Curriculum Vitae (CV)

Adel Fathy Meselhy Ibrahim

Personal Information:

Academic Rank: Professor (Full)

Department: Mechanical Design and Production Engineering Dept.
Faculty of Engineering - Zagazig University – Zagazig - Egypt

Specialization: Mechanical Design and Production

Position: **Head of Mechanical Engineering Department** - Higher Technological Institute - Tenth of Ramadan, Egypt.

Quality Assurance Center Manager- Higher Technological Institute - Tenth of Ramadan, Egypt.

Google Scholar: https://scholar.google.com/citations?user=A_crd2kAAAAJ&hl=ar&oi=ao

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Education:

Degree	Discipline	Institution	Year
Ph.D.	Mechanical Design and Production Engineering	Faculty of Engineering, Zagazig University, Egypt.	2009
M.Sc.	Mechanical Design and Production Engineering	Faculty of Engineering, Zagazig University, Egypt.	2004
B.Sc.	Mechanical Design and Production Engineering	Faculty of Engineering, Zagazig University, Egypt.	1998

Academic Experience:

Institution:

Rank: **Professor (Full)**

Dates: **2020**

Institution:

Rank: **Associate Professor**

Dates: **2014**

Institution:

Rank: **Assistant Professor**

Dates: **2009**

Institution:

Rank: **Research Assistant (PhD student)**

Dates: **2005**

Institution:

Rank: **Teaching Assistant**

Dates: **1999**

Research interests:

- In-situ Nanocomposites
- Metal matrix composites
- Powder Metallurgy
- Mechanical alloying
- Accumulative roll bonding
- Friction stir welding
- Polymers matrix composites

Publications:

1. Alsoruji, G. S., Sadoun, A. M., Abd Elaziz, M., Al-Betar, M. A., Abdallah, A. W., & **Fathy, A.** (2023). On the prediction of the mechanical properties of ultrafine grain Al-TiO2 nanocomposites using a modified long-short term memory model with beluga whale optimizer. *Journal of Materials Research and Technology*.
2. Ahmadian, H., Sadoun, A. M., **Fathy, A.,** & Zhou, T. (2023). Utilizing a unified conceptual dynamic model for prediction of particle size of duel-matrix nanocomposites during mechanical alloying. *Powder Technology*, 118291.
3. Sadoun, A. M., Najjar, I. M. R., **Fathy, A.,** Abd Elaziz, M., Al-qaness, M. A., Abdallah, A. W., & Elmahdy, M. (2023). An enhanced Dendritic Neural Algorithm to predict the wear behavior of alumina coated silver reinforced copper nanocomposites. *Alexandria Engineering Journal*, *65*, 809-823.
4. Najjar, I. R., Sadoun, A. M., **Fathy, A.,** Abdallah, A. W., Elaziz, M. A., & Elmahdy, M. (2022). Prediction of Tribological Properties of Alumina-Coated, Silver-Reinforced Copper Nanocomposites Using Long Short-Term Model Combined with Golden Jackal Optimization. Lubricants, 10(11), 277.
5. Najjar, I. M. R., Sadoun, A. M., Abd Elaziz, M., Abdallah, A. W., **Fathy, A**., & Elsheikh, A. H. (2022). Predicting kerf quality characteristics in laser cutting of basalt fibers reinforced polymer composites using neural network and chimp optimization. *Alexandria Engineering Journal*, *61*(12), 11005-11018.
6. Sadoun, A. M., Najjar, I. R., Alsoruji, G. S., Abd-Elwahed, M. S., Elaziz, M. A., & **Fathy, A.** (2022). Utilization of improved machine learning method based on artificial hummingbird algorithm to predict the tribological behavior of Cu-Al2O3 nanocomposites synthesized by in situ method. *Mathematics*, *10*(8), 1266.
7. Sadoun, A. M., **Meselhy, A. F.,** & Abdallah, A. W. (2021). Microstructural, mechanical and wear behavior of electroless assisted silver coated Al2O3–Cu nanocomposites. *Materials Chemistry and Physics*, *266*, 124562.
8. Sadoun, A. M., Abd El-Wadoud, F., **Fathy, A**., Kabeel, A. M., & Megahed, A. A. (2021). Effect of through-the-thickness position of aluminum wire mesh on the mechanical properties of GFRP/Al hybrid composites. *Journal of Materials Research and Technology*, *15*, 500-510.

