

Curriculum Vitae of Full Prof. Dr. Adel K. Mahmoud

Personal Details:-

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Scientific Title Prof. Dr. in Production Engineering &Metallurgy

Designation :- Full Professor in Production Engineering &Metallurgy



Academic Qualifications:-

- B.Sc. In Production Engineering&Metallurgy, University of Technology-Baghdad-Iraq (1994).
- M.Sc. In Production Enginerring&Metallurgy, University of Technology-Baghdad- Iraq (1999).
- Ph.D. In Production Engineering&Metallurgy, University of Technology-Baghdad-Iraq (2003).
- **Consultant Degree** in Iraqi and Arabian Engineers Union

Previous Appointments:-

- Lecturer in the following Departments: (Department of Production Engineering&Metallurgy, Department of Mechanical Engineering and Department of Materials Engineering) in University of Technology, Baghdad-Iraq (from 1998-2003).
- Manager of Development &Reseach Office in Engineering College-University of Diyala, Diyala-Iraq (from 2003-2004).
- Head of Power Engineering Department&Electrical Machines, College of Engineering-University of Diyala-Iraq (from 2004-2008).

- Member of Scientific Consultant Office for College of Engineering-University of Diyala, Diyala-Iraq (from 2005-2006).
- Head of Scientific Consultant Office for College of Engineering-University of Diyala, Diyala-Iraq (from 2007-2012).
- Dean Agent of Engineering College, University of Diyala, Diyala-Iraq (from 2007-2008).
- Head of Mechanical Engineering Department, College of Engineering, University of Diyala, Diyala-Iraq (from 1/10/2008- 2/12/2008).
- Dean of Engineering College, University of Diyala, Diyala-Iraq (from 2008-2012).
- Manager of Germany – Iraqi Mechanical Engineering Project (from 2009 - Now).

Scientific Activities:-

- Presentation of many scientific papers in an International Conferences held in: Iraq, Jordon, Egypt, Morocco, Malaysia, Turkya, France, Bulgaria, Germany, Australia and USA.
- Many scientific papers published in local & International Scientific Journals.
- Teaching of many subjects in Metallurgical Engineering at the Department of Mechanical Engineering, Materials Engineering and Production Engineering& Metallurgy in University of Technology-Baghdad-Iraq&Teaching of Engineering Mechanics, Engineering Management at the Department of Power Engineering&Electrical Machines, College of Engineering-University of Diyala and Metallurgical Engineering at the Department of Mechanical Engineering, College of Engineering, University of Diyala, Diyala-Iraq.
- Examiner of many of higher studies (M.Sc.& Ph.D.) Students at the Laser Institute for Postgraduate Studies, Baghdad University, College of Engineering-Baghdad University, College of Engineering- Al-Nahreem University and Technical College-Baghdad-Iraq.

- Supervisor of many of higher students at University of Technology and Laser Institute of Higher Studies-University of Baghdad.
- Joint supervisor with Dublin City University-Ireland and Kocaeli University-Turkey
- International Reviewer of International Journal of Surface Science and Engineering (IJSURFSE), Korean International Journal of Chemical Engineering (KIJCE), Virtual International Bulgarian Journal of Machines, Technics and Materials (MTM), International Journal of Materials Science and Applications(IJMSA), Advances in Materials(AM) and American Journal of Nano Research and Applications (NANO).
- Editorial Board member in three International Journals :- 1.International Journal of Materials Science and Applications(IJMSA), 2. Advances in Materials(AM) and 3. American Journal of Nano Research and Applications (NANO).
- Guest Editor for the Special Issue "Laser Applications in Physics of Advanced Materials and Biology" under the journal "American Journal of Physics and Applications(AJPA);
- **Member of American Society of Mechanical Engineers (ASME).**

Subjects Taught:-

Materials Science &Engineering, Surface Engineering, E-Beam & Laser Processing of Engineering Materials, Advanced Manufacturing Processes, Industrial Engineering, Wear of Engineering Materials, Welding of Similar and Dissimilar Metallic Materials, Heat treatment of Engineering Materials, Materials Characterizations, Selection of Materials, Nanotechnology, Nanomaterials and Laboratories of Metallurgical Engineering Field.

