

CURRICULUM VITEA

PERSONAL DETAILS

1. Name : Nedim Tutkun
2. Gender : Male
3. Date of Birth : January 1966
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EXPERTISE

Power Electronics, Renewable Energy Systems, Soft Computing

ACADEMIC QUALIFICATIONS

1. BSc (Electrical & Electronics Engineering), Istanbul Technical University (Sakarya Campus), TR, 1990.
2. PhD (Electrical Machines/Power Electronics), University of Cardiff, UK, 1999.

PROFESSIONAL MEMBERSHIP

1. The Institute of Electrical and Electronics Engineers (IEEE)
2. IEEE Power Electronics
3. IEEE Magnetics Society

INTERNATIONAL APPOINTMENTS

1. Editor, Turkish Journal of Electrical Engineering & Computer Science, (2015-Present)

2. Editorial Board Member of Turkish Journal of Electrical Engineering & Computer Science, (2015-Present)

3. Editorial Board Member of The 14th biennial IEEE International Conference on Electromagnetic Field Computation, (2011)

4. Steering Committee Member for The 5th IEEE International Conference on Electrical, Electronics and Information Engineering, (2017)

MAJOR ADMINISTRATIVE APPOINTMENTS

1. Vice Dean, Engineering Faculty, University of Düzce, (2010-2012)

2. Member, Engineering Faculty Administrative Board, University of Düzce (2014-Present)

3. Head, Department of Electrical & Electronics Eng. Faculty of Engineering (2010-Present)

4. Member, Advisory Board of Projects Call for Efficiency/Motor and Drives TUBITAK Electrical-Electronics Technology Group (2015-Present)

TEACHING

Postgraduate

Power Electronics Devices and Systems, Genetic Algorithms, Engineering Optimization Techniques

Undergraduate

Electrical Circuits I & II, Power Electronics, Numerical Analysis, Differential Equations.

POSTGRADUATE SUPERVISION

Graduated (as Main Supervisor)

1. T. Sarikaya, Application of genetic algorithms in optimal design of small power toroidal transformer cores, 2004.

2. M. Solak, Investigation of the effects of temperature, stress and other environmental factors on magnetic material properties, 2006.

3. M. Şimşir, Investigation of additional iron losses occurring in magnetic devices under electronically generated waveforms, 2007.
4. İ. Demirdöven, Reduction of harmonics in sinusoidal PWM signal by optimized triangular carrier wave, 2008.
5. Y. Türkkkan, Achievement of selective harmonic elimination in genetic algorithms in one-phase inverters, 2009.
6. F. Arslan, Determination of optimal capacity in asynchronous generators with capacitor stimulation by hybrid genetic algorithms, 2010.
7. E. Elibol, Estimation of basic electrical circuit parameters affecting maximum power transfer of a typical photovoltaic panel by hybrid genetic algorithms, 2014.
8. M. Aktaş, Development of maximum power point algorithm for low power photovoltaic power generation, 2016.
9. Ö. Can, Optimal power planning of a renewable microgrid system with a meta-intuitive method, 2016.
10. M. N. Bozok, Modeling of a wind-solar hybrid energy system for typical homes in Düzce, 2017.
11. N. Yücel, Rooftop photovoltaic system design for low cost operation and maintenance: Case Study of Denizli Teknobil High School, 2018.
12. F. Üngören, Development of a software for prosumers in houses and offices fed by 10 kWp wind-PV system, 2018.

RESEARCH

1. Project title: Investigation of extra power losses in PWM asynchronous motors, Source of Funding: University, Duration: 2002 to 2004, Role: Project Leader
2. Project title: Application of genetic algorithms in optimal design of toroidal transformer cores, Source of Funding: University, Duration: May 2002 to 2004, Role: Project Leader
3. Project title: Investigation of extra power losses under PWM voltage excitation using toroidal electromagnetic cores, Duration: 2003 to 2015, Role: Project Leader

4. Project title: Development of a 5 kW wind turbine for lighting and heating purposes of wind energy, Source of Funding: University, Duration: March 2012 to 2014, Role: Project Leader

5. Project Title: Optimal Power Planning of Photovoltaic-Wind Hybrid System for Community Based Applications, Source of Funding: Government, Duration: 2014 to 2016, Role: Project Leader

6. Project Title: Smart Trash Design, Source of Funding: University, Duration: 2015 to 2016, Role: Project Leader

H-INDEX (As of Oct 2018)

h---Index (Google Scholar) 11

PUBLICATIONS

Journal—ISI Indexed

1. A. J. Moses, N. Tutkun, “Investigation of power loss in wound toroidal cores under PWM excitation,” IEEE Transactions on Magnetics, 33, 3763-3765 (1997). (IF=1.50).

