

# CURRICULUM VITAE

## Dr. Mohamed Ahmed Ramadan

January 2024



### **Personal Information**

Date of birth: 02/02/1980

Nationality: Egyptian

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[Mohamed Ahmed Ramadan - Google Scholar](#)

### **Resume**

Associate Professor and Head of Railway Technology Department, Borj Al Arab Technological University, Egypt and permanently affiliated at Mechanical Engineering, Faculty of Engineering, Helwan University, Helwan, Egypt. My main area of expertise focuses on tribology in five main axes. One of the main axes of my research portfolio focuses on tribological properties of rubber flooring materials such how to reduce the risk of slipping and enhance walking safety in indoors and workplaces, investigate the effect of topographic orientation and tread pattern of the floor mat on the friction coefficient using rubber floor mat, and conduct Finite element simulations to study the effect of grooves orientation of floor mat sliding against rubber sheet on the friction coefficient. A second axis includes the tribological behavior of polymer nanocomposites. The third axis focuses on the tribological properties of 3D printed polymers. The fourth axis is engine tribology and automotive applications such effect of lubricant contamination on friction and wear performance of piston/ring interface, friction and wear of automotive friction materials and study the motors problems in the Middle East which experience serious wear as a result of the dusty atmosphere. The last axis is mechanical wear of bio materials such dental wear, and influence of brushing force on abrasive wear of teeth. Also my research includes development of new techniques for deposition of nanoentities onto solid substrates in the form of nanostructures or thin films, fabrication of graphene oxide - nickel oxide-based supercapacitors by means of laser deposition. As the positive environmental impact of wind energy, my research plans for the future involve erosion of wind turbines blades and green tribology.

### **Education**

**B. Sc**                      Production Engineering and Design, Minia University, Egypt  
1997-2002

**M. Sc.**                      Mechanical Engineering, Minia University, Egypt  
2004-2007  
Thesis: The Mechanical Wear of Teeth  
Supervisor: Prof. Dr. Waheed Yosry Ali

**PhD**                        Mechanical Engineering, Minia University  
2007-2010  
Thesis: Tribological Performance of Automotive Friction Materials  
Supervisor: Prof. Dr. Waheed Yosry Ali

### **Publications in Scientific Journals Indexed to the Journal Citation Report (JCR)**

- 1- **Ramadan M. A.**, Sabour H. A., EL-Shenawy E. “Tribological Properties of 3D Printed Polymers: PCL, ABS, PLA and Co Polyester, Tribology in Industry, vol. 45, no. 1, pp. 161-167, (2023). (**I. F. 1.41, Q2**).
- 2- **Ramadan M. A.**, “Friction Coefficient of Rubber Shoe Sole Sliding Against Different Rubber Floor Tiles”, Tribology in Industry, vol. 42, no. 2, pp. 244-252, (2022). (**I. F. 1.41, Q2**).
- 3- Pérez del Pino A., López M. R., **Ramadan M. A.**, Lebière P. G., Logofatu C., Martínez-Rovira I., Yousef I., György E., “Enhancement of supercapacitive properties of laser deposited graphene-based electrodes through carbon nanotube loading and nitrogen doping”, Physical Chemistry Chemical Physics, ROYAL SOC CHEMISTRY, vol. 21, pp. 25175-25186, (2019). <https://doi.org/10.1039/C9CP04237G>, (**I. F. 3.676, Q1**).
- 4- Pérez del Pino A., **Ramadan M. A.**, Lebière P. G., Ivan R., Logofatu C., Yousef I., György E., “Fabrication of graphene-based electrochemical capacitor electrodes through reactive inverse matrix assisted pulsed laser evaporation”, Applied Surface Science, vol. 484, pp. 245-256, (2019). <https://doi.org/10.1016/j.apsusc.2019.04.127>, (**I. F. 6.707, Q1**).
- 5- **Ramadan M. A.**, “Friction and Wear of Sand Contaminated Lubricated Sliding”, Friction, Vol. 6, no. 4, pp. 457-463, (2018). <https://doi.org/10.1007/s40544-017-0192-4> (**I. F. 6.167, Q1**).
- 6- **Ramadan M. A.**, Reda R., “CNTs, Al<sub>2</sub>O<sub>3</sub> and SiO<sub>2</sub> Reinforced Epoxy: Tribological Properties of Polymer”, Tribology in Industry, vol. 39, no. 3, pp. 357-363, (2017). DOI: 10.24874/ti.2017.39.03.11, (**I. F. 1.41, Q2**).
- 7- Ramadan M. A., “Effect of Treads Pattern of Rubber Floor Mat on The Friction Coefficient”, Tribology- Materials, Surfaces & Interfaces, vol. 11, no. 3, pp. 156-167, (2017). <https://doi.org/10.1080/17515831.2017.1397311>, (**I. F. 1.766, Q2**).