Languages:-

Mother Language: Arabic.

Other Languages: English

Books

LASER SURFACE SEALING PROCESSING For THERMAL BARRIER COATINGS, Dar Amjad for Publishing and Disributing', Amman-Jordon, 2016, ISBN: 978-9957-99-399 -3, Adel K. Mahmoud, Suha I. Alnassar.

International Journal Articles

1. "Mathematical Model for Prediction of Laser Surface Sealing Dimensions of Zirconia-Based Ceramic Coatings", Diyala Journal of Applied Researches, Volume-1, No.2, 2005, Adel K. M.
2. "Surface Sealing of Plasma-Sprayed Thermal Barrier Coatings by An Excimer Laser", Diyala Journal of Applied Researches, Volume-1, No.2, 2005, Adel K. M.& Suha I. Al-nassar
3. "Manufacturing of High Frequency Transformer Core from Nickel Ferrite", Journal of Diyala, Volume-1, No.22, 2006, Adel K. M., Tahseen H.M.& Ahmed F.
4. "Effect of Mullite Phase on Some Properties of Hard Porcelain", Journal of Diyala, Volume-1, No.23, 2006, Adel K. M., Tahseen H.M.& Ahmed F.
5. "The Effect of Laser Surface Hardening on the Wear and Friction Characteristics of A Bainitic Ductile Iron", International Journal on Mechanical and Materials Engineering, Vol.4, No.2, 2009, Adel K. M., Dhia A. S.& M.J. Ghazali
6. "Prediction Laser Sealed Advanced Ceramic Coatings Dimensions by using Finite Element Model and Computational Method", Advanced Materials Research, Vols. 264-265, 2011, pp 1444-1449, K. M. Adel, E.K. Ekhlas, and S. H. Shaker
7. "Building A Simulation Model for Prediction of Temperature Distribution in Laser Sealing Processing of Advanced Ceramic Coatings", Advanced Materials Research Vols. 264-265, 2011, pp 1586-1591, K. M. Adel, E.K. Ekhlas, & J.Gh.Mariyam
8. "Temperature Distribution Simulation For Pulsed Laser Spot Welding Of Dissimilar Stainless Steel AISI 302 To Low Carbon Steel AISI 1008", Advanced Materials Research Vol. 445, 2012, pp 412-417, Adel K. M., Ziad A. Taha, & Abeer A. Shehab
9. "COMPUTAIONAL AND EXPERIMENTAL INVESTIGATION FOR WELD BEAD DIMENSIONS IN PULSED LASER SPOT WELDING OF STAINLESS STEEL AISI 302, TO LOW CARBON STEEL AISI 1008", The international virtual journal for Machines, Technologies, Materials, ISSN 1313-0226 YEAR VII ISSUE 1 / 2012, Adel K. M., Khalil I. Hajim, Ziad A. Taha, Thaier A. Tawfiq& Abeer A. Shehab, International Journal Machine, Technologies, Materials, 2011, PP 7-14

