Ahmed Mohamed Mahmoud Ibrahim

Ph. D, Associate Professor, Faculty of Engineering, Minia University, El-Minya, 61519, Egypt
Visiting Professor, Mechanical and Aerospace College, UAE University

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Google Scholar	https://scholar.google.com/citations?hl=ar&user=3yELAQAAAAJ&view_op=list_works&sortby=pubdate
	✓ Arabic ✓ English ✓ Chinese ✓ Spanish

Citations	h-index	i-10 index	International Ranking (Scival)	Int. Papers	Int. Patents
1639	23	50	# 1 in Africa # 16 globally	78	1

Education

- *2013 to 2016, Ph.D. in Mechanical Engineering, Wuhan University of Technology, China.*
- *2008 to 2011, M.Sc. in Mechanical Engineering "Production Engineering and Mechanical Design", Minia University, Egypt.*
- *2002 to 2007, B.Sc.in Mechanical Engineering "Production Engineering and Mechanical Design", Minia University, Egypt.*

Career

- Aug. 2024 till Now, Visiting Professor, Mechanical and Aerospace Engineering College, UAE University, UAE.
- Nov. 2023 till Aug. 2024 , Research Fellow, Mechanical and Aerospace Engineering College, UAE University, UAE
- Sept. 2019 to Oct. 2023, Visiting Scholar, and Postdoc. Fellow, Vehicle and Mechanical Engineering College, Hunan University, China.
- Dec. 2021 till now, Associate Professor at Production Eng. Mechanical Design Department, Faculty of Engineering, Minia University, Egypt.
- May. 2023 till now, CEO of Expert House for Smart Engineering Systems CO. LTD.
- July. 2021 till now, Mechanical Design reviewer and consultant at ECARU (The Egyptian company for solid waste recycling).
- 2016 to 2021, Assistant Professor at Production Eng. Mechanical Design Department, Faculty of Engineering, Minia University, Egypt.
- May 2015 till July 2018, Lecturer and International joint program coordinator, China-U.K-Australia International Engineering Education joint program. Huzhou Vocational College, South Essex College, University of the Sunshine Coast.
- 2013 to June 2016, Research assistant, and Ph.D. at Wuhan University of Technology, and member of a research project funded by the Chinese government.
- 2011 to 2013, Assistant lecturer at Production Eng. and Mechanical Design Department, Faculty of Engineering, Minia University, Egypt.
- 2008 to 2011, Demonstrator at Production Eng. and Mechanical Design Department, Faculty of Engineering, Minia University, Egypt.

Area of interests

- ✓ *Tribology*
- ✓ *Contact physics*
- ✓ *Solid lubricants*
- ✓ *Self-lubricating composites*
- ✓ *Surface Engineering*
- ✓ *Advanced Manufacturing*
- ✓ *Sustainable Manufacturing*
- ✓ *Additive manufacturing*
- ✓ *Non-conventional and Conventional machining processes*
- ✓ *Aerospace Manufacturing*
- ✓ *Polymers*
- ✓ *Aerospace materials*
- ✓ *Mechanical Design*
- ✓ *Topology optimization*
- ✓ *Material science*
- ✓ *Composite materials*
- ✓ *Material characterization*

Awards

1) *2022, The distinction award and 3rd place in the "Ideas market" competition organized by Al-Baten Sports Club, KSA.*
2) *2018, the Supreme Council of Egyptian Universities award for designing and implementing a climbing robot for several industrial applications (Can work in harsh environments).*
3) *2017, Minia University Award for nanotechnology applications (Successful design of new material for climbing robots using nanotechnology and topology optimization (70% reduction in weight with better performance compared to aluminum)*
4) *2021, The scientific publication award for the academic year 2020-2021 from Minia University, Egypt.*
5) *2020, The scientific publication award for the academic year 2019-2020 from Minia University, Egypt.*
6) *2019, The scientific publication award for the academic year 2018-2019 from Minia University, Egypt.*
7) *2018, The scientific publication award for the academic year 2017-2018 from Minia University, Egypt.*
8) *2017, The scientific publication award for the academic year 2016-2017 from Minia University, Egypt.*
9) *2016, the Outstanding Publication Award for the academic year 2015-2016 from Wuhan University of Technology, China.*
10) *2016, The scientific publication award for the academic year 2015-2016 from Minia University, Egypt.*
11) *2015, the Outstanding Publication Award for the academic year 2014-2015 from Wuhan University of Technology, China.*

