

ACADEMIC CV

1. Name Surname: Nedim TUTKUN

2. Year of Birth: 1966

3. Title: Professor

4. Educational Background: Doctorate

Degree	Field	University	Year
BSc	Electric-Electronic Eng.	ITU (Sakarya Campus)	1990
PhD	Electric-Electronic Eng.	Cardiff University (England)	1999

5. Academic Titles:

Assistant Professor: 10.10.1999

Associate Professor: 02.10. 2009

Professor: 14.08. 2014

6. Supervised Postgraduate Theses

1. T. Sarıkaya, 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 with optimized carrier triangle wave, 2008.
5. Y. Türkkkan, The realization of selective harmonic elimination in single phase inverters by genetic algorithms, 2009.
6. F. Arslan, Determination of optimal capacity in asynchronous generators with capacitor excitation by hybrid genetic algorithms, 2010.
7. E. Elibol, Prediction of basic electrical circuit parameters affecting the maximum power transfer of a typical photovoltaic panel by hybrid genetic algorithms, 2014.
8. M. Aktaş, Development of an Algorithm Following the Maximum Power Point for Low Power Photovoltaic Energy Production, 2016.
9. Ö. Can, Optimal Power Planning of a Renewable Microgrid System with a Meta-Heuristic Method, 2016.
10. MN Bozok, Modeling of wind-solar hybrid energy systems for typical housing in Düzce province, 2017.
11. N. Yücel, Rooftop application of photovoltaic system with minimum design and operating cost: Denizli TEKNOBİL High School example , 2018 .

12. F. Üngören, Developing software that provides minimum operating costs for residential and offices with producing consumers , 2018 .
13. E. Elibol, Solar cell production and characterization with CdTe nanomaterial , 2018 .
14. A. Alsallout, Minimization of operation cost and peak power demand for residential buildings, 2020 .

7. Publications

7.1. Articles published in international refereed journals (SCI, SCI-E)

1. AJ Moses, N. Tutkun, "Investigation of power loss in wound toroidal cores under PWM excitation," IEEE Transactions on Magnetics, 33, 3763-3765 (1997).
2. N. Tutkun, AJ 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).
3. N. Tutkun, AJ Moses, "Design optimization of a typical strip-wound toroidal core using genetic algorithms," Journal of Magnetism and Magnetic Materials, 277 / 1-2, 216-220 (2004).
4. N. Tutkun, AJ 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).
5. N. Tutkun, AJ 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).
6. N. Tutkun, AJ 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).
7. N. Tutkun, AJ 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).
8. AJ Moses, N. Tutkun, "Localized losses in stator laminations of an induction motor under PWM excitation," Journal of Materials Processing Technology, 161, 79-82 (2005).
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).
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).
11. N. Tutkun, "Parameter estimation in mathematical models using the real coded genetic algorithms," Expert Systems with Applications, 36/2, 3342-3345 (2009)
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).

13. Z. Saraç, HG Birkök, FN Ecevit, N. Tutkun, “Determination of the dispersion curve of the refractive index by the Stockwell transform” *IET Optoelectronics*, 3/4, 180-186 (2009).
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).
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).
16. LDS Coelho, VC Mariani, N. Tutkun, P. Alotto, “Magnetizer design based on a quasioppositional gravitational search algorithm”, *IEEE Transactions on Magnetics*, 50, paper ID: 7017404 (2014).
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).
18. Erdem Elibol, Özge Tuzun Özmen, Nedim Tutkun, Oğuz Köysal, “ Outdoor performance analysis of different PV panel types ”, *Renewable and Sustainable Energy Reviews* , 67 , 651-661 (2017).
19. E Elibol, PS Elibol, M Çadırcı, N Tutkun, “Improved photoluminescence and monodisperse performance of colloidal CdTe quantum dots with Cannula method”, *Korean Journal of Chemical Engineering*, 36/4, pp. 625-634 (2019).
20. E Elibol, N Tutkun, “Improving CdTe QDSSC's performance by Cannula synthesis method of CdTe QD”, *Materials Science in Semiconductor Processing*, 93, 304-316 (2019).
21. E Elibol, PS Elibol, M Cadırcı, N Tutkun, “Improving the performance of CdTe QDSSCs by chloride treatment and parameter optimization”, *Materials Science in Semiconductor Processing*, 96, 30-40 (2019) .

7.2. Articles published in other international refereed journals

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. AN Afandi, AP Wibawa, Syaad Padmantara, Goro Fujita, W. Triyana, Yunis Sulistyorini, H. Miyauchi, N. Tutkun, M. El Shimy Mahmoud, XZ Gao, “Evaluation of the power transaction considering the transmission use of system charges and system constraints ”, *ICIC Express Letters*, 9/10, 1041-1050 (2018).
3. AN Afandi, AP Wibawa, Syaad Padmantara, Goro Fujita, W. Triyana, Yunis Sulistyorini, H. Miyauchi, N. Tutkun, M. El Shimy Mahmoud, XZ Gao, “Designed operating approach of economic dispatch for java bali power grid areas considered wind energy and pollutant emission optimized using thunderstorm algorithm based on forward cloud charge mechanism ”, *International Review of Electrical Engineering*, 13/1, 59-68 (2018).

