicon pin photodiode made by rapid thermal diffusion Journal of Electron Devices Vol. 14 1104 to 1107 (2012).

44. Laser thermal input effects on deep penetration CO_2 laser welding of Carbon steel Nahrain University College of Engineering Journal Vol.15 222 to 232 (2012).

45. HAZ and melt limits of 3D CO_2 Laser welding IJAP Vol. 7 No.2 pp. 11 to 17 (2011). ISSN 2309 1673
46. Preparation of crystalline biocompatible thin films on metallic implants by pulsed laser deposition. Proceeding of 3rd Nanotechnology conference pp. 21 to 28 UOT (2011).

47. Modeling of 3D Keyhole CO_2 Laser Welding of Steel IJAP Vol. 6 Issue 1 pp. 15 to 21 (2010). ISSN 2309 1673

48. Laser Human skin interaction: Analytical Study and Optimization of present Non Ablative Laser Resurfacing IJAP No. (3) Vol. 4 pp.5 to 11 (2008). ISSN 2309 1673

49. Large area silicon position sensitive photodetector Fabrication and Characterization. Proceeding of CAOL 2nd International Conference on Advanced Optoelectronics and Lasers 1 art no. 1553838 pp. 126 to 129 (2005). [Citation indexed (SCOPUS)]

50. Structural characteristics study of indium diffusion in silicon using a pulsed Nd:Yag laser IJAP Vol. 1 issue (1) pp 1 to 5 (2005). ISSN 2309-1673

51. Band diagram of p Pb/n Si Heterostructure IJAP Vol. 1 issue (2) pp 27 to 30 (2005). ISSN2309 1673

52. New high angular resolution detection system for direction recognition IJAP Vol. 1 issue (3) pp 27 to 32 (2005). ISSN 2309 1673

53. Effect of operating temperature on performance of obliquely deposited Bi Sb and Bi/Sb semimetal thin film laser detectors CAOL 2005 proceeding pp.162 to 164 September 12/17 (2005) Valta Crimea Ukraine. [Citation indexed (SCOPUS)]

54. Wideband (0.6 to 11) micron angle deposited thin Te:S laser detectors IJAP No.3 Vol. 1 pp. 3 to 14 (2005). ISSN 2309 1673

55. Drilling zinc metallic sheet using 0.53 micron SHG of the 1.06 micron Nd:Yag laser J. Eng. &Tech. vol. 23 pp. (2004).

56. Fabrication and study the characteristics of an intrinsic photoconductive detector J. Eng. &Tech. Vol. 23 pp.124 to 130 (2004).

57. Design and fabrication of laboratory system to study atmospheric parameters influencing the laser beam propagation J. Eng. &Tec. Vol.23 pp. 73 to 82 (2004).

58. Study of photovoltaic characteristics of PbTe/Si Heterojunction J. Eng. & Tec. Vol. 23 pp.236 to 245 (2004).

59. Study of some triplet state quenchers on the photochemical stability of (R6G) dye dissolved in ethanol J.Eng. & Tech. Vol. 23 pp 330 to 334 (2004).

60. Efficiency enhancement of silicon solar cells J. Eng. & Tech. Vol. 23 pp. 345 to 350 (2004).

61. Q switched Nd:YAG Laser Annealing of Phosphorus Diffused Silicon Photodiodes Iraqi Journal of Lasers (ISSN 1812 1195) Vol. 2 pp 1 to 5 (2003).

62. Study of some triplet state quenchers on the photochemical stability of R6G laser 8th National Technological Conference on lasers and electrooptics Baghdad / Iraq September 15 (2002).

63. Studying the effect of dissolved oxygen on photochemical stability of R6G dye dissolved in methanol J. Eng. &Tech. Vol. 21 PP. 116 to 122 (2002).

64. Optimum operating condition or preionized sealed-off TEA CO_2 laser, Iraqi Journal of Sciences, Vol 43 (2) PP. 66-80 (2002).

