

## Prof. NEDİM TUTKUN

### Personal Information

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**Web:** <https://avesis.ticaret.edu.tr/ntutkun>

### Education Information

Doctorate, University of Wales College of Cardiff, England 1994 - 1999

Undergraduate, Istanbul Technical University, Turkey 1985 - 1990

### Foreign Languages

English, C1 Advanced

### Academic Titles / Tasks

Associate Professor, Duzce University, Mühendislik Fakültesi, Elektrik-Elektronik Mühendisliği Bölümü, 2009 - 2014

Assistant Professor, Zonguldak Bülent Ecevit University, Mühendislik Fakültesi, Elektrik-Elektronik Mühendisliği Bölümü, 1999 - 2009

Research Assistant, Zonguldak Bülent Ecevit University, Mühendislik Fakültesi, Elektrik-Elektronik Mühendisliği Bölümü, 1993 - 1998

Lecturer, Zonguldak Bülent Ecevit University, Alaplı Meslek Yüksekokulu, Elektrik Ve Enerji Bölümü, 1993 - 1993

### Academic and Administrative Experience

Istanbul Aydin University, 2018 - 2021

Duzce University, 2010 - 2018

Zonguldak Bülent Ecevit University, 2001 - 2004

### Courses

Electromagnetic Energy Conversion, Undergraduate, 2021 - 2022

Power Converter Design, Undergraduate, 2021 - 2022

Photovoltaic System Design, Postgraduate, 2020 - 2021, 2019 - 2020

Electrical Machines, Undergraduate, 2020 - 2021

Optimization by Genetic Algorithms, Postgraduate, 2019 - 2020, 2018 - 2019

Optimization Methods, Postgraduate, 2018 - 2019

Electric Circuits II, Undergraduate, 2018 - 2019

Electric Circuits I, Undergraduate, 2018 - 2019

Elektrik Devreleri 1, Undergraduate, 2016 - 2017

Yüksek Gerilim Tekniği , Undergraduate, 2016 - 2017

Elektrik-Elektronik Müh. Giriş, Undergraduate, 2016 - 2017

Elektrik Müh. Nümerik Yöntemler, Postgraduate, 2016 - 2017

## Advising Theses

NEDİM T., Design of low cost and reliable home energy management system using generalized reduced gradient nonlinear solver method, Postgraduate, M.SARMAD(Student), 2021

NEDİM T., Design of a 50 kW solar pv powered charging stationfor EVs, Postgraduate, A.RASHED(Student), 2021

NEDİM T., Design of A 1 KW wireless battery charger for a typical electric vehicle using an optimal solar PV system, Postgraduate, A.HUSEIN(Student), 2021

NEDİM T., Otomotiv haberleşmesinde denetleyeci alan ağı (CAN) için hibrit bir saldırı savuşturma uygulaması, Postgraduate, S.BAKİ(Student), 2021

NEDİM T., Optimal Design of a Rooftop Wind-PV Hybrid System to Meet Energy Demand for a Typical Residential Home, Postgraduate, A.AL(Student), 2020

NEDİM T., Minimization of operation cost and peak power demand for residential buildings, Postgraduate, A.A.J. (Student), 2020

NEDİM T., CdTe nanomalzeme ile güneş hücresi üretimi ve karakterizasyonu, Doctorate, E.ELİBOL(Student), 2018

NEDİM T., Üreten tüketicili konutlar ve ofisler için minimum işletme maliyeti sağlayan yazılım geliştirilmesi, Postgraduate, F.ÜNGÖREN(Student), 2018

NEDİM T., Minimum tasarım ve işletme maliyetli fotovoltaik sistemin çatı üstü uygulaması: Denizli TEKNOBİL Lisesi örneği, Postgraduate, N.YÜCEL(Student), 2018

NEDİM T., Düzce ilinde tipik bir konut için rüzgar-güneş hibrit enerji sistemlerinin modellenmesi, Postgraduate, M.NECATİ(Student), 2017

NEDİM T., Düşük güçlü fotovoltaik enerji üretimi için maksimum güç noktasını takip eden algoritmanın geliştirilmesi, Postgraduate, M.AKTAS(Student), 2016

NEDİM T., Yenilenebilir mikrogrid sistemin meta-sezgisel bir yöntem ile optimal güç planlaması, Postgraduate, Ö.CAN(Student), 2016

NEDİM T., Tipik bir fotovoltaik panelin maksimum güç aktarımını etkileyen temel elektrik devre parametrelerinin hibrit genetik algoritmalar ile tahmin edilmesi, Postgraduate, E.ELİBOL(Student), 2014

