

C.V. (Curriculum Vitae)



Personal Data:

Name : Yasser Mahmoud Abdelrhman Mahmoud
Date of Birth : January 07, 1984, Assiut, Egypt.
Marital status : Married.
Current Job : Associate Professor.
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Education & Research visits:

- 1. Visiting Researcher** with short training program in Department of Mechanical Engineering, **KoreaTECH University, South Korea – (January 2018 – February 2018)**
Under supervision of **Prof. Choi Seong Joo**.
- 2. Ph.D. degree in Materials science and Engineering - September 2016.**
Department of Materials Science and Engineering, Egypt-Japan University of Science and Technology (E-JUST), Alexandria, Egypt
Thesis entitled: “Design and characterization of new low-cost titanium alloys for biomedical applications”.
Supervisors: Dr. Mohammed Gepreel (E-JUST), Prof. Ahmed Abdelmoniem (E-JUST), Prof. Sengo Kobayashi (Ehime University – Japan), Dr. Kiochi Nakamura (Kyoto University – Japan)
- 3. Visiting Researcher** in Department of Materials Science and Biotechnology, Graduate School of Science and Engineering, **Ehime University, Japan (Sep. 2015 – June 2016).**
Under supervision of **Prof. Sengo Kobayashi**.
- 4. Master’s degree in mechanical engineering - March 2013**
Department of Mechanical Engineering, Faculty of Engineering, Assiut University, Assiut, Egypt.
Thesis entitled: “Slurry Erosion of Carburized and Boronized Low alloy Steel AISI 5117”
Supervisors: Prof. Dr. Karam M. M. Emara, Prof. Dr. Shemy M. Ahmed, Dr. Ahmed Abouel-kasem Ahmed.
- 5. Bachelor’s degree in mechanical engineering - June 2006**
Department of Mechanical Engineering, Faculty of Engineering, Assiut University, Assiut, Egypt.
Grade: Distinction with honorable rank - (GPA = 3.6) (Ranked the 1st of 156 students)
Graduation Project: Design, manufacturing, and studying the Performance of Vertical Centrifugal Casting Machine.

Employment History:

- Working as an **Associate professor** from January 24, 2023, till present.
- Working as an **Assistant professor** (Lecturer) from October 31, 2016, till January 23, 2023.
- Working as an assistant lecturer from March 13, 2013, till October 31, 2016.
- Working as a demonstrator (TA & RA) at the Mechanical Engineering Department, Assiut University, Assiut, Egypt from January 10, 2007, till March 13, 2013.

Research Areas:

- » Additive manufacturing (FDM & SLM)
- » Tribology (Wear – Friction – Lubrication).
- » Corrosion/Electrochemistry Characterizations.
- » Coatings (electroplating).
- » Materials Processing.
- » Mechanical properties characterizations.
- » Heat treatments and metallurgical investigations.
- » Design and Modeling using CAD and CAE Softwares.
- » Light alloys (Ti, Al, Mg) for aerospace and biomedical applications.
- » Bio-implants (Biomaterials), alloy design, production, and characterizations.
- » Cell Viability.
- » TiO₂ Nanotubes.

Publications:

- *About 30 Journal papers and 5 conference papers.*

Selected Papers

- [1] Abdelrhman, Yasser, Sengo Kobayashi, Satoshi Okano, Takeaki Okamoto, and Mohamed Abdel-Hady Gepreel. "Biocompatibility of Anodized Low-Cost Ti-4.7Mo-4.5Fe Alloy." *Materials Science Forum* 1016 (January 2021): 458–64.
- [2] Aldahash, S.A.; Abdelaal, O.; Abdelrhman, Y. Slurry Erosion–Corrosion Characteristics of As-Built Ti-6Al-4V Manufactured by Selective Laser Melting. *Materials* 2020, 13, 3967. <https://doi.org/10.3390/ma13183967>.
- [3] Mahmoud Heshmat and Yasser Abdelrhman, ANOVA and regression model of slurry erosion parameters of a polymeric spray paint film, *International Journal of Materials Engineering Innovation* 2020 11:3, 198-211
- [4] Osama Abdelaal, Mahmoud Heshmat, Yasser Abdelrhman, Experimental investigation on the effect of water-silica slurry impacts on 3D-Printed polylactic acid, *Tribology International*, Volume 151, 2020, 106410, ISSN 0301-679X, <https://doi.org/10.1016/j.triboint.2020.106410>.
(<http://www.sciencedirect.com/science/article/pii/S0301679X20302474>)
- [5] Omar, R., Oraby, E., Abdelrhman, Y. and Aboraia, M. (2020), "Effect of glycine as a complex agent on the surface and corrosion properties of Ni-P and Ni-P/Al₂O₃ electroless coating", *Anti-Corrosion Methods and Materials*, Vol. 67 No. 6, pp. 593-603. <https://doi.org/10.1108/ACMM-06-2020-2318>
- [6] Saleh, B.; Maher, I.; Abdelrhman, Y.; Heshmat, M.; Abdelaal, O. Adaptive Neuro-Fuzzy Inference System for Modelling the Effect of Slurry Impacts on PLA Material Processed by FDM. *Polymers* 2021, 13, 118. <https://doi.org/10.3390/polym13010118>.
- [7] Y. Abdelrhman, M. A.-H. Gepreel, S. Kobayashi, S. Okano, and T. Okamoto, "Biocompatibility of new low-cost ($\alpha + \beta$)-type Ti-Mo-Fe alloys for long-term implantation," *Mater. Sci. Eng. C*,