65. Low power CO_2 Laser treatment of brittle materials J. Eng. & Tech. Vol.21 pp. 490-496 (2002).

66. Design and construction of CNC laser cutting system J. Eng. & Tech. Vol. 20 PP. 17-27 (2001).

67. Surface hardening of low carbon steel using a pulsed Nd:Yag laser J. Eng. & Tech. Vol. 20 PP. 89 to 104 (2001).

68. The role of solid catalyst in CO_2 gas re-generation system, Iraqi Journal of Sciences, Vol 42 (3) PP. 15-27 (2001).

69. The preparation of Pd/Al_2 heterogeneous catalyst and studying its structural characteristics, Journal of Education – Almustansiriyah University, PP 250-266 (2001).

70. Surface treatment of low carbon and stainless steel using a pulsed Nd:Yag laser J. Eng. & Tech. Vol. 20 PP. 133 to 144 (2001).

71. Fabrication and characteristics improvement of Silicon photodiode detector J. Eng. & Tech. Vol. 20 PP. 169 to 179 (2001).

72. Design and construction of mini TEA CO2 laser using 8th order Ernst profile J. Eng & Tech. Vol. 20

PP. 276 to 285 (2001).

73. Study of CO2 gas dissociation in a sealed TEA CO2 laser J. Edu. Almustansirya Univ. Vol. 3 PP. 308 to 324 (2001).

74. Fabrication and characterization study of a ZnTe/Si similar heterojunction detector J. Eng. & Tech. Vol. 20 PP. 552 to 559 (2001).

75. Selenum diffusion by Nd:Yag Laser in silicon J. Eng. & Tech. Vol. 19 pp. 125 to 135 (2000).

76. Fabrication of high quality pn Junction by Laser induced diffusion technique J. Eng. & Tech. Vol. 19 pp. 119 to 142 (2000).

77. Laser induced diffusion of indium in silicon Journal of Material Science Vol. 35 pp. 1 to 6 (2000). [Citation indexed (ISI/SCOPUS) IF=2.015]

78. Design and construction of R6G dye laser system J. Edu. Almustansirya Univ. Vol. 5 PP. 253 to 266 (2000).

79. Design and construction of mini CO_2 laser using SiC electrodes J. Sciences Tik. Univ. Vol.6 pp. 9 to 19 (2000).

80. Design & construction of Nd:Yag laser system J. Eng. & Tech. Vol. 19 PP. 53 to 68 (2000).

81. Study of material reflection as a function of temperature and roughness J.Science Tik. Univ. Vol. 5 PP. 74 to 89 (1999).

82. Carbon steel hardening by martensite formation using a high power CO2 Laser J. Eng. & Tech. Vol. 17 pp. 1 to 6 (1998).

83. Cladding of medium carbon steel with stellite powder using a CO2 Laser J. Eng. & Tech. Vol. 17 pp. 237 to 242 (1998).

84. The effects of speed and processing gas on Laser cutting of steel using 2 Kw CO2 Laser Int. J. of Joining of Materials Vol. 9 pp. 31 to 33(1997). [Citation indexed (SCOPUS)]

85. Non Linear behavior of a passive Q switch for Neodymium Lasers Tr. J. of physics Vol. 21 pp. 662 to 666 (1997). [Citation indexed (SCOPUS)]

86. Etching of Alumina and polycarbonate using a KrF excimer Laser Tr. J. of physics Vol. 21 pp. 806 to 812 (1997). [Citation indexed (SCOPUS)]

87. HAZ and structural defects control in keyhole welding of titanium using repetitively pulsed Nd:Yag Laser Tr. J. of physics Vol. 20 pp. 1271 to 1277(1996). [Citation indexed (SCOPUS)]

88. Transformation hardening of En3 steel with a Nd:Yag 10 millisecond pulsed laser Tr. J. of Physics Vol. 20 pp. 1180 to 1189 (1996). [Citation indexed (SCOPUS)]

89. Keyhole welding of C/Mn steel using 10 Kw CO_2 Laser Int. J. of Joining of Materials Vol. 8 (1) pp. 30 to 36 (1996). [Citation indexed (SCOPUS)]

90. Welding of similar and dissimilar wires with 10 ms Laser pulses Int. J. of Joining of Materials Vol. 7 pp. 124 to 128 (1995). [Citation indexed (SCOPUS)]