NEDİM T., Kapasitör uyarmalı asenkron generatörün optimal kapasitesinin hibrit genetik algoritma ile belirlenmesi, Postgraduate, F.ARSLAN(Student), 2010

NEDİM T., Bir fazlı eviricilerde selektif harmonik eliminasyonunun Genetik Algoritmalar yöntemi ile gerçekleştirilmesi, Postgraduate, Y.TÜRKKAN(Student), 2009

NEDİM T., Sinüzoidal PWM sinyalindeki harmoniklerin optimize edilmiş taşıyıcı üçgen dalga ile azaltılması, Postgraduate, İ.DEMİRDÖVEN(Student), 2008

NEDİM T., Elektronik olarak üretilen dalga şekilleri altında manyetik aygıtlarda meydana gelen ilave demir kayıplarının araştırılması, Postgraduate, M.ŞİMŞİR(Student), 2007

NEDİM T., Sıcaklık, stres ve diğer çevresel faktörlerin manyetik malzeme özellikleri üzerindeki etkisinin araştırılması, Postgraduate, M.SOLAK(Student), 2006

NEDİM T., Küçük güçlü toroidsel transformatör nüvelerinin optimal tasarımında genetik algoritmaların uygulanması, Postgraduate, T.SARIKAYA(Student), 2006

## Jury Memberships

Doctorate, Doctorate, İstanbul Ticaret Üniversitesi, March, 2024

Appointment to Academic Staff - Associate Professorship, Appointment to Academic Staff - Associate Professorship, İstanbul Ticaret Üniversitesi, March, 2024

Appointment to Academic Staff - Associate Professorship, Appointment to Academic Staff - Associate Professorship, İstanbul Ticaret Üniversitesi, March, 2024

Doctorate, Doctorate, İstanbul Ticaret Üniversitesi, December, 2023

Associate Professor Exam, Associate Professor Exam, İstanbul Ticaret Üniversitesi, December, 2023

Associate Professor Exam, Associate Professor Exam, İstanbul Commerce University, December, 2023

Doctorate, Doctorate, İstanbul Ticaret Üniversitesi, November, 2023

Doctorate, Doctorate, İstanbul Ticaret Üniversitesi, March, 2023

Appointment to Academic Staff - Associate Professorship, Appointment to Academic Staff - Associate Professorship, İstanbul Ticaret Üniversitesi, March, 2023

## **Published journal articles indexed by SCI, SSCI, and AHCI**

- I. **Decentralized Virtual Impedance Control for Power Sharing and Voltage Regulation in Islanded Mode with Minimized Circulating Current**  
Khan M. H., Zulkifli S. A., Tutkun N., Ekmekçi İ., Burgio A.  
Electronics (Switzerland), vol.13, no.11, 2024 (SCI-Expanded)
- II. **Adaptive Virtual Impedance Control with MPC's Cost Function for DG Inverters in a Microgrid with Mismatched Feeder Impedances for Future Energy Communities**  
Khan M. H., Zulkifli S. A., TUTKUN N., Burgio A.  
Sustainability (Switzerland), vol.16, no.2, 2024 (SCI-Expanded)
- III. **Improved Low-Cost Home Energy Management Considering User Preferences with Photovoltaic and Energy-Storage Systems**  
TUTKUN N., Scarcello L., Mastroianni C.  
Sustainability (Switzerland), vol.15, no.11, 2023 (SCI-Expanded)
- IV. **Breast Cancer Mass Classification Using Machine Learning, Binary-Coded Genetic Algorithms and an Ensemble of Deep Transfer Learning**  
Tiryaki V. M., Tutkun N.  
COMPUTER JOURNAL, 2023 (SCI-Expanded)
- V. **Intelligent scheduling of smart home appliances based on demand response considering the cost and peak-to-average ratio in residential homes**  
TUTKUN N., Burgio A., Jasinski M., Leonowicz Z., Jasinska E.  
Energies, vol.14, no.24, 2021 (SCI-Expanded)
- VI. **Improving the performance of CdTe QDSSCs by chloride treatment and parameter optimization**  
Elibol E., Elibol P. S., Cadırcı M., Tutkun N.  
Materials Science in Semiconductor Processing, vol.96, pp.30-40, 2019 (SCI-Expanded)
- VII. **Improving CdTe QDSSC's performance by Cannula synthesis method of CdTe QD**  
Elibol E., Tutkun N.  
Materials Science in Semiconductor Processing, vol.93, pp.304-316, 2019 (SCI-Expanded)
- VIII. **Improved photoluminescence and monodisperse performance of colloidal CdTe quantum dots with Cannula method**  
Elibol E., Elibol P. S., Çadırcı M., Tutkun N.  
Korean Journal of Chemical Engineering, vol.36, no.4, pp.625-634, 2019 (SCI-Expanded)
- IX. **Outdoor performance analysis of different PV panel types**  
Elibol E., Özmen Ö. T., Tutkun N., Köysal O.  
Renewable and Sustainable Energy Reviews, vol.67, pp.651-661, 2017 (SCI-Expanded)
- X. **Magnetizer design based on a quasi-oppositional gravitational search algorithm**  
Coelho L. D. S., Mariani V. C., Tutkun N., Alotto P.  
IEEE Transactions on Magnetics, vol.50, no.2, pp.705-708, 2014 (SCI-Expanded)
- XI. **Minimization of operational cost for an off-grid renewable hybrid system to generate electricity in residential buildings through the SVM and the BCGA methods**  
Tutkun N.  
Energy and Buildings, vol.76, pp.470-475, 2014 (SCI-Expanded)
- XII. **Forecasting of daily natural gas consumption on regional basis in Turkey using various**

