

Résumé
Ibrahim MAHARIQ

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Nationality: Turkish.

Languages: Arabic, English, Turkish.

Interests:

- Computational Electromagnetics, Electromagnetics, Photonics.
- Electrical machines, power electronics, power systems, renewable energy.

Education:

PhD-2: Department of Electrical and Electronics Engineering, Sep 2013- Aug 2017.
TOBB Economic and Technology University, Ankara, Turkey.
Thesis title: Optical Resonators: Photonic Nano-jet and Whispering Gallery Mode.

PhD-1: Department of Engineering Sciences, Sep 2011- July 2014.
Middle East Technical University, Ankara, Turkey.
Thesis title: Two Dimensional Modelling of Electromagnetic Scattering and Radiation Problems by Spectral Element Method.

M.Sc: Department of Electrical and Electronics Engineering, Feb 2006- April 2009.
Middle East Technical University, Ankara, Turkey.
Thesis title: A normalized set of force and permeance data for doubly-salient magnetic geometries.

B.Sc: Department of Electrical & Computer Engineering, 1998-2003.
Palestine Polytechnic University, Hebron, Palestine.
Major: Industrial Automation Engineering. (86.2% with distinction)
Senior Project: Seven-Level Diode-Clamped, PWM-Based 3-ph Inverter Using PC as A Controller. (Graded 1st).

Experience:

- Assistant Professor at the department of Electrical and Electronics Engineering/ University of Turkish Aeronautical Association, Ankara, Turkey. September 2014- present.
- Erasmus departmental coordinator at University of Turkish Aeronautical Association, Ankara, Turkey. September. 2014- 2018.
- Course Assistant: Finite Element Method, Numerical Solutions of PDEs / Middle East Technical University 2012-2014.
- Expert of Electrical and Electronics Department in Finite Element Analysis / Middle East Technical University. 2008-2013.
- Machines design and analysis (Brushless DC, SR, and Induction motors) / Middle East Technical University. 2008-2011.
- Teaching Assistant in Palestine Polytechnic University (PPU). 2003- 2005.

Memberships:

- Institute of Electrical and Electronics Engineers (IEEE) since 2014.
- TOBB ETU Nanophotonics Research Group. 2012-2018

Awards:

- Mahariq received fellowship of The Scientific and Technological Research Council of Turkey (TUBITAK) in 2009-2013 for his PhD studies.
- Mahariq received scholarship of Islamic Development Bank (ISDB) during his MSc program.
- Mahariq received PPU scholarship during his BSc program.
- Best presentation award: 3rd International Conference on Electrical and Electronics Engineering (ICEEE 2016), April 11-12, 2016 Istanbul, Turkey.
- Best paper award: The 4th international conference on energy and environmental protection, April 6-7, 2016 Hebron/ Palestine.
- Mahariq received several research awards from The Scientific and Technological Research Council of Turkey (TUBITAK).

Activities:

Mahariq has served as:

- A reviewer for Applied Computational Electromagnetics Society Journal.
- A reviewer for Journal of Optical Society of America.
- A reviewer for Journal of GAZI UNIVERSITY JOURNAL OF SCIENCE
- A reviewer for Journal of Optics Letters.
- One of the editors of the Turkish Journal of Electrical Engineering and Computer Sciences.
- An invited speaker: Energy Material Nanotechnology, 2015, Las Vegas, USA.
- A Jury member in Middle East Technical University.
- A Jury member in Karabuk University.
- A co-advisor of several MSc and PhD students in other Turkish universities.

Publications:

Journal Papers:

1. **I. Mahariq**, H. Kurt, H. I. Tarman, and M. Kuzuoğlu, "Photonic Nanojet Analysis by Spectral Element Method", IEEE Photonics Journal, 10/2014. (**SCIE**)
2. **I. Mahariq**, H. I. Tarman, and M. Kuzuoğlu, "On the Accuracy of Spectral Element Method in Electromagnetic Scattering Problems," International Journal of Computer Theory and Engineering vol. 6, no. 6, pp. 495-499, 2014. (Crossref, Copernicus, WorldCat, EBSCO)
3. **I. Mahariq**, M. Kuzuoğlu, and H. I. Tarman, "On the Attenuation of Perfectly Matched Layer in Electromagnetic Scattering Problems with Spectral Element Method", Applied Computational Electromagnetics Society Journal vol. 29(9), 09/2014. (**SCI**)
4. **I. Mahariq**, and H. Kurt, "On- and off-optical-resonance dynamics of dielectric microcylinders under plane wave illumination", Journal of the Optical Society of America B, Vol. 32.6, pp. 1022-1030, 2015. (**SCI**)