### **Conferences**

José Díaz-Álvarez, J. L. Cantero, **M. A. Ramadan**, X. Soldani, M.H. Miguélez, “3D Numerical Modelling of Machining”, CMM-2013 – Computer Methods in Mechanics, TS02-35-36, (2013).

### **Current Research under publications**

**Ramadan M. A.**, “Improving the tribological properties of the lubricant using ZnS Nanoparticles as lubricant Additives”, In Process.

### **Other Publications**

1. **Ramadan M. A.**, “Tribological investigations of 3D Printed Polymers and Their Applications: A Review” Journal of Modern Industry and Manufacturing, **vol. 1, no. 1, pp. 1-9, (2022)**.
2. **Ramadan M. A.**, “Friction and Wear of Carbon Fiber Reinforced Epoxy”, EGTRIB- Journal of

the Egyptian Society of Tribology, vol. 16, no. 4, pp. 1-12, (2019).

3. **Ramadan M. A.**, “Tribological Properties of Epoxy Reinforced by Randomly Oriented Chopped Carbon Fibers”, EGTRIB- Journal of the Egyptian Society of Tribology, vol. 16, no. 3, pp. 48-62, (2019).
4. El-Sherbiny Y. M., **Ramadan M. A.**, Ali W. Y., “Frictional Behaviour of Rubber Flooring Mat Fitted by Rectangular Treads”, Journal of the Egyptian Society of Tribology, Vol. 11 No. 2 , pp. 39 – 52, (2014).
5. **Ramadan M. A.**, Khashaba M. I., Ali W. Y., “Friction and Wear of Automotive Friction Materials”, Journal of the Egyptian Society of Tribology, Vol. 8 No.1, pp. 40 – 52, (2011).
6. **Ramadan M. A.**, Khashaba M. I., Ali W. Y., “Fade and Temperature Rise of Automotive Friction Materials”, Journal of the Egyptian Society of Tribology, Vol. 8 No. 1, pp. 53 – 66, (2011).
7. **Ramadan M. A.**, Abu Elainin H. M., Mazen A. A., Ali W. Y., “Abrasive Wear of Teeth”, Journal of the Egyptian Society of Tribology, Vol. 8 No. 2 , pp. 56 – 66, (2011).
8. **Ramadan M. A.**, Abu Elainin H. M., Mazen A. A., Ali W. Y., “Influence of Brushing Force on Abrasive Wear of Teeth”, Journal of the Egyptian Society of Tribology, Vol. 8 No. 4 , pp. 48 – 59, (2011).

### **Books**

- 1- **Ramadan M. A.**, Mazen A. A., Ali W. Y., “The Mechanical Wear of Teeth, Dental Wear”, Lap Lambert Academic Publishing, ISBN: 978- 3-659-00089-8, (2012).
- 2- **Ramadan M. A.**, Khashaba M. I., Ali W. Y., “Tribological Performance of Automotive Friction Materials”, Lap Lambert Academic Publishing, ISBN: 978-3-8484-8707-3, (2012).