vol. 99, pp. 552–562, 2019. [I.F.: 5.08]

- [8] Y. Abdelrhman, M. A.-H. Gepreel, S. Kobayashi, S. Okano, and T. Okamoto, “Biocompatibility of Self-organized TiO₂ nanotubes with different topographies,” in The International Conference on Materials Science and Engineering: Recent Advances and Challenges (The ICMSE-RAC 2018), 2018.
- [9] Y. Abdelrhman, A. Abouel-Kasem, K. Emara, and S. Ahmed, “The effect of boronizing heat treatment on the slurry erosion of AISI 5117,” *Ind. Lubr. Tribol.*, vol. 70, no. 7, pp. 1176–1186, 2018. [I.F.: 0.76]
- [10] M. A.-H. Gepreel, S. Kobayashi, and Y. M. Abd-elrhman, “Biocompatibility of New Low-Cost Ti-Alloys,” in Proceedings of the 13th World Conference on Titanium, Hoboken, NJ, USA: John Wiley & Sons, Inc., 2016, pp. 1669–1671.
- [11] Y. Abd-elrhman, M. A. H. Gepreel, A. Abdel-Moniem, and S. Kobayashi, “Compatibility assessment of new V-free low-cost Ti-4.7Mo-4.5Fe alloy for some biomedical applications,” *Mater. Des.*, vol. 97, pp. 445–453, 2016. [I.F.: 4.53]
- [12] Y. M. Abd-Elrhman, M. A. Gepreel, A. Abd El-Moneim, and S. Kobayashi, “Electrochemical and corrosion resistance of new Ti-Mo-Fe alloys for biomedical applications,” in WIT Transactions on Engineering Sciences, 2015, vol. 90, pp. 369–378.
- [13] Y. Abd-elrhman, M. A.-H. Gepreel, K. Nakamura, S. Kobayashi, and M. Abd El-Moneim, Ahmed Ibrahim, “Electrochemical behavior of new Ti-Mo-Fe alloys in Ringer’s solution,” in 3rd International Conference on Corrosion Mitigation and Surface Protection, 2014.
- [14] Y. M. Abd-Elrahman, A. Abouel-Kasem, S. M. Ahmed, and K. M. Emara, “Stepwise Erosion as a Method for Investigating the Wear Mechanisms at Different Impact Angles in Slurry Erosion,” *J. Tribol.*, vol. 136, no. 2, p. 021608, 2014. [I.F.: 1.79]
- [15] Y. M. Abd-Elrhman, A. Abouel-Kasem, K. M. Emara, and S. M. Ahmed, “Effect of Impact Angle on Slurry Erosion Behavior and Mechanisms of Carburized AISI 5117 Steel,” *J. Tribol.*, vol. 136, no. 1, p. 011106, 2013. [I.F.: 1.79]
- [16] A. Abouel-Kasem, Y. M. Abd-elrhman, K. M. Emara, and S. M. Ahmed, “Design and Performance of Slurry Erosion Tester,” *J. Tribol.*, vol. 132, no. 2, p. 021601, 2010. [I.F.: 1.79]

- **Reviewing of Int. journal papers experience:**

Reviewer for the following international journals:

- Journal of Tribology – ASME.
- Materials Science and Engineering: C - Elsevier.
- Industrial Lubrication and Tribology – emerald Publishing.
- Tribology Letters – Springer.
- Surface and Coatings Technology - Elsevier.
- materials – MDPI
- polymers - MDPI
- Materials & Design – Elsevier.

- **Funded Research Grants**

- ❖ Optimization of Printing Parameters for Improving Surface and Mechanical Properties of Dual-Extruder 3d Printer Products, this project was funded by 75,000 EGP from Academy of Scientific Research and Technology (ASTR-Egypt), 2022.

- **Prizes and awards**

1. The best Research Award at the level of the Faculty of Engineering - Mechanical Engineering Department for the year 2022 on research titled:
“Improving surface roughness of polylactic acid (PLA) products manufactured by 3D printing using a novel slurry impact technique”.