Funds and Projects

1) *Natural Science Foundation of China (52005174); "**Sustainable manufacturing of Aerospace materials**". Principal investigator (PI)*
2) *Natural Science Foundation of Hunan Province(2021JJ40064); "**Towards Eco-friendly manufacturing of Aerospace materials and super hard alloys**". PI*
3) *Natural Science Foundation of Changsha(kq2014048) ; **Novel approaches for sustainable manufacturing of aerospace materials**. PI*
4) *The Egyptian academy of science and technology Fund for graduate projects, **Design of Aerospace unmanned climbing vehicle for aerospace applications**. 2017. (PI)*
5) *National Natural Science Foundation of China (51275370); the Nature Science Foundation of Hubei Province (2012FFB05104);**Developing of NiAl Self-lubricating composites for aerospace applications**.*
6) *The Fundamental Research Funds for the Central Universities (2014-yb-004); **Developing of NiAl Self-lubricating composites for aerospace applications***
7) *The Project for Science and Technology Plan of Wuhan City (20130105 01010139); **Developing of NiAl Self-lubricating composites for aerospace applications***
8) *The Academic Leader Program of Wuhan City (201150530146); and the Project for Teaching and Research project of Wuhan University of Technology (2012016). **Developing of NiAl Self-lubricating composites for aerospace applications***
9) *Consultant committee of faculty of Engineering, Minia University, Egypt. (using FEA simulation packages) to test the products.*

Top Journals which the papers are published in

	Journal name	Impact factor
1	*Chinese Journal of Aeronautics*	***5.7***
2	*Additive Manufacturing*	***11.632***
3	*Scientific Reports*	***4.6***
4	*Materials Science and Engineering: A*	**6.044**
5	*International Journal of Mechanical Sciences*	***6.772***
6	*Friction*	**6.8**
7	*Tribology International*	**5.620**
8	*Composites: Part B*	**11.322**
9	*Journal of Materials Research and Technology,JMR&T*	***6.267***
10	*Surface and Coatings Technology*	**4.865**
11	*Materials and Manufacturing Processes*	**4.783**
12	*Polymers*	***4.967***
13	*Case studies in thermal Engineering*	***6.268***
14	*Alexandria Engineering Journal*	**6.626**
15	*Tribology Letters*	**3.327**

Journal Editorial Board

1) Guest Editor of the special issue of Frontiers in Manufacturing Technology journal with the title "Transition to green manufacturing".
2) Associate Editor of Journal of Advanced Engineering Trends (JAET).
3) Associate Editor of Current Chinese Science (Applied Materials) Journal.
4) Associate Editor of the Journal of Mechanical Engineering, Science, and Innovation Journal.

Journal Reviewer

1) *Nanoscale*
2) *Tribology international*
3) *Wear*
4) *Materials and Design*
5) *RSC advances*
6) *Tribology transactions*
7) *Tribology Letters*
8) *Journal of material engineering and Performance*
9) *Industrial lubrication and tribology*
10) *Materials research express*
11) *Nanotechnology*
12) *Materials Today Communications*
13) *Journal of Physics: Condensed Matter*

Postgraduates' supervision

1) *PhD Thesis titled "Effect of nano additives on the mechanical properties of 3d printed PLA+ Parts". Minia University, Egypt, 2022.*
2) *Ph.D. Thesis titled "Autonomous parking of the self—driving vehicle at different traffic conditions". Minia University, Egypt, 2022.*
3) *Master thesis titled" DURABILITY INVESTIGATION OF SPUR GEARS FABRICATED USING 3D PRINTER", Minia University, Egypt, 2022.*
4) *Master Thesis titled" Research on eco-friendly cooling/lubrication of high precision grinding of Ti alloys using Biodegradable/MQL magnetic field assisted technique for manufacturing aerospace materials", Hunan University, China, (under Processing).*
5) *Master Thesis titled "Faults detection and self-adjusting of CNC machines using the AI and machine learning", Minia University, Egypt,, (under Processing).*

