

## Assoc. Prof. Güven GONCA

### Personal Information

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### Education Information

Doctorate, Yıldız Teknik Üniversitesi, Graduate School of Natural and Applied Sciences, Gemi İnşaatı Ve Gemi Makineleri Müh., Turkey 2009 - 2013

Post Graduate, Yıldız Teknik Üniversitesi, Faculty of Mechanical Engineering, Gemi İnşaatı Ve Gemi Makineleri Müh., Turkey 2007 - 2009

Under Graduate, Yıldız Teknik Üniversitesi, Faculty of Mechanical Engineering, Gemi İnşaatı Ve Gemi Makineleri Müh., Turkey 2003 - 2007

### Foreign Languages

English, C1 Advanced

Italian, B1 Intermediate

### Dissertations

Doctorate, MİLLER ÇEVİRİMİNE GÖRE ÇALIŞAN AŞIRI DOLDURMALI BİR DİZEL MOTORUNA BUHAR ENJEKSİYONUNUN PERFORMANS VE EMİSYONLAR ÜZERİNDEKİ ETKİSİNİN İNCELENMESİ , Yıldız Teknik Üniversitesi, Gemi İnşaatı Ve Gemi Makineleri Müh., Gemi İnşaatı Ve Gemi Makineleri Müh., 2013

Post Graduate, Gemi Donatımında Detay Dizayn ve Modelleme, Yıldız Teknik Üniversitesi, Gemi İnşaatı Ve Gemi Makineleri Müh., Gemi İnşaatı Ve Gemi Makineleri Müh., 2009

### Research Areas

Mechanical Engineering, Energy, Conventional Energy Systems and Their Technology, Thermodynamics, Fuels and Combustion, Internal Combustion Engines, Thermal Systems, Naval Architecture and Marine Engineering, Ship Machines, Engineering and Technology

### Academic Titles / Tasks

Associate Professor, Yıldız Teknik Üniversitesi, Naval Architecture and Maritime Faculty, Gemi İnşaatı Ve Gemi Makineleri Müh. , 2016 - Continues

Assistant Professor, Yıldız Teknik Üniversitesi, Naval Architecture and Maritime Faculty, Gemi İnşaatı Ve Gemi Makineleri Müh. , 2014 - 2016

Research Assistant, Yıldız Teknik Üniversitesi, Naval Architecture and Maritime Faculty, Gemi İnşaatı Ve Gemi Makineleri Müh. , 2009 - 2014

## Professional Experience

### Advising Theses

Gonca G., Performance investigation of dual miller cycle – organic rankine cycle combined plant for marine applications, Post Graduate, M.SAMUEL(Student), 2019

GONCA G., Sıvılaştırılmış nitrojenin farklı yakıtlarla çalıştırılan kıvılcım ateşlemeli bir motorun performans ve emisyonlarına etkilerinin incelenmesi, Post Graduate, A.KAYA(Student), 2018