9. Megahed, M., **Fathy, A**., Morsy, D., & Shehata, F. (2021). Mechanical Performance of glass/epoxy composites enhanced by micro-and nanosized aluminum particles. *Journal of Industrial Textiles*, *51*(1), 68-92.
10. Sadoun, A. M., Najjar, I. M. R., Abd-Elwahed, M. S., & **Meselhy, A.** (2020). Experimental study on properties of Al–Al2O3 nanocomposite hybridized by graphene nanosheets. *Journal of Materials Research and Technology*, *9*(6), 14708-14717.
11. Sadoun, A. M., Mohammed, M. M., **Fathy, A.,** & El-Kady, O. A. (2020). Effect of Al2O3 addition on hardness and wear behavior of Cu–Al2O3 electro-less coated Ag nanocomposite. *Journal of materials research and technology*, *9*(3), 5024-5033.
12. Sadoun, A. M., Mohammed, M. M., Elsayed, E. M., **Meselhy, A. F.**, & El-Kady, O. A. (**2020**). Effect of nano Al2O3 coated Ag addition on the corrosion resistance and electrochemical behavior of Cu-Al2O3 nanocomposites. Journal of Materials Research and Technology.
13. Shehata, F., **Fathy, A**., Megahed, M., & Morsy, D. (**2020**). Fabrication and Characterization of Nano-filled Polymer Composites. The Egyptian International Journal of Engineering Sciences & Technology, 28, 33-38.
14. Shaat, M., **Fathy, A.**, & Wagih, A. (**2020**). Correlation between grain boundary evolution and mechanical properties of ultrafine-grained metals. Mechanics of Materials, 103321.
15. Abd-Elwahed, M. S., & **Meselhy, A. F.** (**2020**). Experimental investigation on the mechanical, structural and thermal properties of Cu–ZrO2 nanocomposites hybridized by graphene nanoplatelets. Ceramics International.
16. Sadoun, A. M., **Meselhy, A. F.**, & Deabs, A. W. (**2020**). Improved strength and ductility of friction stir tailor-welded blanks of base metal AA2024 reinforced with interlayer strip of AA7075. Results in Physics, 102911.
17. Sadoun, A. M., **Fathy, A.**, Abu-Oqail, A., Elmetwaly, H. T., & Wagih, A. (**2020**). Structural, mechanical and tribological properties of Cu–ZrO2/GNPs hybrid nanocomposites. Ceramics International, 46(6), 7586-7594.
18. Khadir, A. I., & **Fathy, A.** (**2020**). Enhanced strength and ductility of Al-SiC nanocomposites synthesized by accumulative roll bonding. Journal of Materials Research and Technology, 9(1), 478-489.
19. Eltaher, M. A., Wagih, A., Melaibari, A., **Fathy, A.**, & Lubineau, G. (**2020**). Effect of Al2O3 particles on mechanical and tribological properties of Al–Mg dual-matrix nanocomposites. Ceramics International, 46(5), 5779-5787.
20. Sadoun, A. M., & **Fathy, A**. (**2019**). Experimental study on tribological properties of Cu–Al2O3 nanocomposite hybridized by graphene nanoplatelets. Ceramics International, 45(18), 24784-24792.
21. Sadoun, A. M., Wagih, A., **Fathy, A.,** & Essa, A. R. S. (**2019**). Effect of tool pin side area ratio on temperature distribution in friction stir welding. Results in Physics, 15, 102814.
22. Elwan, M., **Fathy, A**., Wagih, A., Essa, A. R. S., Abu-Oqail, A., & EL-Nikhaily, A. E. (**2019**). Fabrication and investigation on the properties of ilmenite (FeTiO3)-based Al composite by accumulative roll bonding. Journal of Composite Materials, inpress.
23. W.S. Barakat, A. Wagih, Omayma A. Elkady, A. Abu-Oqail, **A. Fathy**, A. EL-Nikhaily, Effect of Al_2O_3 nanoparticles content and compaction temperature on properties of Al–Al_2O_3 coated Cu nanocomposites. Composites Part B 175 **(2019)** 107140.