- **Post graduate dissertations and theses (Ph.D. and Master's) I had/have supervised:**

- ✓ Study of Mechanical Properties and Dynamic Behavior of Granite –Epoxy Composite Materials
- ✓ Towards Improving the Extraction Efficiency of Cane Sugar Mills Using 3 Different Pitch. (3 P Mills)
- ✓ Study on The Effect of Adding Calcined Alumina on Microstructure and Mechanical Properties of Aluminum Foam
- ✓ Dissimilar Butt Friction Stir Welding of Aluminum Alloys with Higher Strength Interlayer
- ✓ Improvement of the Mechanical Properties of Fused Deposition Modeling Parts
- ✓ Effect of Adding Filler Material on The Mechanical Properties and Drilling Operation of Glass Fiber Reinforced Plastics (GFRP)
- ✓ Production and characterization of PLA-carbon fiber composite filaments for 3D printing
- ✓ Finite Element Simulation and Experimental Verification of The Double Wall Pipe Production Process from Copper and Aluminum Materials
- ✓ Cavitation Erosion-Corrosion Damage for Different Coated Surfaces
- ✓ Numerical and Experimental Study of Bimetallic Tubes Cladding Process Using Spherical Tipped Punch
- ✓ An experimental study on cavitation erosion-corrosion behavior of various stainless-steel grades

Teaching Experience

- **Courses I have taught for undergraduate and graduate courses (2007 – present):**

Engineering Drawing	Machine Design (I)
Mechanics of Materials	Machine Design (II)
Machine Construction	Mechanical Vibration
Theory of Machine (I)	Metrology
Tribology	CNC (Computer Numerical Control)
Theory of Machine (II)	Machine Tool Design
Material Science and Engineering	Mechanical Design Laboratories
Robotics and Automation	Heat Treatments (Graduate course).
Composite materials (Graduate course)	Modeling and simulation of mechanical engineering applications using FEA, ANSYS (Graduate course)

• **Graduated Projects I have supervised for undergraduate students:**

- » Design and performance of slurry pot erosion tester.
- » Design and manufacturing of a 3D printer.
- » Design, production, and performance test of car braking pads.
- » Design and Manufacturing of Injection Molds for Plastic and Rubber.
- » Design and Modeling of an Unconventional Wind Turbine Using CAD and CAE Softwares.
- » Design and Prototyping of an Active Vehicle Suspension System.
- » CAD/CAM Systems for Plastics Injection Mold Design *etc.*

I have a YouTube channel for online classes in some courses (Arabic language):

<https://www.youtube.com/@yasserasd123/playlists>

Training experience:

Visits and trainings:

- I had a training in Aluminum Company of Egypt at Rolling Sector & Extrusion Plant (2003).
- I had a training in CEMEX Company in Egypt, (2 months during summer holiday, 2005).
- I Visited many Korean companies in Korea such as Doosan heavy industrial, Hyundai heavy industrial, Hyundai Steel, Posco steel company (2018).
- I had an extensive training program on LabVIEW software at KoreaTECH university (2018).
- I had an extensive training program on Electronic Circuits (experimentally) in KoreaTECH university (2018).
- I had an extensive training program on SolidWorks software at KoreaTECH university (2018).
- I had an extensive training program on How to Use 3D Printing Machines in KoreaTECH university (2018).

As trainer:

- ♦ For SAMSUNG Company in Egypt, I trained their engineers how to use CAD/CAM Softwares.
- ♦ For LG Company in Egypt, I trained their engineers how to use CAD/CAM Softwares.
- ♦ For LEONI Company in Egypt, I trained their engineers how to use CAD/CAM Softwares.
- ♦ For CEMEX factory in Egypt, I trained their engineers how to use CAD/CAM Softwares.

Referees:

<p>Prof. Shemy Mohamed Ahmed Professor, Department of Mechanical Engineering, Faculty Engineering, ASSIUT UNIVERSITY 71516 Assiut - Egypt Tel.: +20-1285434314 E-mail: shemy2007@yahoo.com</p>	<p>Prof. Sengo Kobayashi Professor, Department of Materials Science and Biotechnology, Graduate School of Science and Engineering, EHIME UNIVERSITY 3 Bunkyo-cho, Matsuyama 790-8577, Japan Tel&Fax: +81-89-927-8524 E-mail: kobayashi.sengo.me@ehime-u.ac.jp</p>
<p>Prof. Ahmed Aly Diaa Sarhan Professor, Mechanical Engineering Department King Fahd University of Petroleum and Minerals Mobile: +966-13-860-2547 E-mail: ahsarhan@kfupm.edu.sa https://scholar.google.com/my/citations?user=azV4bboAAA&hl=en</p>	<p>Prof. Mohamed Abdel-Hady Gepreel Professor, Department of Materials Science and Engineering , Egypt-Japan University of Science and Technology (E-JUST), Alexandria, Egypt Mobile:+20-11-4737-5539, E-mail: gepreel@yahoo.com https://scholar.google.com/eg/citations?user=UvPgM5AAAAAJ&hl=en</p>

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