### Articles Published in Journals That Entered SCI, SSCI and AHCI Indexes

- I. **Multi-criteria performance analysis of dual miller cycle–Organic rankine cycle combined power plant**  
Zerom M. S. , Gonca G.  
ENERGY CONVERSION AND MANAGEMENT, vol.221, 2020 (Journal Indexed in SCI)
- II. **THE EFFECTS OF DIFFERENT ENGINE MATERIAL PROPERTIES ON THE PERFORMANCE OF A DIESEL ENGINE AT MAXIMUM COMBUSTION TEMPERATURES**  
PALACI Y., GONCA G.  
THERMAL SCIENCE, vol.24, no.1, pp.183-191, 2020 (Journal Indexed in SCI)
- III. **Performance assessment of a modified power generating cycle based on effective ecological power density and performance coefficient**  
GONCA G., ŞAHİN B., ÇAKIR M.  
INTERNATIONAL JOURNAL OF EXERGY, vol.33, no.2, pp.153-164, 2020 (Journal Indexed in SCI)
- IV. **Multi-criteria performance optimization and analysis of a gas-steam combined power system**  
Gonca G., Başhan V.  
JOURNAL OF THE BRAZILIAN SOCIETY OF MECHANICAL SCIENCES AND ENGINEERING, vol.41, no.9, 2019 (Journal Indexed in SCI)
- V. **Performance analysis of a novel eco-friendly internal combustion engine cycle**  
GONCA G., ŞAHİN B.  
INTERNATIONAL JOURNAL OF ENERGY RESEARCH, vol.43, no.11, pp.5897-5911, 2019 (Journal Indexed in SCI)
- VI. **Performance Analysis and Simulation of a Diesel-Miller Cycle (DiMC) Engine**  
GONCA G., HOCAOĞLU M. F.  
ARABIAN JOURNAL FOR SCIENCE AND ENGINEERING, vol.44, no.6, pp.5811-5824, 2019 (Journal Indexed in SCI)
- VII. **Thermoeology-based performance simulation of a Gas-Mercury-Steam power generation system (GMSPGS)**  
GONCA G., GENÇ İ.  
ENERGY CONVERSION AND MANAGEMENT, vol.189, pp.91-104, 2019 (Journal Indexed in SCI)
- VIII. **Performance evaluation of a mercury-steam combined-energy-generation system (MES)**  
GONCA G., ŞAHİN B.  
INTERNATIONAL JOURNAL OF ENERGY RESEARCH, vol.43, no.6, pp.2281-2295, 2019 (Journal Indexed in SCI)
- IX. **Performance investigation into a diesel engine under effective efficiency-power-power density conditions**  
GONCA G., PALACI Y.  
SCIENTIA IRANICA, vol.26, no.2, pp.843-855, 2019 (Journal Indexed in SCI)
- X. **Performance simulation of a double-reheat Rankine cycle mercury turbine system based on exergy**  
GONCA G., GENÇ İ.  
INTERNATIONAL JOURNAL OF EXERGY, vol.30, no.4, pp.392-403, 2019 (Journal Indexed in SCI)
- XI. **Performance Characteristics and Emission Formations of a Spark Ignition (SI) Engine Fueled with Different Gaseous Fuels**  
Gonca G., Çakır M., Şahin B.  
ARABIAN JOURNAL FOR SCIENCE AND ENGINEERING, vol.43, pp.4487-4499, 2018 (Journal Indexed in SCI)

- XII. **The effects of turbine design parameters on the thermo-ecologic performance of a regenerated gas turbine running with different fuel kinds**  
GONCA G.  
APPLIED THERMAL ENGINEERING, vol.137, pp.419-429, 2018 (Journal Indexed in SCI)
- XIII. **Thermo-ecological performance analysis of a double-reheat Rankine cycle steam turbine system (RCSTS) with open and close feed water heaters**  
GONCA G.  
INTERNATIONAL JOURNAL OF EXERGY, vol.25, no.2, pp.117-131, 2018 (Journal Indexed in SCI)
- XIV. **Influences of different fuel kinds and engine design parameters on the performance characteristics and NO formation of a spark ignition (SI) engine**  
GONCA G.  
APPLIED THERMAL ENGINEERING, vol.127, pp.194-202, 2017 (Journal Indexed in SCI)
- XV. **Thermo-Ecological Analysis of Irreversible Dual-Miller Cycle (DMC) Engine Based on the Ecological Coefficient of Performance (ECOP) Criterion**  
GONCA G.  
IRANIAN JOURNAL OF SCIENCE AND TECHNOLOGY-TRANSACTIONS OF MECHANICAL ENGINEERING, vol.41, no.4, pp.269-280, 2017 (Journal Indexed in SCI)
- XVI. **Exergetic and Thermo-ecological performance analysis of a Gas-Mercury combined turbine system (GMCTS)**  
GONCA G.  
Energy Conversion and Management, vol.151, pp.32-42, 2017 (Journal Indexed in SCI)
- XVII. **Performance Analysis of an Atkinson Cycle Engine under Effective Power and Effective Power Density Conditions**  
GONCA G.  
ACTA PHYSICA POLONICA A, vol.132, no.4, pp.1306-1313, 2017 (Journal Indexed in SCI)
- XVIII. **AN OPTIMIZATION STUDY ON AN ECO-FRIENDLY ENGINE CYCLE NAMED AS DUAL-MILLER CYCLE (DMC) FOR MARINE VEHICLES**  
GONCA G.  
POLISH MARITIME RESEARCH, vol.24, no.3, pp.86-98, 2017 (Journal Indexed in SCI)
- XIX. **Thermo-ecological performance analysis of a Joule-Brayton cycle (JBC) turbine with considerations of heat transfer losses and temperature dependent specific heats**  
GONCA G., ŞAHİN B.  
ENERGY CONVERSION AND MANAGEMENT, vol.138, pp.97-105, 2017 (Journal Indexed in SCI)
- XX. **Effects of engine design and operating parameters on the performance of a spark ignition (SI) engine with steam injection method (SIM)**  
GONCA G.  
APPLIED MATHEMATICAL MODELLING, vol.44, pp.655-675, 2017 (Journal Indexed in SCI)
- XXI. **Exergetic and ecological performance analyses of a gas turbine system with two intercoolers and two re-heaters**  
GONCA G.  
ENERGY, vol.124, pp.579-588, 2017 (Journal Indexed in SCI)
- XXII. **Investigation of the effects of the steam injection method (SIM) on the performance and emission formation of a turbocharged and Miller cycle diesel engine (MCDE)**  
GONCA G., ŞAHİN B., Parlak A., Ayhan V., Cesur I., Koksal S.  
ENERGY, vol.119, pp.926-937, 2017 (Journal Indexed in SCI)
- XXIII. **Effect of turbo charging and steam injection methods on the performance of a Miller cycle diesel engine (MCDE)**  
GONCA G., ŞAHİN B.  
Applied Thermal Engineering, vol.118, pp.138-146, 2017 (Journal Indexed in SCI)
- XXIV. **Comparative performance analyses of irreversible OMCE (Otto Miller cycle engine)-DiMCE (Diesel miller cycle engine)-DMCE (Dual Miller cycle engine)**