10. "Study of the fragmentation phenomena of TiO₂ nanoparticles produced by femtosecond laser ablation in aqueous media", International Journal of Optics & Laser Technology, Volume 51, 2013, PP 17-23, Adel K. M. & Suha I. Al-nassar
11. "Synthesis of Zirconia Nanoparticles in Distilled Water Solution by Laser Ablation Technique", Journal of Materials Science and Engineering B 3 (6) 2013, 364-368, Adel K. M. & Suha I. Al-nassar, & Zainab F.
12. "BUILDING A SIMULATION MODEL FOR PREDICTION OF THE TEMPERATURE DISTRIBUTION IN PULSED LASER SPOT WELDING OF DISSIMILAR LOW CARBON STEEL (1010) TO AA 7020-T6 ALUMINUM ALLOY", The international virtual journal for Machines, Technologies, Materials, ISSN 1313-0226 YEAR VII ISSUE 1 / 2013, pp 44-46, Adel K. M
13. "STUDY THE EFFECT OF LASER FLUENCES ON THE PRODUCTION OF ALUMINA NANOPARTICLE (Al₂O₃) SYNTHESIZED BY PULSED LASER ABLATION TECHNIQUE IN AQUEOUS SOLUTIONS", International Virtual Journal for Science, Technics and Innovations for the Industry, "MACHINES, TECHNOLOGIES, MATERIALS", ISSN 1313-0226, Issue 8/2013, Adel K. M. & Suha I. Al-nassar, & Zainab F.
14. "Manufacturing of Zirconia (ZrO₂) Nanoparticles in Sodium Dodecyl Sulfate Surfactant Solution using Laser Ablation Technique", Advanced Materials Research Vol. 871, 2014, pp 194-199, Adel K. M.
15. "Estimation of the Mechanical Properties and Temperature Distribution in Friction Stir Welding Technique of Aluminum Alloys", Materials Science Forum Vols. 773-774, 2014, pp 811-819, Adel K. M.
16. "Production of Alumina Nanoparticles (Al₂O₃) using Pulsed Laser Ablation Technique in Distilled Water Solution", E-ISSN 2277 – 4106, P-ISSN 2347 - 5161, Special Issue-2, 2014, Adel K. M.
17. "Enhancement of Dry Sliding Wear Characteristics of CK45 Steel Alloy by Laser Surface Hardening Processing", Procedia Materials Science 6, 2014, 1639 – 1643, Adel K. M.
18. "Production of Alumina Nanoparticles (Al₂O₃) using Pulsed Laser Ablation Technique in Ethanol Solution", International Virtual Journal for Science, Technics and Innovations for the Industry, "MACHINES, TECHNOLOGIES, MATERIALS", ISSN 1313-0226, Issue 12/2014, Adel K. M.
19. "Evaluation of the Mechanical Properties by Computational and Experimental Techniques in High Power Laser Welding of Dissimilar Materials ", International Journal of Enhanced Research in Science Technology & Engineering, ISSN: 2319-7463 Vol. 3 Issue 11, November-2014, pp: (37-48), Adel K. M., Sami A. A., Dhia A. S., K. Y. Benyounis, Olabi A. G.,

20. "Study the Effect of Different Liquid Media on the Synthesis of Alumina (Al₂O₃) Nanoparticle by Pulsed Laser Ablation Technique", Manufacturing Science and Technology 3(4): 77-81, 2015, Adel K. Mahmoud.
21. "Study the Fragmentation Phenomena of TiO₂ Nanoparticles Produced by Liquid-Phase Laser Ablation Method using Computer Simulation Technique", Materials Today: 2 (2015), 3718 – 372, Adel K. Mahmoud.
22. "Evaluation of the Surface Temperature and Study of Its Effects on the Dry Sliding Wear Characteristics of a Bainitic Ductile Cast-Iron", Journal of Engineering and Technology, Vol. 34, Part: A, No. 2, 2016, Adel K. Mahmoud.
23. "Erosion-Corrosion of Low-Carbon Steel in the Absence and Presence of Slurry in Saline Water: Kinetic and Mathematical Views", Journal of Failure Analysis and Prevention, Vol. 16, Issue 5, 2016, Adel K. Mahmood, Anees A. Khadom.
24. "Study the Effect of Liquid Layer Level on the Formation of Zinc Oxide Nanoparticles Synthesized by Liquid-Phase Pulsed Laser Ablation", Materials Science Forum, Vol. 880, pp 110-11, 2017, Suha I. Al-Nassar¹, Adel. K. Mahmoud and Furat I. Hussein.
25. "Laser Surface Treatment of Al-12%Si alloy", Materials Today⁴ (2017) 9992–9996.