2. N. Tutkun, A. J. Moses, “Measurements of Power Loss Distributions in a Typical Stator Core under PWM Voltage Excitation',” Journal of Magnetism and Magnetic Materials, 262, 230-234 (2003). (IF=2.33).

3. N. Tutkun, A. J. Moses, “Design optimisation of a typical strip-wound toroidal core using genetic algorithms,” Journal of Magnetism and Magnetic Materials, 277/1-2, 216-220 (2004). (IF=2.33).

4. N. Tutkun, A. J. Moses, “Investigation of power loss in non-oriented electrical steels under pulse width modulated voltage excitation,” Journal of Magnetism and Magnetic Materials, 277/3, 359-362 (2004). (IF=2.33).

5. N. Tutkun, A. J. Moses, “Effects of geometrical factors on iron loss increase in wound toroidal cores energized by pulse width modulated voltage sources,” Journal of Magnetism and Magnetic Materials, 281/1, 110-114 (2004). (IF=2.33).

6. N. Tutkun, A. J. Moses, "A simplified method for estimation of iron loss in wound toroidal cores energized by pulse width modulated voltage sources," *Journal of Magnetism and Magnetic Materials*, 284, 195-200 (2004). (IF=2.33).
7. N. Tutkun, A. J. Moses, "Estimates of simplified equivalent circuit parameters of a typical wound toroidal core using genetic algorithms," *Journal of Magnetism and Magnetic Materials*, 284, 201-205 (2004). (IF=2.33).
8. A. J. Moses, N. Tutkun, "Localised losses in stator laminations of an induction motor under PWM excitation," *Journal of Materials Processing Technology*, 161, 79-82 (2005). (IF=3.147).
9. N. Tutkun, "Genetic estimation of iron losses in strip wound toroidal cores under PWM flux conditions," *Journal of Magnetism and Magnetic Materials*, 300/2, 506-518 (2006). (IF=2.33).
10. M. İ. Kömürcü, N. Tutkun, İ. H. Özölçer, A. Akpınar, "Estimation of the beach bar parameters using the genetic algorithms," *Applied Mathematics and Computation*, 195/1, 49-60 (2008). (IF=2.227).
11. N. Tutkun, "Parameter estimation in mathematical models using the real coded genetic algorithms," *Expert Systems with Applications*, 36/2, 3342-3345 (2009). (IF=4.68).
12. N. Tutkun, "Optimization of multimodal continuous functions using a new crossover for the real-coded genetic algorithms", *Expert Systems with Applications*, 36 8172-8177 (2009). (IF=4.68).
13. Z. Saraç, H.G. Birkök, F.N. Ecevit, N. Tutkun, "Determination of the dispersion curve of the refractive index by the Stockwell transform" *IET Optoelectronics*, 3/4, 180-186 (2009). (IF=0.76).
14. N. Tutkun, "Improved power quality in a single-phase PWM inverter voltage with bipolar notches through the hybrid genetic algorithms", *Expert Systems with Applications*, 37/8, 5614- 5620 (2010). (IF=4.68).

15. F. Taşpınar, N. Çelebi, N. Tutkun, “Forecasting of daily natural gas consumption on regional basis in Turkey using various computational methods”, *Energy and Buildings*, 56, 23-31 (2013). (IF=4.33).

16. L. D. S. Coelho, V. C. Mariani, N. Tutkun, P. Alotto, “Magnetizer design based on a quasi- oppositional gravitational search algorithm”, *IEEE Transactions on Magnetics*, 50, paper ID: 7017404 (2014). (IF=1.50).

17. N. Tutkun, “Minimization of operational cost for an off-grid renewable hybrid system to generate electricity in residential buildings through the SVM and the BCGA methods”, *Energy and Buildings*, 76, 470-475 (2014). (IF=4.33).

18. Erdem Elibol, Özge Tüzün Özmen, Nedim Tutkun, Oğuz Köysal, “Outdoor performance analysis of different PV panel types”, *Renewable and Sustainable Energy Reviews*, 67, 651- 661 (2017). (IF=8.67).

Journal—(Others)

1. M. Aktaş, N. Tutkun, F. Arslan, “Utilization of a low power wind turbine with the self-excited induction generator for heating in rural areas”, *Journal of Engineering Research and Applied Science*, 4, 283-290 (2015).

2. A. N. Afandi, A. P. Wibawa, Syaad Padmantara, Goro Fujita, W. Triyana, Yunis Sulistyorini, H. Miyauchi, Nedim Tutkun, M. El Shimy Mahmoud, X. Z. Gao, “Utilization of a low power wind turbine with the self-excited induction generator for heating in rural areas”, *International Review of Electrical Engineering*, 13/1, 59-68 (2018).