### **computational methods**

Taşpınar F., Çelebi N., Tutkun N.

Energy and Buildings, vol.56, pp.23-31, 2013 (SCI-Expanded)

- XIII. **Improved power quality in a single-phase PWM inverter voltage with bipolar notches through the hybrid genetic algorithms**  
Tutkun N.  
Expert Systems with Applications, vol.37, no.8, pp.5614-5620, 2010 (SCI-Expanded)
- XIV. **Optimization of multimodal continuous functions using a new crossover for the real-coded genetic algorithms**  
Tutkun N.  
Expert Systems with Applications, vol.36, no.4, pp.8172-8177, 2009 (SCI-Expanded)
- XV. **Parameter estimation in mathematical models using the real coded genetic algorithms**  
Tutkun N.  
Expert Systems with Applications, vol.36, no.2 PART 2, pp.3342-3345, 2009 (SCI-Expanded)
- XVI. **Estimation of the beach bar parameters using the genetic algorithms**  
Kömürcü M. I., Tutkun N., Özölçer I. H., AKPINAR A.  
Applied Mathematics and Computation, vol.195, no.1, pp.49-60, 2008 (SCI-Expanded)
- XVII. **Genetic estimation of iron losses in strip wound toroidal cores under PWM flux conditions**  
Tutkun N.  
Journal of Magnetism and Magnetic Materials, vol.300, no.2, pp.506-518, 2006 (SCI-Expanded)
- XVIII. **Localised losses in stator laminations of an induction motor under PWM excitation**  
Moses A., Tutkun N.  
Journal of Materials Processing Technology, vol.161, no.1-2 SPEC. ISS., pp.79-82, 2005 (SCI-Expanded)
- XIX. **Estimates of simplified equivalent circuit parameters of a typical wound toroidal core using genetic algorithms**  
Tutkun N., Moses A. J.  
Journal of Magnetism and Magnetic Materials, vol.284, no.1-3, pp.201-205, 2004 (SCI-Expanded)
- XX. **A simplified method for estimation of iron loss in wound toroidal cores energised by pulse width modulated voltage sources**  
Tutkun N., Moses A. J.  
Journal of Magnetism and Magnetic Materials, vol.284, no.1-3, pp.195-200, 2004 (SCI-Expanded)
- XXI. **Effects of geometrical factors on iron loss increase in wound toroidal cores energised by pulse width modulated voltage sources**  
Tutkun N., Moses A.  
Journal of Magnetism and Magnetic Materials, vol.281, no.1, pp.110-114, 2004 (SCI-Expanded)
- XXII. **Investigation of power loss in non-oriented electrical steels under pulse width modulated voltage excitation**  
Tutkun N., Moses A.  
Journal of Magnetism and Magnetic Materials, vol.277, no.3, pp.359-362, 2004 (SCI-Expanded)
- XXIII. **Design optimisation of a typical strip-wound toroidal core using genetic algorithms**  
Tutkun N., Moses A.  
Journal of Magnetism and Magnetic Materials, vol.277, no.1-2, pp.216-220, 2004 (SCI-Expanded)
- XXIV. **Investigation of power loss in wound toroidal cores under pwm excitation**  
Moses A., Tutkun N.  
IEEE Transactions on Magnetics, vol.33, no.5 PART 2, pp.3763-3765, 1997 (SCI-Expanded)

### **Articles Published in Other Journals**

- I. **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**

Afandi A. N., Wibawa A. P., Fujita G., Padmantara S., Triyana W., Yunis S., El Shimy M. M., HM M., Gao X. Z., TUTKUN N. INTERNATIONAL REVIEW OF ELECTRICAL ENGINEERING (IREE), 2019 (Scopus)

### **II. Evaluation of the power transaction considering the transmission use of system charges and system constraints**

Afandi A. N., Wibawa A. P., Padmantara S., Fadlika I., Gumilar L., Wahyono I. D., Lestari D., Handayani A. N., Aripriharta A., Miyauchi H., et al.