5. **I. Mahariq**, H. Kurt, and M. Kuzuoğlu, "Questioning Degree of Accuracy Offered by the Spectral Element Method in Computational Electromagnetics", *Applied Computational Electromagnetics Society Journal*, vol. 22.7, 2015. (SCI)
6. **I. Mahariq**, "On the application of spectral element method in electromagnetic problems involving domain decomposition", *Turkish Journal of Electrical Engineering and Computer Sciences*, 25.2, 2017. (SCIE)
7. **I. Mahariq**, V. Astratov, and H. Kurt, "Persistence of photonic nanojet formation under the deformation of circular boundary", *Journal of the Optical Society of America B*, 33.4: 535-542 (2016). (SCI)
8. **I. Mahariq**, and H. Kurt, "Strong field enhancement of resonance modes in dielectric micro-cylinders", *Journal of the Optical Society of America B*, 33.4: 656-662 (2016). (SCI)
9. A. Yilmaz, **I. Mahariq**, F. Yilmaz, "Numerical Solutions Of Optimal Control Problems For Microwave Heating", *International Journal of Advances in Science Engineering and Technology*, Volume- 4, Issue-3, Jul.-2016.
10. **I. Mahariq**, and I. Arpacı. "Challenges and Opportunities in Nuclear Energy: Promising Option in Turkey?" *International Journal of Electrical, Robotics, Electronics and Communications Engineering* Vol:7 No:2, 2013.
11. **I. Mahariq**, and A. Erciyas " A spectral element method for the solution of magnetostatic fields ", *Turkish Journal of Electrical Engineering and Computer Sciences*, *Turkish Journal of Electrical Engineering & Computer Sciences* 25.4, 2017. (SCIE)
12. **I. Mahariq**, Giden, I. H., Kurt, H., Minin, O. V., & Minin, I. V, "Strong electromagnetic field localization near the surface of hemicylindrical particles", *Optical and Quantum Electronics*, 49.12: 423, 2017. (SCIE)

International Conference Papers:

13. **I. Mahariq**, B. Ertan, "A Set of Force and Permeance Data for Switched Reluctance Machines by Finite Element Method", 3rd International conference on nuclear and renewable energy resources, Istanbul, May 2012.
14. **I. Mahariq**, "Time Relativity from the view of Quran and Special Relativity", 3rd International Conference on the Scientific View of Quran, Morocco, Tetouan Sep 2010.
15. **I. Mahariq**, H. I. Tarman, and M. Kuzuoğlu, "On the Accuracy of Spectral Element Method in Electromagnetic Scattering Problems," *Conference on Computational Intelligence and Communication Networks*, Antalya, April, 2014.
16. **I. Mahariq**, I. Arpacı, and M. Kuzuoğlu, " Analysis of Scattering from Perfect Electric Conducting Cylinders by Spectral Element Method," , July 4-6, 2015. Izmir, Turkey.
17. **I. Mahariq**, N. Eti, and H. Kurt "Engineering Photonic Nano-jet Generation ", *Computational Electromagnetics International Workshop*, July 4-6, 2015. Izmir, Turkey.
18. N. Eti, **I. Mahariq**, and H. Kurt "Mode Analysis and Light Confinement of Optical Rib Waveguides in Various Air Slot Configurations ", *17th International Conference on Transparent Optical Networks*, July 5-9, 2015, Budapest, Hungary