- GONCA G.  
ENERGY, vol.109, pp.152-159, 2016 (Journal Indexed in SCI)
- XXV. **Theoretical and experimental study on the performance of a diesel engine fueled with diesel-biodiesel blends**  
GONCA G., Dobrucali E.  
RENEWABLE ENERGY, vol.93, pp.658-666, 2016 (Journal Indexed in SCI)
- XXVI. **Thermo-ecological performance analyses and optimizations of irreversible gas cycle engines**  
GONCA G., ŞAHİN B.  
APPLIED THERMAL ENGINEERING, vol.105, pp.566-576, 2016 (Journal Indexed in SCI)
- XXVII. **Performance analysis and optimization of irreversible Dual-Atkinson cycle engine (DACE) with heat transfer effects under maximum power and maximum power density conditions**  
GONCA G.  
APPLIED MATHEMATICAL MODELLING, vol.40, pp.6725-6736, 2016 (Journal Indexed in SCI)
- XXVIII. **The effects of engine design and operating parameters on the performance of a diesel engine fueled with diesel-biodiesel blends**  
GONCA G., Dobrucali E.  
JOURNAL OF RENEWABLE AND SUSTAINABLE ENERGY, vol.8, no.2, 2016 (Journal Indexed in SCI)
- XXIX. **The influences of the engine design and operating parameters on the performance of a turbocharged and steam injected diesel engine running with the Miller cycle**  
GONCA G., ŞAHİN B.  
APPLIED MATHEMATICAL MODELLING, vol.40, pp.3764-3782, 2016 (Journal Indexed in SCI)
- XXX. **Thermodynamic analysis and performance maps for the irreversible Dual-Atkinson cycle engine (DACE) with considerations of temperature-dependent specific heats, heat transfer and friction losses**  
GONCA G.  
ENERGY CONVERSION AND MANAGEMENT, vol.111, pp.205-216, 2016 (Journal Indexed in SCI)
- XXXI. **Application of the Miller cycle and turbo charging into a diesel engine to improve performance and decrease NO emissions**  
GONCA G., ŞAHİN B., Parlak A., Ayhan V., Cesur I., Koksal S.  
ENERGY, vol.93, pp.795-800, 2015 (Journal Indexed in SCI)
- XXXII. **Investigation of Heat Transfer Influences on Performance of Air-Standard Irreversible Dual-Miller Cycle**  
GONCA G., ŞAHİN B., Ust Y.  
JOURNAL OF THERMOPHYSICS AND HEAT TRANSFER, vol.29, no.4, pp.678-683, 2015 (Journal Indexed in SCI)
- XXXIII. **Comprehensive performance analyses and optimization of the irreversible thermodynamic cycle engines (TCE) under maximum power (MP) and maximum power density (MPD) conditions**  
GONCA G., ŞAHİN B., ÜST Y., Parlak A.  
APPLIED THERMAL ENGINEERING, vol.85, pp.9-20, 2015 (Journal Indexed in SCI)
- XXXIV. **Investigation of the influences of steam injection on the equilibrium combustion products and thermodynamic properties of bio fuels (biodiesels and alcohols)**  
Gonca G.  
FUEL, vol.144, pp.244-258, 2015 (Journal Indexed in SCI)
- XXXV. **Comparison of steam injected diesel engine and Miller cycled diesel engine by using two zone combustion model**  
GONCA G., ŞAHİN B., ÜST Y., Parlak A., SAFA A.  
JOURNAL OF THE ENERGY INSTITUTE, vol.88, no.1, pp.43-52, 2015 (Journal Indexed in SCI)
- XXXVI. **Theoretical and experimental investigation of the Miller cycle diesel engine in terms of performance and emission parameters**  
GONCA G., ŞAHİN B., Parlak A., ÜST Y., Ayhan V., Cesur I., Boru B.  
APPLIED ENERGY, vol.138, pp.11-20, 2015 (Journal Indexed in SCI)
- XXXVII. **Energy and exergy analyses of single and double reheat irreversible Rankine cycle**