91. Nd:Yag Laser surface alloying (L.S.A) of low carbon steel Int. J. of Joining of Materials Vol. 7 pp. 119 to 122 (1995). [Citation indexed (SCOPUS)]

92. Electric field assisted exothermic Laser drilling of low carbon steel Int. J. of Joining of Materials Vol. 7 pp. 31 to 33 (1995). [Citation indexed (SCOPUS)]

93. Parameters affecting Nd:Yag Laser drilling of metals Int. J. of Joining of Materials Vol. 7 pp. 63 to 69 (1995). [Citation indexed (SCOPUS)]
94. Design construction and operation of a pulsed dye laser and studying the effect of COT quencher on the output laser beam J. Eng. &Tech. Vol. 13 PP. 7 to 12 (1994)

95. Study of electric discharge stability of lab. made transversely excited CO2 laser J. Eng. & Tech. Vol. 12 PP. 14 to 22 (1993).

96. Nd:Yag laser filler assisted welding of stainless steel 304 J. Eng. &Tech. Vol. 12 pp. 75 to 78 (1993).

97. Nd:Yag laser seam welding of dissimilar steel sheets J. Eng. & Tech. Vol.12 pp.19 to 24 (1993).

98. Nd:Yag short laser pulses generation J. Eng. &Tech Vol. 11 PP. 47 to 52 (1992).

99. Study of Nd:Yag laser seam welding of some steel and brass alloys J. Eng. & Tech. Vol. 11 PP. 115 to 122 (1992).

100. New Passive solid Q switch for high power Nd:Yag Lasers J. Eng. & Tech. Vol. 10 PP. 95 to 105 (1991).

101. Passive Laser pulse synchronization techniques using a regenerative amplifier Journal of Physics B-atomic and optical physics Vol.23 pp. 599 to 609 (1990). [Citation indexed (ISI/SCOPUS) IF=1.875]

102. The effect of solvents and metals on the spectrum of Xanthene laser dyes J. Eng. & Tech. Vol.7 PP. 69 to 80 (1989).

103. Operational parameters of lab. made CO_2 laser J. Eng. & Tech. Vol. 9 PP. 75 to 99 (1989).

104. Optical switch using an Nd:Yag regenerative amplifier Proceeding of the international Conference on lasers (86) Florida (USA) pp.475 to 480 (1986).

105. Synchronized Nd Laser pulses using a regenerative amplifier Optics Communications, Vol.55 pp.66 to 72 (1985). [Citation indexed (ISI/SCOPUS) IF=1.486]

Supervision of MSc & PhD theses (44 students)

1. Akram Noori Mohammed M.Sc (1987) The effect of solvent and paramagnetic atoms on spectral characteristics of laser dyes.

2. Kifah Kasim Alazawi M.Sc (1988) Construction of a dye laser and studying triplet state depopulation.

3. Nasir Mahmood Ahmed M.Sc (1988) Construction of CO2 gas laser for simple industrial applications.

4. Uday Mahmood Abdulhusain M.Sc (1989) Electric discharge stability study of TE gas laser.

5. Walaa Wadie Jameel M.Sc (1989) Optical switch for Nd:Yag laser.

6. Mustafa Kamil Jasim M.Sc (1990) Short laser pulse generation and axial modes control.

7. Raid Abdulwahhab Ismail M.Sc (1990) Welding of metals by Nd:Yag laser.

8. Bassam Ghalib Rasheed M.Sc (1992) Drilling metals by Nd:Yag lasers.

9. Muhnned Rasheed Ismail M.Sc (1993) Drilling materials by (0.53 micron) SHG Nd: YAG laser.

10. Atheer Ibraheem Jameel M.Sc (1996) Design and construction of a CNC CO2 laser cutting system.

11. Alwan Mohammed Alwan M.Sc (1996) Construction of compact dye laser.

12. Rania Ayed Markab M.Sc (1998) Cutting of glass and ceramics using CO_2 laser.

13. Rana Usama Mahdi M.Sc (1998) Studying the structural and electrical characteristics of laser induced diffusion in silicon by means of Nd:Yag laser.