19. **I. Mahariq**, "Questioning a Successful Modelling of Nano-scale Applications," Invited speaker, Energy Material Nanotechnology, November 2015, Las Vegas, USA.
20. **I. Mahariq**, I. Hussien, and R. Jawad, "FACTS Technology: Current Challenges and Future Trends," ICEEP IV April 6-7, 2016, Hebron, Palestine.
21. H.Mishbak, K. Aeal, M. Ghalib, and **I. Mahariq**, "Eliminating Leakage Currents In Single-Phase Transformerless Z-Source Inverter For Photovoltaic Systems," ICEEP IV April 6-7, 2016, Hebron, Palestine.
22. O. Al Darraji, A. Elabbadi, A. Saidi, and **I. Mahariq**, "Application Of Z-Source Inverter On Wind Turbine Source," ICEEP IV April 6-7, 2016, Hebron, Palestine.
23. R. Jawad, I. Ismael, and **I. Mahariq**, "Design And Simulation Of Three Phase And Single Phase Z-Source Inverters," ICEEP IV April 6-7, 2016, Hebron, Palestine.
24. R. Jawad, I. Ismael, and **I. Mahariq**, "FACTS Technology: Current Challenges and Future Trends," ICEEP IV April 6-7, 2016, Hebron, Palestine.

Supervised MSc theses:

1. ERCIYAS ATAKAN, (2017). The application of spectral element method to magnetostatic problems, THK University, Department of electrical and electronics.
2. AWAD ALI DAWOOD, (2017). A design for generating maximum power in a solar cell, THK University, Department of electrical and electronics.
3. JAWAD RAAD SALIH JAWAD, (2017). Designing of a three-phase inverter with d-statcom capability for microgrid, THK University, Department of electrical and electronics.
4. MOHAMMED HUDA, (2017). Estimation of eddy current losses in metallic transmission towers, THK University, Department of electrical and electronics.
5. HUSSEIN ISRAA ISMAEL HUSSEIN, (2016). Simulation and comparison among conventional buck-boost, Z-source and Quasi z-source power inverters, THK University, Department of electrical and electronics.
6. ELWEDDAD MOHAMED ALI, (2016). Analysis and field simulation of two electrodes spark gap switch, THK University, Department of electrical and electronics.
7. WISAM QASIM, (2017), Heat transfer enhancement in laminar flow through circular tube using twisted tapes, THK University, Department of Mechanical Engineering.
8. MUDHEHER SABAH, (2017), Efficiency improvement of a manufacturing plant layout. THK University, Department of Mechanical Engineering.
9. MITHAT EGEMEN, (2018), Minimizing total harmonic distortion in single phase inverters. THK University, Department of electrical and electronics.
10. MOTHONA BDAIWI, (2018), Investigating the performance of the steam turbine. THK University, Department of Mechanical Engineering.
11. MURAT ÇATAKLI, (2018), A novel machine design for magnetic heat induction. THK University, Department of electrical and electronics.
12. ZELİHA KIRILMIŞ ÖZTÜRKTEN, (2018), ON THE UTILIZATION OF SOLAR ENERGY IN TRAINS. THK University, Department of electrical and electronics.

Supervised BSc Senior Projects (2015-2018):

- Magnetic levitation,
- Electromagnetic rifle,
- Micro-inverter,
- Smart house,
- Elevators,
- Wireless energy transfer,
- Uninterruptable power supply,
- High voltage transformer,
- Maximum power point tracking for PV,

Teaching (2014-2018):

Undergraduate courses:

- EEE 206 Electromagnetic Theory
- EEE 305 Mathematical Methods for Electrical Engineers
- MAT 305 Numerical Methods
- EEE 310 Electromechanical Energy Conversion
- EEE 425 Power electronic I
- EEE 426 Power electronic II
- EEE 452 Photonics
- EEE 495 Senior Design Project

MSc and PhD courses:

- Electrical Machine Design
- Special Topic in Electrical & Electronics Engineering
- Advanced Electromagnetic Theory
- Advanced Power System Analysis
- Economic Operations of Power Systems
- Advanced Power Electronics

Technical Reports:

1. Parameter optimization of a brushless DC motor. (Aselsen Project, METU, 2008).
2. Finite element analysis of an induction motor. (METU, 2010).
3. Impedance source inverter. (METU, 2010).
4. Vector control of AC machines. (METU, 2011)