24. **A.F. Meselhy** & M.M. Reda, Investigation of mechanical properties of nanostructured Al-SiC composite manufactured by accumulative roll. Journal of Composite Materials, (**2019)** 1-11.
25. Abu-Oqail, A. Samir, A. R. S. Essa, A. Wagih, **A. Fathy**, Effect of GNPs coated Ag on microstructure and mechanical properties of Cu-Fe dual-matrix nanocomposite. Journal of Alloys and Compounds 781 **(2019**)64-74.
26. Abu-Oqail, A. Wagih, **A. Fathy**, O. Elkady, A.M. Kabeel, Effect of high energy ball milling on strengthening of Cu-ZrO2 nanocomposites. Ceramics International, 45 (5) (**2019)** 5866-5875.
27. Melaibari, **A. Fathy**, M. Mansouri, M.A. Eltaher, Experimental and numerical investigation on strengthening mechanisms of nanostructured Al-SiC composite. Journal of Alloys and Compounds 774 **(2019**) 1123-1132.
28. **Fathy, A.** Wagih, A. Abu-Oqail, Effect of ZrO2 content on properties of Cu-ZrO_2 nanocomposites synthesized by optimized high energy ball milling. Ceramics International, 45(2) **(2019)**2319-2329.
29. Wagih, A. Abu-Oqail, **A. Fathy**, Effect of GNPs content on thermal and mechanical properties of a novel hybrid Cu-Al2O3/GNPs coated Ag nanocomposite. Ceramics International, 45(1) **(2019)**1115-1124.
30. **A. Fathy**, D. Ibrahim, O. Elkady & M. Hassan, Evaluation of mechanical properties of 1050-Al reinforced with SiC particles via accumulative roll bonding process. Journal of Composite Materials, 53 (2) (**2019)** 209-218.
31. **Fathy, A.** Abu-Oqail, A. Wagih, Improved mechanical and wear properties of hybrid Al-Al_2O_3/GNPs electro-less coated Ni nanocomposite. Ceramics International, 44(18) **(2018)**22135-22145.
32. A. Wagih, **A. Fathy**, A.M. Kabeel Optimum milling parameters for production of highly uniform metal-matrix nanocomposites with improved mechanical properties. Advanced Powder Technology, 29(10) **(2018)** 2527-2537.
33. A. Wagih, **A. Fathy**, D. Ibrahim, O. Elkady & M. Hassan, Experimental investigation on strengthening mechanisms in Al-SiC nanocomposites and 3D FE simulation of Vickers indentation. Journal of Alloys and Compounds, 752 **(2018)** 137-147.
34. **Adel Fathy**, Investigation on microstructure and properties of Cu-ZrO2 nanocomposites synthesized by in situ processing. Materials letters, 213**(2018)** 95–99.
35. A. Wagih, **A. Fathy**, Improving compressibility and thermal properties of Al-Al_2O_3 nanocomposites using Mg particles. Journal of Materials Science 53 **(2018)**11393-11402.
36. **Adel Fathy**, Omayma Elkady, Ahmed Abu-Oqail, Production and properties of Cu-ZrO2 nanocomposites. Journal of Composite Materials, 52**(2018)**1519-1529.
37. **A. Fathy**, Omayma Elkady and Ahmed Abu-Oqail, Microstructure, mechanical and wear properties of Cu–ZrO2 nanocomposites. Materials Science and Technology, 33**(2017)**2138-2146.
38. A. Wagih, **A. Fathy**, Experimental investigation and FE simulation of spherical indentation on nano-alumina reinforced copper-matrix composite produced by three different techniques. Advanced Powder Technology, 28 **(2017)** 1954–1965.
39. **Adel Fathy**, Omayma Elkady, Ahmed Abu-Oqail, Synthesis and characterization of Cu–ZrO2 nanocomposite produced by thermochemical process. Journal of Alloys and Compounds, 719 **(2017)** 411-419.