- Gonca G.  
INTERNATIONAL JOURNAL OF EXERGY, vol.18, no.4, pp.402-422, 2015 (Journal Indexed in SCI)
- XXXVIII. **Theoretical and experimental investigation of steam injected diesel engine with EGR**  
Kökkülünk G., Parlak A., Ayhan V., Cesur I., Gonca G., Boru B.  
ENERGY, vol.74, pp.331-339, 2014 (Journal Indexed in SCI)
- XXXIX. **The Effects of Design Parameters on Performance and NO Emissions of Steam-Injected Diesel Engine with Exhaust Gas Recirculation**  
KÖKKÜLÜNK G., GONCA G., Parlak A.  
ARABIAN JOURNAL FOR SCIENCE AND ENGINEERING, vol.39, no.5, pp.4119-4129, 2014 (Journal Indexed in SCI)
- XL. **Performance Optimization of an Air-Standard Irreversible Dual-Atkinson Cycle Engine Based on the Ecological Coefficient of Performance Criterion**  
GONCA G., ŞAHİN B.  
SCIENTIFIC WORLD JOURNAL, 2014 (Journal Indexed in SCI)
- XLI. **Investigation of the effects of steam injection on performance and NO emissions of a diesel engine running with ethanol-diesel blend**  
Gonca G.  
ENERGY CONVERSION AND MANAGEMENT, vol.77, pp.450-457, 2014 (Journal Indexed in SCI)
- XLII. **The effects of electronic controlled steam injection on spark ignition engine**  
Cesur I., Parlak A., Ayhan V., Boru B., GONCA G.  
APPLIED THERMAL ENGINEERING, vol.55, pp.61-68, 2013 (Journal Indexed in SCI)
- XLIII. **Performance maps for an air-standard irreversible Dual-Miller cycle (DMC) with late inlet valve closing (LIVC) version**  
GONCA G., ŞAHİN B., ÜST Y.  
ENERGY, vol.54, pp.285-290, 2013 (Journal Indexed in SCI)
- XLIV. **Theoretical and experimental investigation of diesel engine with steam injection system on performance and emission parameters**  
Kökkülünk G., Gonca G., Ayhan V., Cesur I., Parlak A.  
APPLIED THERMAL ENGINEERING, vol.54, pp.161-170, 2013 (Journal Indexed in SCI)
- XLV. **Determination of the optimum temperatures and mass ratios of steam injected into turbocharged internal combustion engines**  
GONCA G., ŞAHİN B., ÜST Y., Parlak A.  
JOURNAL OF RENEWABLE AND SUSTAINABLE ENERGY, vol.5, no.2, 2013 (Journal Indexed in SCI)
- XLVI. **A Study on Late Intake Valve Closing Miller Cycled Diesel Engine**  
Gonca G., Şahin B., Üst Y., Parlak A.  
ARABIAN JOURNAL FOR SCIENCE AND ENGINEERING, vol.38, pp.383-393, 2013 (Journal Indexed in SCI)
- XLVII. **Heat transfer effects on the performance of an air-standard irreversible dual cycle**  
ÜST Y., ŞAHİN B., KAYADELEN H. K. , GONCA G.  
INTERNATIONAL JOURNAL OF VEHICLE DESIGN, vol.63, no.1, pp.102-116, 2013 (Journal Indexed in SCI)
- XLVIII. **Determination of optimum reheat pressures for single and double reheat irreversible Rankine cycle**  
ÜST Y., GONCA G., Kayadelen H. K.  
JOURNAL OF THE ENERGY INSTITUTE, vol.84, no.4, pp.215-219, 2011 (Journal Indexed in SCI)