14. Shihab Ahmed Kadum Ph.D (1998) Fabrication & spectral study of Nd:glass lasing medium.

15. Ammar Mahmood Abdulla M.Sc (1999) Construction of a pulsed neodymium laser.

16. Walaa Wadie Jameel Ph.D (2000) Hardening of low carbon and stainless steel sheets by lasers.

17. Evan Tariq Salim M.Sc (2001) Fabrication of multi element laser detector.

18. Shaimaa Mahmood Abdulbaqi M.Sc (2001) Studying the effect of laser irradiation on the characteristics of fabricated silicon photo-detector.

19. Asmaa Diaa Nusayef M.Sc (2001) Electrooptic properties study of doped Silicon prepared by rapid thermal diffusion.

20. Munaf Rasheed Ismail Ph.D (2001) Fabrication and studying the properties of laser induced

diffusion and obliquely deposited thin film detector for the (0.4 to 10.6) micron.

21. Raad Said Abid Ph.D (2001) Studying some structural, optical and electrical characteristics of Sb, Bi and Te obliquely deposited thin films.

22. Adawiya Jumaa Hayder Ph.D (2001) Design and construction of a compact mini CO_2 laser.

23. Yasemin Zaydan Dawood M.Sc (2002) Fabrication and studying the electroptic and structural characteristics of Pb Te/Si heterojunction detector.

24. Rafal Hameed Mahdi M.Sc (2002) Studying the effect of thermal annealing on the characteristics of Silicon solar cells.

25.Farah Juaad Kadum M.Sc (2002) Fabrication and studying the characteristics of (1-3) micron PbS laser and I.R detectors.

26. Afnan Kamal Yusif M.Sc (2002) Studying the effect of temperature on the electro-optic characteristics of Sb, Bi and (Sb Bi) detector.

27. Muhanned Rasheed Ismail Ph.D (2002) Fabrication of a Silicon laser detector array.

28. Fatima Ires Sultan M.Sc. (2004) Nd:yag laser alloying of (Cu) in (Al).

29. Ayser Sabah M.Sc. (2004) Ni & Cr doping in silicon by means of laser.

30. Husam Hanna Habib Ph.D. (2005) Multi element laser photodetector arrays for direction recognition.

31. Saad Abdul Aziz Al Haddity Ph.D. (2006) Modelling of CO2 laser welding of steel.

32. Muna Saher M.Sc. (2006) Efficiencxy optimization of silicon solar cells.

33. Susan Ibraheem M.Sc. (2010) tattoo removal by Q. S Nd:YAG laser shattering technique.

34. Hadeel Fiyyadh M.Sc. (2013) Laser Pysolysis and Spraying of Calcium Phospate thin films as biocomaptible materials for bones.

35. Hussein A. Shaker M.Sc. (2013) Design and construction of (0.2 to 5 ms) multi flash lamp intense pulsed light system for dermatologic and aesthetic applications.

36. Akram Al Jibori MSc. (2013) Low power diode laser cutting of non-metallic materials.

37. Hanan I. Ibraheem MSc. (2015) Laser surface cleaning and shattering for industrial and medical applications.

38. Summaya Jaleel MSc. (2016) Q switched laser pulses applications in material processing.

39. Narjis Zamil PhD (2016) Laser induced shock wave effects in different media.

40. Hadeel Fiyyadh PhD (2017) Preparation of CdS and ZnS by IPL- suppoprted laser ablation in liquid for optoelectronic applications. (still going)

41. Zeena Salah-eddeen Al-Samarraie MSc (2017) Tooth enamel surface modifications by laser and IPL for tooth dacay prevention.

42. Duaa Sulaiman PhD (2018) Laser Design for safe consumption of agricultural products using Surface Enhanced Raman Scattering “SERS”

43. Dhrgham Younis MSc (2018) Chaotic thery in laser communications

44. Muna Bahaa’ Aldeen Mustafa (2019) Laser treatment optimization of enlarged blood vessles

45. RawdhaMohammed Fahad MSc (2022) Laser induced shock waave effect on tooth structure.

46. Muna Bahaa’ Aldeen Mustafa PhD (2022) laser skin resurfacing of facial defects.