40. N. E. Mahallawy, **A. Fathy**, & M. Hassan, Evaluation of mechanical properties and microstructure of Al/Al–12% Si multilayer via warm accumulative roll bonding process, Journal of Composite Materials, **(2017)** 1-11.
41. **A. Fathy**, A Shaker, M Abdel Hamid, AA Megahed, The effects of nano-silica/nano-alumina on fatigue behavior of glass fiber-reinforced epoxy composites, Journal of Composite Materials, 51(12)**(2017)**1667–1679 .
42. Dalia Ibrahim, **Adel Fathy**, Omama lkady, and Mohammed Hassan, Synthesis and Characterization of Al-SiC Composite by Accumulative Roll-Bonding (ARB). Engineering Research Journal, 34**(2017**)33-39.
43. D. Saber, Kh. Abd El-Aziz, **A. Fathy**, Corrosion Behavior of Copper–Alumina Nanocomposites in Different Corrosive Media, International Journal of Mechanical Engineering, 5(6)**(2016**)1–10.
44. Ahmed Wagih, **Adel Fathy**, Tamer Ali Sebaey, Experimental investigation on the compressibility of Al/Al_2O_3 composites, International Journal of Materials and Product Technology, 52**(2016)**312-332.
45. A. Wagih, **A. Fathy**, Experimental investigation and FE simulation of nano-indentation on $Al–Al_2O_3$ nanocomposites, Journal of Advanced Powder Technology, 27**(2016)**403-410.
46. Nahed El Mahallawy, **Adel Fathy**, Walaa Abdelaziem, Mohammed Hassan, Microstructure evolution and mechanical properties of Al/Al–12% Si multilayer processed by accumulative roll bonding (ARB), Materials Science and Engineering A, 647 **(2015)** 127-135.
47. **A. Fathy**, Omyma El-Kady, Moustafa M.M. Mohammed, Effect of Iron Addition on the Microstructure, Mechanical and Magnetic Properties of Al-Matrix Composite Produced by Powder Metallurgy Route, Transactions of Nonferrous Metals Society of China, 25**(2015)**46-53.
48. M. Hassan, & A. Fathy, Effect of wire brushing on cold roll bonding of Al 1050 sheets. The Egyptian International Journal of Engineering Sciences & Technology, 18(2) (2015).
49. **A. Fathy**, A. Wagih, M. Abd El-Hamid, Ahmed A. Hassan, The effect of Mg add on morphology and mechanical properties of $Al–xMg/10Al_2O_3$ nanocomposite produced by mechanical alloying, Journal of Advanced Powder Technology, 25 (4) **(2014)**1345 –1350.
50. **Fathy, A.** Sadoun, M. Abdelhameed, Effect of matrix/reinforcement particle size ratio (PSR) on the mechanical properties of extruded Al–SiC composites, International Journal of Advanced Manufacturing Technology, **(2014)** 5901-5909.
51. **Fathy, A.** Wagih, M. Abd El-Hamid, A. A. Hassan, Effect of Mechanical Milling on the Morphology and Structural Evaluation of $Al-Al_2O_3$ Nanocomposite Powders, International Journal of Engineering Transactions A: Basics Vol. 27, No. 4 **(2014)** 625-632.
52. Omyma El-Kady, **A. Fathy**, Effect of SiC particle size on the physical and mechanical properties of extruded Al matrix nanocomposites, Materials and Design 54 **(2014)** 348–353.
53. M. S. EL-Wazery, A. R. EL-Desouky, O. A. Hamed, **A. Fathy**, N. A. Mansour, Electrical and Mechanical Performance of Zirconia-Nickel Functionally Graded Materials, International Journal of Engineering Transactions A: Basics Vol. 26, No. 4 **(2013)** 375-382.
54. **A. Fathy**, Omyma El-Kady, Thermal expansion and thermal conductivity characteristics of $Cu–Al_2O_3$ nanocomposites, Materials and Design 46 **(2013)** 355–359.
55. **A. Fathy**, F. Shehata, M. Abdelhameed, M. Elmahdy, Compressive and wear resistance of nanometric alumina reinforced copper matrix composites, Materials and Design 36 **(2012)**100–107.