### **Workshops**

- 1- The train of trainer workshop at UIBK: Innsbruck, Austria, Erasmus Project HEBA “Dedicated Material of Energy Efficiency in Buildings”, Austria at University of Innsbruck, March 2019.
- 2- Research Support Center workshops, Helwan University, Egypt, “Funded Projects (Themes and Mangment)”, 21st November 2020.
- 1- Research Support Center workshops, Helwan University, Egypt, “How to Design a Scientific Poster”, 5th December 2020.

### **Memberships**

- |              |   |
|--------------|---|
| 2013-2016    | Member, Mechanical Engineering Research Journal, Canadian Center of Science and Education |
| 2018-present | Member, Institute of Materials, Minerals and Mining (IOM3), London                        |

**Reviewer**

- 2019 - Present      Reviewer, Tribology in Industry Journal, Serbian Tribology Society
- 2019 – Present      Reviewer, Journal of Surface Topography: Metrology and Properties
- 2021 - Present      Expert Reviewer at AEIC, Academic Exchange Information Center.

[AEIC is a strategic partner of world-leading publishing houses, including IEEE, Springer, Elsevier, Wiley, IOP, EDP, ASME, SAGE, SPIE, Taylor & Francis group, American Scientific Publishing, DEStech Publishing, TIP and Atlantic press...]

- 2022 – Present      Reviewer, Nanotechnology Journal, Q1, IOP publishing.

**Editorial Board**

- 2021 – Present      Editor, Journal of Modern Industry and Manufacturing, Innovation Forever Publishing Group.

**Conference Committee Member**

- 1- 8th International Forum on Manufacturing Technology and Engineering Materials (IFEMMT 2022), China.
- 2- 4th International Conference on Applied Mechanics and Mechanical Engineering ( ICAMME 2023), Kunming, China.
- 3- 1st International Manufacturing and Material Mechanics Conference, 4-7 March 2024, Helwan University, Egypt.

**Awarded Projects**

G6128: NATO Science for Peace and Security Programme, Self-healing and self-lubricating nanocomposites for atmosphere/vacuum bearings, Nevshupa Kasatkin, **Spain**, Zgalat-Lozinskyi, **Ukraine**, Ramadan M. A, **Egypt**, **July 2023**.

**Scholarships Received**

- 16/01/2012 - 16/1/2014      Postdoctoral fellowship, Carlos III University, Madrid, Spain
- 10/09/2017 – 08/12/2017      Visiting professor, Shanghai University of Engineering Science, China

**Research Stays**

18/03/2018 - 12/09/2018      Postdoctoral Stay, Institute of Material Science Barcelona, Spain

**Research work experience**

| Institution                                    | Stay type    | Start date | End date   | Duration, days |
|--|--------------|------------|------------|----------------|
| Carlos III University, Madrid, Spain           | Postdoctoral | 16/01/2012 | 16/1/2014  | 710            |
| Institute of Material Science Barcelona, Spain | Postdoctoral | 18/03/2018 | 12/09/2018 | 180            |