Industry Experience

1) *CEO and Co-founder of Expert House for Smart Engineering Solutions (May 2021 till 8August 2024).*
2) *Mechanical Design Reviewer, The Egyptian Company for Solid Waste Recycling (ECARU). (July 2020 to May 2021).*

Academic Administration Experience

1) *Member of the Engineering Program Design and Establishment Committee, Minia National University 2020-2023).*
2) *Member of the Engineering Labs Establishment Committee, Minia National University (2020- 2023).*
3) *Member of the Standardization and Evaluation Unit, Faculty of Engineering, Minia University (2016-2017).*
4) *Member of the Quality Assurance Unit, Faculty of Engineering, Minia University (2016-2017, 2020- 2023).*
5) *Member of the Engineering Consultation Unit, Faculty of Engineering, Minia University (2016- 2017, 2020-2023).*
6) *Engineering Program Coordinator, International joint program, Beijing International Education Institute (BIEI), China, U.K, Australia.*

Selected International Refereed Journals:

:Selected International Refereed Journals

1) Abd-El Nabi, A.M., Mahmoud, M., Marzouk, W. Nafea M. El sheikh A. Mourad A. I. **Ibrahim AMM***. Tribological characteristics of porous 3D-printed PLA+ with anaerobic methacrylate self-impregnated lubricant. Prog Addit Manuf. 2024. https://doi.org/10.1007/s40964-024-00903-7
2) Li W, Hu X, Guo X, Xie S, Tian W, Huang X, & **Ibrahim AMM**. Enhanced Precision Lapping Techniques for Fused Quartz Optical Elements: Synergistic Integration of Mechanical and Mechanochemical Processes. Ceramics International, 2024.
3) **Ibrahim AMM**, Li W, Zeng Z, Bedairi B H, & Elsheikh A. Graphene Nanoplatelet-Water Nanofluids: A Sustainable Approach to Enhancing Ti-6Al-4V Grinding Performance through Minimum Quantity *Lubrication. Tribology International, 2024. 110145.*
4) *Li W, Zeng Z, Le S, Zhu K, Huang X, Hegab H, **Ibrahim AMM**. Investigation of a green nanofluid added with graphene and Al2O3 nano-additives for grinding hard-to- cut materials. Tribology International. 2024 Jul 1;195:109580.*
5) *Abouzaid A, Mousa S, **Ibrahim AMM**. Effect of standoff distance and traverse speed on the cutting quality during the abrasive water jet machining (AWJM) of brass. Machining Science and Technology. 2024 Mar 28:1-23.*
6) *Salah A, Fathalla A, Eldesouky E, Li W, **Ibrahim AMM**. Forecasting the Friction Coefficient of Rubbing Zirconia Ceramics by Titanium Alloy. International Journal of IntelligentSystems. 2023 Dec 12;2023.*
7) *Li W, Hu X, Ren Y, Zhou S, Mao C, Zhou Y, **Ibrahim AMM**. Ultra-precision lapping of H2O (g) plasma-treated CaF2 by porous diamond grits. Ceramics International. 2023 Nov 29.*
8) *Gassour H, El-Magd GE, Mazen A, **Ibrahim AMM***. Characterization of aluminum composite reinforced by silver nanoparticles. Scientific Reports. 2023 Oct 20;13(1):17952.*
9) *Salah A, Fathalla A, Eldesouky E, Li W, **Ibrahim AMM**. Forecasting the Friction Coefficient of Rubbing Zirconia Ceramics by Titanium Alloy. International Journal of IntelligentSystems. 2023 Dec 12;2023.*
10) *Li W, Hu X, Ren Y, Zhou S, Mao C, Zhou Y, **Ibrahim AMM**. Ultra-precision lapping of H2O (g) plasma-treated CaF2 by porous diamond grits. Ceramics International. 2023 Nov 29.*
11) *Nabhan A., Taha M., **Ibrahim AMM***. and Amir K,. Role of hybrid nanofiller GNPs/Al2O3 on enhancing the mechanical and tribological performance of HDPE composite. Scientific Reports, 2023; 13(1), p.12447.*

12) ***Ibrahim AMM**, Wei, L. I., MOURAD, A. H. I., Mohamed, A. E., ABD*

EL- NABY, A. M., Al SOUFI, M. S., ... & El SHEIKH, . Cooling and lubrication techniques in grinding: A state- of-the-art review, applications, and sustainability assessment. Chinese Journal of Aeronautics.2023, 36(7): 76-113.