4. A. Alsallout, N. Tutkun, "Low Cost and Reliable Energy Management in Smart Residential Homes Using the GA Based Constrained Optimization", *Frontier Energy System and Power Engineering*, 2/2, 16-25 (2020).

7.3. Papers presented at international scientific meetings and published in the proceedings book (*Proceedings*)

1. R. Smith, N. and H. Koçkar passion, "the PM position controller of a typical DC linear motors," *Proceedings of the International Conference on Electrical Machines*, Istanbul, Turkey, 1998.

2. H. Koçkar, N. Tutkun, and R. Demirci, "Magnetic and structural analysis of iron films produced by a novel rotating cryostat technique," *Electrochemical Society*, Boston, USA, 1998.

3. N. Tutkun and AJ Moses, "Measurements of localized flux density and power loss under PWM excitation in a typical stator core", *Proceedings of International Conference on Magnetism, INTERMAG 2000*, Toronto, Canada, 2000.

4. N. Tutkun and 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 and 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, vol. 3/4, 1305-07, 2000.

6. R. Smith and N. passion, "Design and testing of a moving armature PM DC linear motors," *Proceedings of the International Conference on Electrical Machines and Power Aegean electronicsacemp01*, Aydin-Kusadasi, Turkey, 2001.

7. N. Tutkun, R. Demirci and O. Telli, "Localized 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 and AJ 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. Enthusiast, F. Armstrong, "Improved core geometry of a low power mode they wind generator using the real-coded genetic optimization technique," *5th International Advanced Technologies Symposium (IATS'09)*, Istanbul, 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. Tür kkan, M. İbrahimbaş, N. Y ücel , “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, VC Mariani, N. Tutkun, P. Alotto, “Cauchy-Based Harmony Search Applied to Magnetizer Design,” 15th International IGTE Symposium, Graz, Austria, 2012.
14. N. Tutkun, ES 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, VC 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. 5/7
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 turbine through the shuffled frog algorithm, The 2nd International Renewable and Sustainable Energy Conference (IRSEC'14), Ourzazate, Morocco, 2014.
18. N. Tutkun, Ö. Can, ES 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, Optimal load management in a low power off-grid wind-photovoltaic microhybrid system, IEEE 16th International Conference on Environment and Electrical Engineering (EEEIC), Florence, Italy, 7-10 June 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, 7-10 June 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 November 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. AN 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 Sept 21, 2017.

27. AN Afandi, I. Fadlika, S. Sendari, Hajime Miyauchi, Goro Fujita, N. Tutkun, Comparison of ABC and Genetic Algorithms on Economic Power Dispatch, 10th International Conference on Information Technology and Electrical Engineering (ICITEE), Kuta, Indonesia, 24 -26 July 2018.

28. N. Tutkun, K. Gegin, N. Sarma, Z. Salam, Comparison of Typical PV Module Performances Based on the Circuit Models, IEEE PES Asia-Pacific Power and Energy Engineering Conference (APPEEC), Kota Kinabalu, Malaysia, 07-10 Oct. 2018.

29. N. Sarma, K. Gegin, M. Simsir, N. Tutkun, Modeling of a Typical Photovoltaic Module using Matlab / Simulink, 2nd International Symposium on Multidisciplinary Studies and Innovative Technologies (ISMSIT), Ankara, Turkey, 19-21 Oct. 2018.

30. N. Tutkun, N. Bozok, M. Simsir, A. Alkhesha, Optimal Design of a Rooftop Wind-PV Hybrid System to Meet Energy Demand for a Typical Residential Home in 20-Year Lifetime Projection, 2nd International Symposium on Multidisciplinary Studies and Innovative Technologies (ISMSIT), Ankara, Turkey, 19-21 Oct. 2018.

7.4. International books or chapters in books

1. 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.

7.5. Articles published in national refereed journals

7.6. Papers presented at national scientific meetings and published in the proceedings book

1. N. Tutkun and M. Özer, "Measurement of flux density and power losses in asynchronous motor stator cores under DGM excitation," Electrical, Electronics and Computer Engineering Symposium-ELECO2002, Vol I, 105-109, Bursa, 2002.

2. M. Özer, ve N. Tutkun, "Cable theorem in passive dendrites", Electrical-Electronics-Computer Engineering Symposium ELECO2002, Volume II, 280-285, Bursa, 2002.

3. N. Tutkun, T. Sarıkaya, M. Çakır, "Increase of core geometry on iron loss under PWM stimulation", 10th National Congress of Electrical-Electronics-Computer Engineering, Vol I, 137-138, Istanbul, 2003.