## **Teaching experiences**

| <b>Institution</b>  | <b>Position</b>   | <b>Courses taught</b>  | <b>Duration</b>              |
|---|---|--|------------------------------|
| Borj Al Arab Technological University, Alexandria, Egypt                        | Head of Railway Technology Department<br>(Current work) | 1-Engineering drawing and projection.<br>2- Train operation<br>3-Rail way track maintenance<br>4-Main elements of railway track<br>5-Occupational Safety and Health  | 2 Years<br>(2022-present)    |
| Faculty of Engineering, Helwan university, Helwan, Egypt                        | Associate professor                                     | 1-Materials Engineering III<br>2-Materials Engineering II<br>3-Metal Forming<br>4-Powder Metallurgy<br>5-Solid mechanics<br>6-Mechanical Maintenance<br>7-Material properties and tests (post graduate course) | 12 Years<br>(2009-present)   |
| Carlos III University, Madrid, Spain  | Postdoctoral  | 1- Mechanical Technology<br>2-Mechanical Engineering Drawing<br>3-Mechanics Lab  | 2 Years<br>(2012-2014)       |
| Shanghai university of Engineering Sciences, Shanghai, China (Sino- US program) | Adjunct professor                                       | 1- Introduction to Thermodynamics<br>2- Thermodynamics Lab<br>3-Manufacturing Engineering Processes<br>4-Engineering Cost Analysis   | 3 Months<br>(9/2017-12/2017) |
| Higher Technological Institute, Minia, Egypt                                    | Teaching assistant                                      | 1-Production Technology<br>2-Production Workshop<br>3-Engineering Mechanics<br>4- Material Technology<br>5- Engineering Drawing<br>6- Stress Analysis  | 3 Years<br>(2006-2009)       |
| Faculty of Engineering, El Minia University, Egypt                              | Teaching assistant                                      | 1-Mechanical Vibration<br>2- Mechanical Design<br>3- Applied Mechanics<br>4- Machine Theory<br>5- Engineering Drawing  | 2 Years<br>(2004-2006)       |

### **Responsibilities**

- Organizing tutorial discussions on topics
- Explaining the difficult concepts
- Providing guidance to undergraduate students researching term papers
- Counsel the students experiencing difficulties in the course
- Graded term papers, final examinations, and student tutorial participation
- Supervising the project of final year students
- Supervising Master and PhD students

## **International Accreditation**

- A favorable report in teaching and research from the Catalan University Quality Assurance

Agency (AQU), Spain

### **Appreciate Certificates**

- Appreciate certificate for the innovation in teaching from Carlos III University, Madrid, Spain

### **Relevant Scientific Skills and Techniques**

- Languages: Fluent in English and basic in Spanish
- Knowledge and experience in the design and Manufacturing many tribological test rigs according to ASTM. I have designed and manufactured several test rigs such as reduced scale brake dynamometer, Pin on Disc, Cross Pins, dental brushing test rig, Shoes/flooring sliding test rig and piston ring/cylinder liner sliding test rig.
- Knowledge and experience in relevant characterization techniques such as AFM, SEM / EDS, and TEM.
- Knowledge and experience in supervising M. Sc. And PhD student theses.
- Knowledge and experience in supervising project of final year under graduate students every year.
- Ability to work as a team, in a multicultural and multidisciplinary environment.
- Knowledge in treating with various software such Solid Edge, Deform, ABAQUS, COMSOL, ORIGIN and Skillful in using computers and all Microsoft office programs (ICDL)
- Ability to present, disseminate and communicate research to different audiences.
- Experience in writing scientific articles, patents, abstracts and conference articles.
- Ability to propose, lead and develop projects, and Independence.
- Knowledge of the ASTM standard regarding different tribological test rigs.

### **Administrative experiences**

- Head of the section of Production Engineering and nomination to head the Department of Mechanical Engineering at Helwan University.
- Head of the Railway Technology Department at Borg Al Arab Technological University, Egypt.
- Member of the Council of the Faculty of Industrial and Energy Technology at Borg Al Arab Technological University, Egypt.
- Chairman of the committee for preparing study schedules for Borg Al Arab Technological University, Egypt.
- A member of the technical committees for establishing and equipping the laboratories of Borg Al Arab Technological University, Egypt.
- Member of the Committee for the Preparation of Study Regulations at Borg Al Arab Technological University, Egypt.
- Coordinator of the Projects and International Relations Unit at Borg Al Arab Technological University, Egypt.
- Director of the Student Entrepreneurship Center at Borg El-Arab University of Technology.
- Director of the Innovation and Technology Club at Borg Al Arab Technological University, Egypt.