

# Ibrahim M. Allafi, Ph.D.

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## Click & Connect

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JUST E-Portfolio:  <https://www.just.edu.jo/eportfolio/Pages/Default.aspx?email=imallafi>  
Google Scholar:  <https://scholar.google.com/citations?user=GdIThYAAAAJ&hl=ar&oi=ao>  
ResearchGate:  <https://www.researchgate.net/profile/Ibrahim-Allafi-2>  
LinkedIn:  <https://www.linkedin.com/in/ibrahimmallafi>

## Research Interest

Design, modeling, analysis, control, diagnosis, prognosis, and mitigation of electric machines and drive systems for electric vehicle and wind generation applications.

## Academic Qualifications

- Jan. 2020 – Jun. 2023  **Doctor of Philosophy** in Electrical and Computer Engineering  
Electric Machines and Power Electronics Research (EMPower) Laboratory  
Michigan State University, East Lansing, MI, USA  
GPA: 4.0
- Sep. 2018 – Jan. 2020  **Master of Science** in Electrical Engineering  
Electric Machines and Power Electronics Research (EMPower) Laboratory  
Michigan State University, East Lansing, MI, USA  
GPA: 4.0
- Oct. 2012 – Jun. 2017  **Bachelor of Science** in Electrical Engineering  
Power Systems and Control Track  
Jordan University of Science and Technology, Irbid, Jordan  
GPA: 3.9, *Excellent with Honor Distinction.*

## Work Experience

- Oct. 2023 – Present  **Assistant Professor** at The Department of Electrical Engineering, Jordan University of Science and Technology, Irbid, Jordan.

## Research Publications

### Journal Articles

- 1** I. M. Allafi and S. N. Foster, "Analysis of direct torque control response to stator and rotor faults in permanent magnet synchronous machines," *Energies*, vol. 16, no. 19, 2023, ISSN: 1996-1073.  DOI: 10.3390/en16196940.
- 2** I. M. Allafi and S. N. Foster, "Condition monitoring accuracy in inverter-driven permanent magnet synchronous machines based on motor voltage signature analysis," *Energies*, vol. 16, no. 3, 2023, ISSN: 1996-1073.  DOI: 10.3390/en16031477.

- 3 I. M. Allafi and S. N. Foster, "Power signature based fault diagnosis of inverter-driven permanent magnet synchronous machines," *accepted for publication in IEEE Transactions on Industry Applications*, 2023.
- 4 A. Aggarwal, I. M. Allafi, E. G. Strangas, and J. S. Agapiou, "Off-line detection of static eccentricity of pmsm robust to machine operating temperature and rotor position misalignment using incremental inductance approach," *IEEE Transactions on Transportation Electrification*, vol. 7, no. 1, pp. 161–169, 2021. [DOI: 10.1109/TTE.2020.3006016](https://doi.org/10.1109/TTE.2020.3006016).

## Conference Proceedings

- 1 I. M. Allafi and S. N. Foster, "Condition monitoring of direct torque controlled permanent magnet synchronous machines," in *2022 IEEE Energy Conversion Congress and Exposition (ECCE)*, 2022, pp. 1–7. [DOI: 10.1109/ECCE50734.2022.9948136](https://doi.org/10.1109/ECCE50734.2022.9948136).
- 2 I. M. Allafi and S. N. Foster, "On the accuracy of frequency based fault diagnosis for dtc-driven pmsm," in *2022 International Conference on Electrical Machines (ICEM)*, 2022, pp. 1628–1634. [DOI: 10.1109/ICEM51905.2022.9910619](https://doi.org/10.1109/ICEM51905.2022.9910619).
- 3 I. M. Allafi and S. N. Foster, "Fault detection and identification for inverter-driven permanent magnet synchronous machines," in *2021 IEEE 13th International Symposium on Diagnostics for Electrical Machines, Power Electronics and Drives (SDEMPED)*, vol. 1, 2021, pp. 358–364. [DOI: 10.1109/SDEMPED51010.2021.9605501](https://doi.org/10.1109/SDEMPED51010.2021.9605501).

## Institutional Activities and Service

### Committee Service

- 1- Member, *University Council*, Sep. 2023 - Present
- 2- Secretary, *Department Council*, Sep. 2023 - Present
- 3- Member, *Safety and Laboratory Committee*, Sep. 2023 - Present
- 4- Member, *Sponsored Students Mentoring Committee*, Sep. 2023 - Present

### Master's Thesis Mentoring

- 1- Ali Muheidat (Spring 2024-Present)
- 2- Lana Bani Yaseen (Spring 2024-Present)

### Senior Project Mentoring

- 1- Smart Diagnosis of Eccentricity Fault in Electric Vehicle Motors | May 2024 | H. Qolaghasi, M. Tayyar, S. Al-Khateeb, A. Shehab-aldeen

### Graduate Courses Taught

EE740: Advanced Analysis of Electrical Machines

### Undergraduate Courses Taught

EE332: Electric Machines  
 EE304: Electric Drives  
 EE432: Electric Machine Laboratory  
 EE303: Fundamentals of Electrical Engineering

## Professional Membership and Service

### Professional Membership

Member of the IEEE  
 Member of the IEEE Power and Energy Society  
 Member of Jordanian Engineers Association

## Professional Membership and Service (continued)

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### ■ **Community Service**

Reviewer for IEEE Transactions on Energy Conversion

Reviewer for IEEE Transactions on Industrial Informatics

Reviewer for IEEE SDEMPED 2023

Technical committee member and Reviewer for GC-ElecEng 2024

## Honors and Awards

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### ■ **Academic Excellence Scholarship**

Nominated for a scholarship to pursue M.Sc.& PhD degrees in Electrical Engineering

Issued by: Department of Electrical Engineering, Jordan University of Science and Technology, 2018

### ■ **Honor with Distinction Letter**

Ranked 1st among 100 students in the 2012-2017 Batch of Electrical Engineering

Issued by: Jordan University of Science and Technology

### ■ **Dean's Honours List**

Listed on the Dean's Honours List for B.Sc. in Electrical Engineering

Issued by: College of Engineering, Jordan University of Science and Technology, 2012-2017

## References

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Available on Request