ICIC Express Letters, Part B: Applications, vol.9, no.10, pp.1041-1050, 2018 (Scopus)

## **Refereed Congress / Symposium Publications in Proceedings**

- I. **The improved low cost grid connected EV charging station with PV and energy storage systems**  
TUTKUN N., Zulkifli S. A., Ahmad Z. B.  
2023 14th International Renewable Energy Congress, IREC 2023, Sousse, Tunisia, 16 - 18 December 2023
- II. **Comparison of Typical PV Module Performances Based on the Circuit Models**  
TUTKUN N., SARMA N., Gegin K., Salam Z.  
2018 IEEE PES Asia-Pacific Power and Energy Engineering Conference (APPEEC), 7 - 10 October 2018
- III. **Comparison of ABC and genetic algorithms on economic power dispatch**  
Afandi A., Fadlika I., Sendari S., Miyauchi H., Fujita G., Tutkun N.  
10th International Conference on Information Technology and Electrical Engineering, ICITEE 2018, Bali, Indonesia, 24 - 26 July 2018, pp.40-45
- IV. **Optimal Design of a Rooftop Wind-PV Hybrid System to Meet Energy Demand for a Typical Residential Home in 20-Year Lifetime Projection**  
TUTKUN N., BOZOK N., ŞİMŞİR M., ALKHESHA A.  
2018 2nd International Symposium on Multidisciplinary Studies and Innovative Technologies (ISMSIT), Ankara, Turkey, 19 - 21 October 2018, pp.1-5
- V. **Modeling of a Typical Photovoltaic Module using Matlab/Simulink**  
SARMA N., GEGİN K., ŞİMŞİR M., TUTKUN N.  
2018 2nd International Symposium on Multidisciplinary Studies and Innovative Technologies (ISMSIT), Ankara, Turkey, 19 - 21 October 2018
- VI. **Synthesising Highly Luminescent CdTe Quantum Dots Using Cannula Hot Injection Method**  
ELİBOL E., ÇADIRCI M., TUTKUN N.  
ICQD 2017 : 19th International Conference on Quantum Dots, Paris, France, 28 - 29 December 2017, vol.11, pp.2545
- VII. **Low cost operation of an off-grid wind-PV system electrifying residential homes through combinatorial optimization by the RCGA**  
TUTKUN N., Can Ö., Afandi A. N.  
The 5th International Conference on Electrical, Electronics and Information Engineering (ICEEIE 2017), 6 - 08 October 2017
- VIII. **Renewable Energy Inclusion on Economic Power Optimization using Thunderstorm Algorithm**  
Afandi A. N., Sulistyorini Y., Khai N. P., Fujita G., TUTKUN N.  
4th International Conference on Electrical Engineering, Computer Science and Informatics (EECSI 2017), 19 - 21 September 2017
- IX. **Improved load shifting and valley filling strategies in demand side management in a nano scale off-grid wind-PV system in remote areas**  
TUTKUN N., Üngören F., Alpagut B.  
IEEE 14th International Conference on Networking, Sensing and Control (ICNSC), 2017, 16 - 18 May 2017
- X. **Prosumers with a photovoltaic-battery system: Comparison of two strategies for imbalance reduction**  
Burgio A., Menniti D., Pinarelli A., Sorrentino N., Vizza P., TUTKUN N.  
IEEE 14th International Conference on Networking, Sensing and Control (ICNSC), 2017, 16 - 18 May 2017