International Conference Papers

1. "Dry Sliding Wear Study of Acicular Spheroidal Graphite Cast Iron" presented in the Fourth Jordanian International Mechanical Engineering Conference "JIMEC 2001", Amman 8th-10th October, 2001, Amman, Jordan, organized by Jordanian Engineers Union.
2. "Calculation of the Retained Austenite Concentration by X-Ray Diffraction Technique" presented in 8th International Conference on Mining Petroleum and Metallurgical Engineering, 17-19 March , 2003, Suez Canal , Egypt, organized by Suez Canal University.
3. "Study of Dry Sliding Wear of Acicular Ductile Iron as a Function of Surface Temperature" presented in 8th International Conference on Mining Petroleum and Metallurgical Engineering, 17-19 March , 2003, Suez Canal , Egypt, organized by Suez Canal University.
4. "Laser Processing of Advanced Plasma-Sprayed Ceramic Coatings" presented in ICALEO® Conference, October 31-November 3, 2005, Miami, Florida, USA.
5. "Improvement of Chemical Properties of Alumina Ceramic Coating by Laser Sealing Processing" presented in Jordanian International Chemical Engineering Conference V "JICEC5" , 12th - 14th September, 2005, Amman, Jordan

- 6.** "Manufacturing and Laser Sealing Processing of Plasma-Sprayed Advanced Thermal Barrier Coatings" presented in 2nd International Conference on Functional Materials and Devices, 16-19 June, 2008, organized by Faculty of Applied Science-Universiti Teknologi Mara, Kuala Lumpur, Malaysia.

- 7.** "Computational Investigations of Laser Sealed Advanced Ceramic Coatings" presented in 2nd International Conference on Functional Materials and Devices, 16-19 June, 2008, organized by Faculty of Applied Science-Universiti Teknologi Mara, Kuala Lumpur, Malaysia.

- 8.** "Computer Aided Calculation of the Retained Austenite Concentration By X-Ray Diffraction Technique" presented in International Conference on New Materials and Nanotechnology, '5th Congress on Scientific Research Outlook& Technology (SRO5), 26-30 October, 2008, Fez, Morocco'

- 9.** "Dry Sliding Wear Characteristics of Treated CK45 Steel Alloy By Laser Surface Processing" presented in Malaysian Metallurgical Conference – MMC, 3-4 December, 2008, organized by UKM, Bangi, Malaysia.

- 10.** "Building A Simulation Model for Prediction of the Temperature Distribution in Laser Processing of Advanced Ceramic Coatings" presented in the International Conference on Advances in Materials and Processing Technologies (AMPT-2009), 26-29 October, 2009, organized by Faculty of Engineering–International Islamic University Malaysia, Kuala Lumpur, Malaysia.

- 11.** "Prediction of Laser Sealed Advanced Ceramic Coatings Dimensions by using the Finite Element Model and Computational Methods" presented in 12th International Conference on Advances in Materials and Processing Technologies (AMPT-2009), 26-29 October, 2009, organized by Faculty of Engineering, International Islamic University Malaysia, Kuala Lumpur, Malaysia.

- 12.** "Prediction of Laser Sealed Advanced Ceramic Coatings Dimensions by using the Finite Element Model and Computational Methods" presented in the International Conference on Advances in Materials and Processing Technologies (AMPT-2009), 26-29 October, 2009, organized by Faculty of Engineering, International Islamic University Malaysia, Kuala Lumpur, Malaysia.

- 13.** "Temperature Distribution Simulation For Pulsed Laser Spot Welding Of Dissimilar Stainless Steel 302 to Low Carbon Steel 1008" presented in 14th International Conference on Advances in Materials Processing and Technology "AMPT –2011", 13-16-Julye, 2011, Istanbul, Turkey.