56. **A. Fathy,** A. A. Megahed, Prediction of abrasive wear rate of in situ Cu–Al_2O_3 nanocomposite using artificial neural networks, The International Journal of Advanced Manufacturing Technology, 62**(2012)** 953–963.
57. **A. Fathy**, M. Abdelhameed, F. Shehata, Effect of Some Manufacturing Parameters on Machining of Extruded Al-Al_2O_3 Composites. ISRN Materials Science, **2012**; 1-6.
58. F. Shehata, M. Abdelhameed, **A. Fathy**, M. Elmahdy, Preparation and Characteristics of Cu-Al_2O_3 Nanocomposite, Open Journal of Metal, 1**(2011)**25-33.
59. F. Shehata, **A. Fathy**, M. Abdelhameed, S.F. Moustafa, Fabrication of copper–alumina nanocomposites by mechanochemical routes, Journal of Alloys and Compounds 476 **(2009)** 300–305.
60. F. Shehata, **A. Fathy**, M. Abdelhameed, S.F. Moustafa, preparation and properties of Al_2O_3 nanoparticle reinforced copper matrix composite by in situ processing, Materials and Design 30 **(2009)** 2756–2762
61. F. Shehata, **A. Fathy**, M. Abdelhameed, S.F. Moustafa, Fabrication of copper-alumina nanocomposite by mechano-chemical routes, Journal of Nano Research Vol. 6 **(2009)** 51-60.
62. F. Shehata, **A. Fathy**, M. Abdelhameed, S.F. Moustafa, Properties of Copper-Alumina Nano-Composite Produced by mechano-chemical routes, Euro **2008** PM-Advanced Powder Metallurgy conference, 29 September-1 October, Mannheim, Germany.
63. **A. Fathy**, A. A. Megahed, Prediction of sliding wear rate of extruded Al–SiC composite Using artificial neutral networks, Fifth Assiut University International Conference On Mechanical Engineering Advanced Technology for Industrial Production, **(2011)** March 29-31.
64. A.I. Selmy, F. Shehata, **A. Fathy**, E. Gewfiel, Fabrication and characterization of aluminum graphite composites, Fifth Assiut University International Conference on Mechanical Engineering Advanced Technology for Industrial Production, (**2011**), March 29-31.
65. F. Shehata, **A. Fathy**, M. Abdelhameed, S.F. Moustafa, Fabrication and Properties of copper-alumina nanocomposite by mechano-chemical routes, 5th International powder metallurgy conference, 8-12 October **2008**, Ankara, Turkey.
66. F. Shehata, **A. Fathy**, M. Abdelhameed, S.F. Moustafa, Fabrication of copper-alumina nanocomposite by mechano-chemical routes, 1st International conference from nanoparticles and nanomaterials to nanodevices and nanosystems, 15-19 June **2008**, Halkidiki, Greece.
67. F. Shehata, M. Abdelhameed and **A. Fathy**, Effect of some manufacturing parameters on mechanical properties of extruded Al-alumina composites, Al-Azhar University Engineering Journal, JAUES Vol. 2, No. 4, Apr. **2007**.

Certifications or Professional Registrations:

Acted as a reviewer for the following journals:

- Journal of alloys and compounds
- Composite Structures
- Composite Part B
- Surface and Coatings Technology
- Journal of Materials Engineering and Performance
- Journal of Nanoparticle Research
- Journal of Composite Materials

- Materials Letters
- Journal of the Iranian Chemical Society
- Ceramics International
- Polymer Testing
- International Journal of Minerals, Metallurgy and Materials
- Physica B
- Results in physics
- Transactions of Nonferrous Metals Society of China
- Journal of Manufacturing Processes
- Materials Characterization
- Journal of Nuclear Materials
- Materials and Design
- Journal of Materials Research and Technology

Honors and Awards:

- The best 2% of university scientists included in the Stanford 2020 list
- The best 2% of university scientists included in the Stanford 2021 list
- The best 2% of university scientists included in the Stanford 2022 list

Teaching Experience:

Courses taught

- Theory of metal forming
- Theory of metal cutting
- Manufacturing processes
- Foundry Engineering
- Advanced Welding Methods
- Solidification of metals
- Composite Material Technology
- Advanced Material Science
- Engineering Material and Metallurgy
- Heat and surface treatments
- Production of Iron and steel
- Engineering and Mechanical Drawing
- Production Technology
- Stress analysis