3. A. N. Afandi, A. P. Wibawa, Syaad Padmantara, Goro Fujita, W. Triyana, Yunis Sulistyorini, H. Miyauchi, Nedim Tutkun, M. El Shimy Mahmoud, X. Z. Gao, “Evaluation of the power transaction considering the transmission use of system charges and system constrains”, *Express Letters*, 9/10, 1041-1050 (2018).

CONFERENCE PROCEEDINGS

1. R. Demirci, N. Tutkun ve H. Koçkar, “A position controller of a typical PM DC linear motor,” *Proceedings of International Conference on Electrical Machines*, İstanbul, Turkey, 1998.

2. H. Koçkar, N. Tutkun ve R. Demirci, “Magnetic and structural analysis of iron films produced by a novel rotating cryostat technique,” Electrochemical Society, Boston, ABD, 1998.
3. N. Tutkun ve A. J. Moses, “ Measurements of localised flux density and power loss under PWM excitation in a typical stator core”, Digests of International Conference on Magnetism, INTERMAG 2000, Toronto, Canada, 2000.
4. N. Tutkun ve H. Koçkar, “Estimates of iron loss coefficients under PWM voltage excitation in various electrical steels,” Proceedings of International Conference on Electrical Machines, Espoo, Finland, 2000.
5. N. Tutkun, H. Koçkar ve R. Demirci, “Investigation of iron loss under PWM excitation in various sizes of strip wound toroidal cores,” Proceedings of International Conference on Electrical Machines, Espoo, Finland, 2000.
6. R. Demirci ve N. Tutkun, “Design and test of moving armature PM dc linear motor,” Proceedings of International Aegean Conference on Electrical Machines and Power Electronics- ACEMP01, Aydin, Türkiye, 2001.
7. N. Tutkun, R. Demirci ve O. Telli, “Localised flux and loss measurements under sine and PWM excitations in a typical stator core,” Proceedings of International Aegean Conference on Electrical Machines and Power Electronics-ACEMP01, Kuşadası-Turkey, 581-83, 2001.
8. N. Tutkun ve A. J. Moses, “Flux and loss distributions in a typical stator core under PWM voltage excitation”, Digests of International Conference on Magnetism, INTERMAG 2002, Amsterdam, Holland, 2002.
9. N. Tutkun, “A new modulation approach to decrease total harmonic distortion of the SPWM voltage waveform using genetic optimization technique,” International Conference on Renewable Energy and Power Quality-ICREPQ-08, Santander, Spain, 2008.
10. N. Tutkun, F. Arslan, “Improved core geometry of a low power modular wind generator using the real-coded genetic optimization technique,” 5th International Advanced Technologies Symposium (IATS’09), Karabük, Turkey, 2009.

11. N. Tutkun, F. Arslan, "Determination of capacitance range in the self-excited induction generator through the hybrid genetic algorithms," International Symposium on Power Electronics, Electrical Drives, Automation and Motion (SPEEDAM), Pisa, Italy, 2010.

12. N. Tutkun, Y. Turkkan, M. İbrahimbaş, N. Yucel,, "Harmonic elimination in a single phase inverter output voltage with 2 and 4 bipolar notches in a half cycle by the HGA," International Symposium on Power Electronics, Electrical Drives, Automation and Motion (SPEEDAM), Pisa, Italy, 2010.

13. L. Coelho, V. C. Mariani, N. Tutkun, P. Alotto, "Cauchy-Based Harmony Search Applied to Magnetizer Design," 15th International IGTE Symposium, Graz, Avusturia, 2012.

14. N. Tutkun, E. S. Şan, "Optimal power scheduling of an off-grid renewable hybrid system used for heating and lighting in a typical residential house," 13th International Conference on Environment and Electrical Engineering (EEEIC), Wroclaw, Poland, 352-355, 2013.

15. L. Coelho, V. C. Mariani, N. Tutkun, P. Alotto, " Magnetizer design using a Tinkerbell Seeker Optimization approach," 16th Biennial IEEE Conference on Electromagnetic Field Computation (CEFC), Annecy, France, 2014.

16. N. Tutkun, E. Elibol, D. Maden, Basic parameter extraction from an organic solar cell through the single diode model and a metaheuristic technique with the lambert w function, The 2nd International Renewable and Sustainable Energy Conference (IRSEC'14), Ourzazate, Morocco, 2014.