- 14.** "Estimation of the Mechanical Properties and Temperature Distribution in Friction Stir Welding Technique of Aluminum Alloys" presented in 15th

International Conference on Advances in Materials Processing and Technology
**"AMPT –2012", 23-26 September, 2012, Wollongong, Australia,
organized by University of Wollongong.**

15. "Manufacturing of Zirconia (ZrO_2) Nanoparticles in Sodium Dodecyl Sulfate Surfactant Solution using Laser Ablation Technique" presented in 2nd International Conference on Recent Trends in Materials and Mechanical Engineering (ICRTMME 2013), September 21-23, 2013, Singapore.

16. "SURFACE HARDENING OF DUCTILE CAST - IRON USING PULSED LASER BEAMS" presented in International Conference at Design, Fabrication and Economy of Metal Structures, April 24-26, 2013, Miskolc, Hungary.

17. "Study the Effect of Sodium Dodecyl Sulfate Surfactant Solution on the Production of Zirconia (ZrO_2) Nanoparticles Synthesized by Laser Ablation Technique" presented in Second International Conference on Advanced Manufacturing and Automation (INCAMA'13) 28th - 30th March, 2013, Virudhunagar Dist, Tamilnadu, INDIA.

18. "Estimation of the Residual Stresses by Computational and Experimental Techniques in Laser Welding of Dissimilar Materials" presented in Second International Conference on Advanced Manufacturing and Automation (INCAMA'13) 28th - 30th March, 2013, Virudhunagar Dist, Tamilnadu, INDIA.

19. "Study the Effect of Different Surfactant Solution on the Production of Zirconia (ZrO_2) Nanoparticles Synthesized by Laser Ablation Technique" presented in International Conference on Industrial and Production Engineering, June 20-21, 2013, , Istanbul, Turkey, organized by World Academy of Science, Engineering and Technology.

20. "Laser Welding Parameters of Dissimilar Materials" presented in International Conference on Industrial and Production Engineering, June 20-21, 2013, , Istanbul, Turkey, organized by World Academy of Science, Engineering and Technology.

21. "STUDY THE EFFECT OF LASER FLUENCES ON THE PRODUCTION OF ALUMINA NANOPARTICLES (Al_2O_3) SYNTHESIZED BY PULSED LASER ABLATION TECHNIQUE IN AQUEOUS SOLUTIONS" presented in XXI INTERNATIONAL SCIENTIFIC AND TECHNICAL CONFERENCE ON TRANSPORT, ROAD-BUILDING, AGRICULTURAL, HOISTING & HAULING AND MILITARY TECHNICS AND TECHNOLOGIES, 01.- 02.07 2013, Varna – Bulgaria.

22. "LASER SURFACE HARDENING OF DUCTILE IRON " presented in 10th International Congress „MACHINES, TECHNOLOGIES, MATERIALS '13, 17.09-19.09.2014, Varna – Bulgaria.

23. "Enhancement of Dry Sliding Wear Characteristics of CK45 Steel Alloy by Laser Surface Hardening Processing" presented in 3rd International Conference on Materials Processing and Characterization (ICMPC 2014), 8-9 March, 2014, Hyderabad, India.

24. "Production of Zirconia Nanoparticles (ZrO_2) in Cetyltrimethylammonium Bromide Solution (CTAB) by Laser Ablation Technique" presented in International Conference on Material Science and Material Engineering [MSME2014], March 14 - March 16, 2014 Chicago, Illinois, USA.

25. "Spectroscopic characterization approach to study ablation time on zinc oxide nanoparticles synthesis by laser ablation Technique" presented in International Conference on Nano Science and Technology, 25-26 August, 2014, Kuala Lumpur, Malaysia.

26. "Production of Alumina Nanoparticles (Al_2O_3) using Pulsed Laser Ablation Technique in Ethanol Solution" presented in 11th International Congress "Machines, Technologies, Materials", 17 – 20.09.2014, Varna, Bulgaria.