- XI. **Building off grid photovoltaic wind systems with low cost operation in rural areas in developing countries**  
TUTKUN N.  
International Conference on Frontiers of Information Technology, 19 - 21 December 2016
- XII. **Optimum unit sizing of wind PV battery system components in a typical residential home**  
TUTKUN N., ÇELEBİ N., BOZOK M. N.  
The 4th International Renewable and Sustainable Energy Conference (IRSEC'16), 14 - 17 November 2016
- XIII. **An improved approach to minimise energy cost in a small wind photovoltaic hybrid system**  
TUTKUN N., ÇELEBİ N.  
The 4th International Renewable and Sustainable Energy Conference (IRSEC'16), 14 - 17 November 2016
- XIV. **Optimal load management in a low power off-grid wind-photovoltaic microhybrid system**  
TUTKUN N., CAN Ö.  
16th International Conference on Environment and Electrical Engineering (EEEIC), Floransa, Italy, 7 - 10 June 2016
- XV. **Improved approach to extract maximum power from a small scale fixed PV system**  
TUTKUN N., AKTAŞ M.  
IEEE 16th International Conference on Environment and Electrical Engineering (EEEIC), 7 - 10 June 2016
- XVI. **Parameter Extraction From a Typical PV Module Using a Metaheuristic Technique**  
TUTKUN N.  
International Conference on Renewable Energy Research and Applications Conference, 22 - 25 November 2015
- XVII. **Daily Cost Minimization for an Off Grid Renewable Microhybrid System Installed to a Residential Home**  
TUTKUN N.  
International Conference on Renewable Energy Research and Applications Conference, 22 - 25 November 2015
- XVIII. **Ev tipi yenilenebilir hibrit sistem için mikro genetik algoritma ile optimal yük planlaması**  
TUTKUN N.  
VI Enerji Verimliliği, Kalitesi Sempozyumu ve Sergisi, Turkey, 4 - 06 June 2015
- XIX. **Farklı panel tipleri için eşdeğer devre modelinin parametre değerlerinin bulunması**  
ELİBOL E., AKTAŞ M., TUTKUN N.  
VI Enerji Verimliliği, Kalitesi Sempozyumu ve Sergisi, Turkey, 4 - 06 June 2015
- XX. **Basic Parameter Extraction From An Organic Solar Cell Through The Single Diode Model And A Metaheuristic Technique With The Lambert W Function**  
TUTKUN N.  
The 2nd International Renewable and Sustainable Energy Conference (IRSEC'14), 17 - 19 October 2014
- XXI. **Robust and simple yaw controller design for a low power wind turbine through the shuffled frog leaping algorithm**  
Tutkun N., Maden D., Elibol E.  
2014 2nd International Renewable and Sustainable Energy Conference, IRSEC 2014, Ouarzazate, Morocco, 17 - 19 October 2014, pp.275-280
- XXII. **Optimal power scheduling of an off-grid renewable hybrid system used for heating and lighting in a typical residential house**  
Tutkun N., San E. S.  
2013 13th International Conference on Environment and Electrical Engineering, EEEIC 2013, Wroclaw, Poland, 1 - 03 November 2013, pp.352-355
- XXIII. **Determination of the PID controller parameters for a DC shunt motor using the genetic algorithm method**  
TUTKUN N.  
Electrical, Electronics and Computer Engineering (ELECO), 2010, Turkey, 2 - 04 December 2010

## **Activities in Scientific Journals**

İstanbul Ticaret Üniversitesi Fen Bilimleri Dergisi, Advisory Committee Member, 2022 - Continues

Frontier Energy System and Power Engineering , Scientific Committee Membership, 2019 - Continues

## **Scientific Refereeing**

Water, Journal Indexed in SCI-E, May 2024

Water, National Scientific Refreed Journal, May 2024

ENERGY CONVERSION AND MANAGEMENT, SCI Journal, April 2024

Water, Journal Indexed in SCI-E, April 2024

Processes, Journal Indexed in SCI-E, April 2024

Water, Journal Indexed in SCI-E, March 2024

Water, Journal Indexed in SCI-E, March 2024

Applied Sciences, Journal Indexed in SCI-E, November 2023

Processes, Journal Indexed in SCI-E, November 2023

Sustainability, Journal Indexed in SCI-E, October 2023

Sustainability, Journal Indexed in SCI-E, October 2023

ENERGY CONVERSION AND MANAGEMENT, SCI Journal, October 2023

Sustainability, Journal Indexed in SCI-E, September 2023

Sustainability, Journal Indexed in SCI-E, July 2023

Symmetry, Journal Indexed in SCI-E, July 2023

BDCC, Journal Indexed in ESCI, June 2023

Processes, Journal Indexed in SCI-E, June 2023

## **Congress and Symposium Activities**

IEEE-International Renewable Energy Congress , Attendee, Susah, Tunisia, 2023

The 6th International Conference on Electrical Engineering and Green Energy (CEEGE), Session Moderator, Aust-Agder, Norway, 2023