13) *Yan S, Zhai W, Xiao J, Zhai W,* ***Ibrahim AMM****. Graphene oxide decorated spherical powder for Ni superalloy with high yield strength and ductility. Materials Science and Engineering: A. 2022;831:142221.*
14) *Xue Y, Wu C, Shi X, Huang Q,* ***Ibrahim AMM****. Effects of groove-textured surfaces filled with Sn-Ag-Cu and MXene- Ti3C2 composite lubricants on tribological properties of CSS- 42L bearing steel. Friction. 2022;10:1091-113.*
15) *Wei L, Wen-Liang J, Gui L, Bo W, Alsoufi MS, Elsheikh A,* ***Ibrahim AMM****. Analysis of large edge breakage of WC-Co cemented carbide tool blades emerging in precision grinding process. Journal of Materials Research and Technology. 2022;19:3916-29.*
16) *Raj MKA, Muthusamy S, Panchal H,* ***Ibrahim AMM****, Alsoufi MS, Elsheikh AH. Investigation of mechanical properties of dual-fiber reinforcement in polymer composite. Journal of Materials Research and Technology. 2022;18:3908-15.*
17) Padhan S, Das SR, Das A, Alsoufi MS, **Ibrahim AMM**, Elsheikh A. Machinability Investigation of Nitronic 60 Steel Turning Using SiAlON Ceramic Tools under Different Cooling/Lubrication Conditions. Materials. 2022;15:2368.
18) *Li W, Jiao Y, Jiang H-Y, Ren Y-H,* ***Ibrahim AMM.*** *Investigation of mechanical force acting on the surface modified- substrate layer area during the chemical-mechanical micro-grinding of monocrystalline silicon. International Journal of Mechanical Sciences. 2022;228:107482.*
19) *Li W,* ***Ibrahim AMM****, Ren Y, Abd-El Nabi AM. Nanofluids for Machining in the Era of Industry 4.0. Advances in Sustainable Machining and Manufacturing Processes: CRC Press, 2022. p. 121-33.*
20) *Li W, Chen Q, Wu J, Liu M, Ren Y,* ***Ibrahim AMM****. Investigation of the effect of vibration characteristics on the grinding performance of aero-engine blade tip. The International Journal of Advanced Manufacturing Technology. 2022;120:4663-79.*
21) *Krishnan R, Pandiaraj S, Muthusamy S, Panchal H, Alsoufi MS,* ***Ibrahim AMM****, et al. Biodegradable magnesium metal matrix composites for biomedical implants: synthesis, mechanical performance, and corrosion behavior-A review. Journal of Materials Research and Technology. 2022.*
22) ***Ibrahim AMM****, Omer MA, Das SR, Li W, Alsoufi MS, Elsheikh A. Evaluating the effect of minimum quantity lubrication during hard turning of AISI D3 steel using vegetable oil enriched with nano-additives. Alexandria Engineering Journal. 2022;61:10925-38.*
23) *Elsheikh AH, Shanmugan S, Muthuramalingam T, Thakur AK, Essa F,* ***Ibrahim AMM****, et al. A comprehensive review on residual stresses in turning. Advances in Manufacturing. 2022;10:287-312.*
24) *Zhai W, Sun A, Zeng W, Lu W, Liu X, Zhou L, Wang, Jian,* ***Ibrahim AMM****. High wear resistance and mechanical performance of NiAl*

bronze developed by electron beam powder bed fusion. Tribology Letters. 2021;69:1-10.