17. N. Tutkun, D. Maden, E. Elibol, Robust and simple yaw controller design for a low power wind türbine trthought the shuffled frog algrithm, The 2nd International Renewable and Sustainable Energy Conference (IRSEC'14), Ourzazate, Morocco, 2014.

18. N. Tutkun, Ö. Can, E. S. Şan, Daily Cost Minimization for an Off-Grid Renewable Microhybrid System Installed to a Residential Home, The 4th International

Conference on Renewable Energy Research and Applications Conference (ICRERA 2015), Palermo, Italy, 2015.

19. N. Tutkun, E. Elibol, M. Aktaş, Parameter Extraction From a Typical PV Module Using a Metaheuristic Technique, The 4th International Conference on Renewable Energy Research and Applications Conference (ICRERA 2015), Palermo, Italy, 2015.

20. N. Tutkun, Ö. Can, Daily Cost Minimization for an Off-Grid Renewable Microhybrid System Installed to a Residential Home, IEEE 16th International Conference on Environment and Electrical Engineering (EEEIC), Florence, Italy, 2016.

21. N. Tutkun, M. Aktaş, Improved approach to extract maximum power from a small-scale fixed PV system, IEEE 16th International Conference on Environment and Electrical Engineering (EEEIC), Florence, Italy, 2016.

22. N. Tutkun, N. Çelebi, An improved approach to minimise energy cost in a small wind- photovoltaic hybrid system, The 4th International Renewable and Sustainable Energy Conference (IRSEC'16), Marrakech, Morocco, 14-17 Nov 2016.

23. N. Tutkun, N. Çelebi, N. Bozok, Optimum unit sizing of wind-PV-battery system components in a typical residential home, The IEEE 4th International Renewable and Sustainable Energy Conference (IRSEC'16), Marrakech, Morocco, 2016.

24. N. Tutkun, F Ungören, B Alpagut, Improved load shifting and valley filling strategies in demand side management in a nano scale off-grid wind-PV system in remote areas, 14th International Conference on Networking, Sensing and Control (ICNSC'2017), Calabria, Italy, 16-18 May 2017.

25. A Burgio, D Menniti, A Pinnarelli, N Sorrentino, P Vizza, N. Tutkun, Prosumers with a photovoltaic-battery system: Comparison of two strategies for imbalance reduction, 14th International Conference on Networking, Sensing and Control (ICNSC'2017), Calabria, Italy, 16- 18 May 2017.

26. A. N. Afandi, Yunis Sulistyorini, Goro Fujita, Nguyen Phuc Khai, N. Tutkun, Renewable energy inclusion on economic power optimization using thunderstorm algorithm, 4th International Conference on Electrical Engineering, Computer Science and Informatics (EECSI), 2017, Yogyakarta, Indonesia, 19-21 Sept 2017.

CHAPTER IN BOOKS

N. Tutkun, D. Maden, "Chapter 4: Application of the Genetic Algorithms to Design the PID Controller for a DC Motor Speed Regulation," Smart Microgrids: New Advances, Challenges and Opportunities in the Actual Power Systems, E-book ISBN: 978-1-62808-981-3, Nova Publishers, 2013.

INVITED SPEECH

1. N. Tutkun, Building off-grid photovoltaic-wind systems with low cost operation in rural areas in developing countries, 14th International Conference on Frontiers of Information Technology (FIT'16), Islamabad, Pakistan, 19-21 Dec 2016.

2. N. Tutkun, Unit-sizing of a wind-PV hybrid system for a typical residential home, Dept. of Mechanical, Energy and Management, University of Calabria, Calabria, Italy, 17 May 2017.

3. N. Tutkun, Low cost operation of an off-grid wind-PV system electrifying residential homes through combinatorial optimization by the RCGA, The 5th International Conference on Electrical, Electronics and Information Engineering (ICEEIE 2017), Malang, Indonesia, 6-8 Oct 2017.

ACADEMIC VISITS/COLLABORATIONS

1. Malaysian Technology University (UTM) Electrical Engineering, Oct 2017

2. Negeri Malang University Electrical Engineering, Oct 2017

3. University of Calabria Dept. of Mechanical, Energy and Management Eng. May 2017

4. Lublin University of Tech. Electrical Engineering, Jun 2015

5. Zaragoza University Electrical Engineering, Jun 2013

6. Zaragoza University Electrical Engineering, Jan-Mar 2012
7. Halmstad University Mechanical Engineering, Sep 2010
8. Aalborg University Institute of Energy Technology, Apr 2010
9. Halmstad University Electrical Engineering, Sep 2009
10. Aalborg University Institute of Energy Technology, May 2009
11. Granada University Electromagn. & Material Physics, Mar 2008
12. Edinburgh University Electronics & Electrical Eng. May-Aug 2001