27. "Study the Effect of Different Liquid Media on the Synthesis of Alumina (Al_2O_3) Nanoparticle by Pulsed Laser Ablation Technique", presented in Advances in Materials & Processing Technology Conference, Atlantis The Palm, Nov. 16-20, 2014, Dubai, United Arab Emirates, organized by the American Society of Materials in cooperation with The Society for Protective Coatings (SSPC), Saudi Aramco , Qatar University (QU), Prince Mohammad Bin Fahd University (PMU) , and Masdar Institute of Science and Technology as one of the best research-oriented universities focused on alternative energy and sustainability for the GCC region.

28. "Study the Effect of Liquid Layer Level on the Formation of Zinc Oxide Nanoparticles Synthesized by Liquid-Phase Pulsed Laser Ablation", Conference on Nanotechnology for Water Treatment and Solar Energy Applications, Muscat, Oman, 15 – 16 of December 2015.

29. "Laser Surface Treatment of Al-12%Si alloy", 5th International Conference of Materials Processing and Characterization (ICMPC 2016), Hyderabad, India, 12-13, March, 2016.

30. "Study the Effect of Liquid Layer Level on the Formation of Zinc Oxide Nanoparticles Synthesized by Liquid-Phase Pulsed Laser Ablation", 2016 4th Asia Conference on Mechanical and Materials Engineering (ACMME2016) to be held in Kuala Lumpur, Malaysia during July 14-18, 2016.

31. "Study the Structural and Mechanical Characterization of Hybrid Nanocomposite Material", 2017 5th Asia Conference on Mechanical and Materials Engineering (ACMME2017) to be held in University of Tokyo, Japan during June 9-11, 2017.

32. "Study of the Wear Mechanism for (Al-12Si) Alloy after Laser Surface Hardening Processing", International Conference on Tribology (BalkanTRib'17), 13-15 September 2017, Cappadocia/TURKEY.

33. "Evaluation of the Residual Stresses in Al₂O₃ Wear Protection Coating using X-Ray Diffraction Technique and Finite Element Method", International Conference on Tribology (BalkanTRib'17), 13-15 September 2017, Cappadocia/TURKEY.

Post Graduate Supervision:-

(Student's Name), (Degree),(Thesis Title),(Year Awarded).

Dhia Ahmed Salal, Master, (Laser Heat Treatment for 41Cr4 and Ck45 Steel Alloys), (2005).

Ekhlas Edan Kader, Master, (Theoretical Model for the Prediction of Melted Width and Depth of Laser Sealed of Advanced Ceramic Coatings (2007).

Abeer S. A., Master, (Laser Spot Welding of Sheet Metals using Assisting Gases (2010).

Dhia A. S. Ph.D. (Estimation of the Residual Stresses in Laser Welding of Dissimilar Materials using Computational and Experimental Techniques), (2013).

Suha I. A., Ph.D. (Laser Ablation of Nano-Compounds Materials), (2014).

Abeer S. A., Ph.D., (Dissimilar Nd:YAG Laser Welding of Grade 2 Titanium to 3105-O Aluminum Alloy), (2015).

Hala Mahmood, M.Sc., (Structural and Mechanical Characterization of Hybrid Nanocomposite Materials), (2016).

Smah Rasheed, M.Sc., (Evaluation The Residual Stresses in Wear Protection Coatings using Multi Techniques), (2016).

Honors and Awards

1. Iraqi Science Day Award from Iraqi Ministry of Higher Education and Scientific Research, Baghdad, Iraq, 2011

2. Iraqi Science Day Award from Iraqi Ministry of Higher Education and Scientific Research, Baghdad, Iraq, 2012

3. Iraqi Science Day Award from Iraqi Ministry of Higher Education and Scientific Research, Baghdad, Iraq, 2013
4. Higher Education Award for Science, Iraqi Ministry of Higher Education and Scientific Research, Baghdad, Iraq, 2014