25) *Rangasamy G, Mani S, Kolandavelu SKS, Alsoufi MS**, Ibrahim AMM**, Muthusamy S, et al. An extensive analysis of mechanical, thermal and physical properties of jute fiber composites with different fiber orientations. Case Studies in Thermal Engineering. 2021;28:101612.*

26) *Lu W, Zhai W, Wang J, Liu X, Zhou L, **Ibrahim AMM**, et al. Additive manufacturing of isotropic-grained, high-strength and high-ductility copper alloys. Additive Manufacturing. 2021;38:101751.*

27) *Li W, Li Z, Yang J, Ren Y, Jiao Y, Hegab H**, Ibrahim AMM**. Modeling of the removal mechanism of monocrystalline silicon- based on phase change- dislocation theory and its edge chipping damage during micro-grinding. Precision Engineering. 2021;71:103-18.*

28) *Li W, Chen Q, Ren Y, Jiao Y, **Ibrahim AMM**. Hybrid micro- grinding process for manufacturing meso/micro-structures on monocrystalline silicon. Materials and Manufacturing Processes. 2021;36:17-26.*

29) *Fouly A, **Ibrahim AMM**, Sherif E-SM, FathEl-Bab AM, Badran A. Effect of low hydroxyapatite loading fraction on the mechanical and tribological characteristics of poly (methyl methacrylate) nanocomposites for dentures. Polymers. 2021;13:857.*

30) *Elsheikh AH, Muthuramalingam T, Shanmugan S, **Ibrahim AMM**, Ramesh B, Khoshaim AB, et al. Fine-tuned artificial intelligence model using pigeon optimizer for prediction of residual stresses during turning of Inconel 718. Journal of Materials Research and Technology. 2021;15:3622-34.*

31) *Zhou H, Shi X, Lu G, Chen Y, Yang Z, Wu C, Wen X, **Ibrahim AMM**. Friction and wear behaviors of TC4 alloy with surface microporous channels filled by Sn-Ag-Cu and Al_2O_3 nanoparticles. Surface and Coatings Technology. 2020;387:125552.*

32) *Lu G, Shi X, Zhang J, Zhou H, Xue Y, **Ibrahim AMM**. Effectsof surface composite structure with micro-grooves and Sn-Ag- Cu on reducing friction and wear of Ni3Al alloys. Surface and Coatings Technology. 2020;387:125540.*

33) ***Ibrahim AMM**, Li W, Xiao H, Zeng Z, Ren Y, Alsoufi MS. Energy conservation and environmental sustainability during grinding operation of Ti–6Al–4V alloys via eco- friendly oil/graphene nano additive and Minimum quantity lubrication. Tribology International. 2020;150:106387.*

34) ***Ibrahim AMM**, Shi X, Radwan AR, Mohamed AFA, Ezzat M.Enhancing the tribological properties of NiAl based nano- composites for aerospace bearing applications. Materials Research Express. 2019;6:085067.*

35) ***Ibrahim AMM**, Mohamed AFA, Fathelbab AM, Essa FA. Enhancing the tribological performance of epoxy composites utilizing carbon nano fibers additives for journal bearings. Materials Research Express. 2018;6:035307.*

36) *Huang Y, **Ibrahim AMM**, Shi X, Radwan AR, Zhai W, Yang K, et al. Tribological characterization of NiAl self-lubricating composites containing V2O5 nanowires. Journal of Materials Engineering and Performance. 2016;25:4941-51.*

37) ***Ibrahim AMM**, Shi X, Zhang A, Yang K, Zhai W. Tribological*

characteristics of NiAl matrix composites with 1.5 wt% graphene at elevated temperatures: An experimental and theoretical study. Tribology Transactions. 2015;58:1076-83.

38) ***Ibrahim AMM**, Shi X, Zhai W, Yang K. Improving the tribological properties of NiAl matrix composites via hybrid* lubricants of silver and graphene nano platelets. RSC Advances.2015;5:61554-61

39) Ibrahim AMM**, Shi X, Zhai W, Yao J, Xu Z, Cheng L, et al. Tribological behavior of NiAl–1.5 wt% graphene composite under different velocities. Tribology Transactions. 2014;57:1044-* ***50.