4. N. Tutkun, "Investigation of the effects of modulation parameters on iron loss increase in 3% Si-Fe alloyed electrical steels excited by PWM inverter power supply", International Electrical and Electronics Engineering Conference-ELECO, Bursa, 2004.
5. N. Tutkun, S. Gürleyük, Ş. Cinal, "The effect of stator and rotor core geometry on magnetic performance in permanent magnet and low power wind generator," V. National Clean Energy Symposium, Vol I, 63-70, Istanbul, 2004.
6. N. Tutkun, M. Şimşir, "Reducing the amount of total harmonic distortion in the SDGM voltage wave form by genetic optimization technique," Energy Efficiency and Quality Symposium, 10-14, Kocaeli, 2007.
7. N. Tutkun, D. Maden, "Determination of PID Controller Parameters for DA Shunt Motor Using Genetic Algorithms," Electrical, Electronics and Computer Engineering Conference, 330-333, Bursa, 2010.
8. N. Tutkun, N. Celebi, F. Taşpınar, D. Maden, E. Elibol, S. Alkan, "Short term estimation of regional natural gas consumption by using GA supported DVM regression method," II. Anatolian Energy Symposium, Diyarbakır, 2013.
9. N. Tutkun, ES Şan, "Optimal power planning of off-grid renewable photovoltaic / wind system used for domestic heating and lighting in rural areas," VII. Renewable Energy Resources Symposium, Nicosia, 2013.
10. E. Elibol, N. Tutkun, "Estimation of unknown parameters with single diode circuit model of a typical photovoltaic panel using stochastic method and Lambert W function," IV. National Solar and Hydrogen Energy Congress, Eskişehir, 2014.
11. E. Elibol, M. Aktaş, N. Tutkun, "Finding the parameter values of the equivalent circuit model for different panel types" VI Energy Efficiency, Quality Symposium and Exhibition (EVK 15), 102-106, Sakarya, 2015.
12. Ö. Can, N. Tutkun, "Optimal load planning with micro-genetic algorithm for a household renewable hybrid system," VI Energy Efficiency, Quality Symposium and Exhibition (EVK 15), 130- 133, Sakarya, 2015.

7.7. Invited Speeches

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 December 2016.
2. 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 October 2017.
3. 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.

7.8. Citations (until 15 October 2020)

Number of Citations (Google Scholar): 600

h-index (Google Scholar): 13

8. National & International Projects

1. Investigation of Extra Power Loss in PWM Excited Asynchronous Motors, Research Fund Project, 2002-45-08-04, Project Coordinator, 2002-2004.
2. Application of Genetic Algorithms in Optimal Design of Toroidal Transformer Cores, 2002-45-08-09, Project Coordinator, 2002-2004.
3. Investigation of Extra Power Losses Under PWM Voltage Stimulation Using Toroidal Electromagnetic Cores, DPT Project, Project Coordinator, 2003-2005.
4. Development of a 5 kW wind turbine for the use of wind energy for lighting and heating purposes, 2012.06.03.103, Project Coordinator, 2012-2014.
5. Optimal Power Scheduling of Photovoltaic-Wind System Used for Community Based Applications, Tübitak Project, Project Coordinator, 2014-2016.

9. Administrative Tasks

Head of Department	Electrical & Electronic Eng.	Istanbul Aydın University	2018-Present
Faculty Administrative Board Membership	Faculty of Engineering	Düzce University	2014-2018
Vice Dean	Faculty of Engineering.	Düzce University	2010-2011
Head of Department	Electrical & Electronic Eng.	Düzce University	2010- 2018
Head of Department	Electrical & Electronic Eng.	B. E. University	2001-2004

10. Memberships of Scientific and Professional Organizations

1. IEEE Magnetics Society
2. IEEE Power Electronics Society

11. Awards

1. PhD Scholarship (1993-1998)
2. IEEE Electrical, Electronic and Information Engineering (ICEEI 2017) in the field of Power Systems Conference Best Paper Award (October 2017).

12. Taught Courses in the Last Two Years

Academic Year	Period	Course title	Weekly Hour		Number of Students
			Theoretical	Practice	
2018-2019	Fall	Electric Circuit Theory I (Undergraduate)	3	0	52
		Differential Equations (Undergraduate)	3	0	55
		Optimization Techniques (Graduate)	3	0	24
	Spring	Electric Circuit Theory II (Undergraduate)	3	0	57
		Optimization with Genetic Algorithms (Graduate)	3	0	18
2019-2020	Fall	Electric Circuit Theory I (Undergraduate)	4	0	55
		Photovoltaic System Design (Graduate)	3	0	15
	Spring	Electric Circuit Theory II (Undergraduate)	4	0	52
		Optimization with Genetic Algorithms (Graduate)	3	0	23
	Summer	Power Electronics (Undergraduate)	3	2	12

NOTE: If opened, the courses given in the summer term will be added to the table.