40) *Zhai W, Shi X, Yao J**, Ibrahim AMM**, Xu Z, Zhu Q, et al. Investigation of mechanical and tribological behaviors of multilayer graphene reinforced Ni3Al matrix composites. Composites Part B: Engineering. 2015;70:149-55.*

Patents

1) *Li Wei, **Ibrahim AMM**, Ren Yinghui, Huang Xiangming, Zhou Zhixiong Nanofluid-magnetic grinding fluid and magnetic field assisted micro-lubrication system, "Patent No. CN 111423929 A", National Intellectual Property Administration, China, 2021.*

Conference Papers

1) *Abd El-Nabi A M, Moustafa M M, Marzouk W, **Ibrahim AMM**. Effect of the bed and printing temperatures in the mechanical properties of 3d printing additive manufacturing (FDM) using PLA+ material. 3rd international Conference on the Engineering Science and Technology(ICEST 2021), Luxor (Egypt), ICEST2143, 2021.*

2) ***Ibrahim AMM**, Li W, Novel eco-friendly cooling/lubrication approach during the grinding of Ti alloys, Minia International Conference on Environment and Engineering (MICEE 2022), Hurghada (Egypt), 2022.*

Books/Book Chapters

1) *Li W, **Ibrahim AMM**, Ren YH, Abd-El Nabi AM, Nanofluids for Machining in the Era of Industry 4.0 (Chapter No. 7), Book title" Advances in Sustainable Machining and Manufacturing Processe",CRC press (Taylor and Francis Group),Pages 121-133, 2022.*
2) *Li, W., Hu, X. L., Mao, C., Ren, Y. H., & **Ibrahim A M M**.. Research Status on Microgrinding Technology. Innovative Development in Micromanufacturing Processes, CRC press (Taylor and Francis Group), 19-39, 2024.*

Delivered Courses, dates, and places

Subject	Years	Place
Engineering Materials	2024	UAE University
Aerospace Manufacturing	2024	UAE University
Introduction to Computer-Aided Manufacturing	2024	UAE University
CNC machines	2021-2022	Minia University
Engineering Drawing	2021-2022	Minia University
Production Engineering Technology	2021-2022	Minia University
Theory of Machines	2021-2022	Minia University
Machining Technology	2021-2022	Minia University
Mechanics of Machines	2021-2022	Minia University
Advanced Manufacturing processes	2020	Suzhou Vocational Institute of Industrial Technology South Essex College, England.
Manufacturing processes for Engineering materials	2020	Suzhou Vocational Institute of Industrial Technology South Essex College, England.
Mechanical Engineering Principles	2020	Suzhou Vocational Institute of Industrial Technology South Essex College, England.
Machine tools applications	2018	Huzhou vocational and technical college, China. South Essex College, England.
Projects management	2018	Huzhou vocational and technical college, China. South Essex College, England.
Industrial Engineering and management	2018	Huzhou vocational and technical college, China. South Essex College, England
Machine tools applications	2017	Huzhou vocational and technical college, China. South Essex College, England.
Mechatronics systems principles	2017	Huzhou vocational and technical college, China. South Essex College, England.
Computer applications in Mechanical Engineering	2016	Minia University, Egypt

Material science and Manufacturing processes	**May 2016 – July 2016**	**Hubei university of Arts and science, China.** **University of the sunshine coast, Australia**
Fundamentals of Thermodynamics	**May 2016 – July 2016**	**Hubei university of Arts and science, China.** **University of the sunshine coast, Australia**
Mechanical Vibration analysis	**2008-2011**	**Faculty of Engineering, Minia University, Egypt**
Traditional and non-traditional machining processes	**2007-2013**	**Faculty of Engineering, Minia University, Egypt**
Cutting tool design	**2007-2013**	**Faculty of Engineering, Minia University, Egypt**
Metal Forming	**2007-2010**	**Faculty of Engineering, Minia University, Egypt**
Physical Metallurgy	**2007-2011**	**Faculty of Engineering, Minia University, Egypt**
Mechanical drawing	**2007-2013**	**Faculty of Engineering, Minia University, Egypt**
AutoCAD Mechanical	**2007-2013**	**Faculty of Engineering, Minia University, Egypt** **&** **El MANARA International Academy, Egypt**

References

	Name	Title	E-mail	Tel.
1	Xiaoliang Shi	***Professor (PhD advisor)*** Wuhan University of Technology, China	sxl071932@126.com	+8613971614876
2	Hussein Hegab	***Assistant Professor*** University of Guelph, Canada	hhegab@uoguelph.ca	+15145603793
3	Wei Li	***Professor (Postdoc. Advisor)*** Hunan University, China	liwei@hnu.edu.cn	+8615116261033