## Articles Published in Other Journals

- I. **Application of a Novel Thermo-Ecological Performance Criterion: Effective Ecological Power Density (EFECPOD) To a Joule-Brayton Cycle (JBC) Turbine**  
GONCA G.  
Journal of Thermal Engineering, vol.3, pp.1478-1488, 2017 (Other Refereed National Journals)
- II. **Performance Analysis of A Spark Ignition (SI) Otto Cycle (OC) Gasoline Engine Under Realistic Power (RP) And Realistic Power Density (RPD) Conditions**

GONCA G.

Journal of Polytechnic, vol.20, no.2, pp.475-486, 2017 (Journal Indexed in ESCI)

## Refereed Congress / Symposium Publications in Proceedings

- I. **Performance Investigation of Dual Miller - Organic Rankine Cycle Combined Plant formarine applications**  
ZEROM S. M. , GONCA G.  
1st International Symposium on Graduate Research in Science Focuson Entrepreneurship and Innovation (ISGRS 2018), 4 - 06 October 2018
- II. **Performance Characteristics of a Diesel Engine Manufactured of Different Engine Materials**  
GONCA G., PALACI Y.  
INTNAM 2018, 24 - 25 April 2018
- III. **INFLUENCES OF NITROGEN ADDITION ON PERFORMANCE CHARACTERISTICS AND NO FORMATION OF AN SI ENGINE OPERATING WITH DIFFERENT FUELS**  
KAYA A., GONCA G.  
3rd CONFERENCE ON ADVANCES IN MECHANICAL ENGINEERING ISTANBUL 2017- ICAME2017, 19 December 2017, pp.656-663
- IV. **EFFECTS OF LIQUID NITROGEN ADDITION TO INTAKE AIR ON THE PERFORMANCE AND NO FORMATION OF A GASOLINE ENGINE**  
KAYA A., GONCA G.  
International Conference on Engineering Technologies ICENTE 2017, 7 - 09 December 2017, pp.744-747
- V. **The Effects of Equivalence Ratio and Various Fuels on the Performance and NO of a Spark Ignition SI Engine**  
GONCA G.  
23rd World Energy Congress 2016, 9 - 13 October 2016
- VI. **COMPARATIVE EXERGETIC PERFORMANCE EVALUATION OF GASEOUS AND LIQUID FUELS**  
GONCA G., SAFA A., KAYADELEN H. K. , KALE F. M.  
INTERNATIONAL CONFERENCE ON ADVANCES IN SCIENCE ICAS 2016, 31 August - 02 September 2016
- VII. **Performance Characteristics of a Spark Ignition SI Engine Fueled with Liquid Fuels and Alcohols**  
GONCA G., SAFA A., KALE F. M. , BAL E.  
ICENS International Conference on Engineering and Natural Science, 24 - 28 May 2016
- VIII. **APPLICATION OF A NOVEL THERMO ECOLOGICAL PERFORMANCE CRITERION EFFECTIVE ECOLOGICAL POWER DENSITY EFECPOD TO A JOULE BRAYTON CYCLE JBC TURBINE**  
GONCA G.  
CONFERENCE ON ADVANCES IN MECHANICAL ENGINEERING ISTANBUL 2016, 10 - 13 May 2016
- IX. **İKİ BÖLGELİ YANMA MODELİYLE BUHAR ENJEKSİYONLU DİZEL VE MILLER ÇEVİRİMLİ DİZEL MOTORLARININ KAPSAMLI OLARAK KARŞILAŞTIRILMASI**  
KAYADELEN H. K. , GONCA G., ŞAHİN B., ÜST Y., SAFA A., PARLAK A.  
12th International Combustion Symposium, 24 - 26 May 2012

## Supported Projects

GONCA G., ŞAHİN B., Project Supported by Higher Education Institutions, Dizel Motorlar İçin Termoekolojiye Dayalı Çok Parametrelili Yeni Bir Performans Analiz Kriteri Geliştirilmesi, 2020 - 2020

PALACI Y., BAYAR H., GONCA G., DEMİR Ö., AKALIN Ö., Project Supported by Higher Education Institutions, Bor katkısı ile düşük ısı iletkenlik sağlayan izolasyon malzemesi geliştirilmesi, 2020 - 2020

GONCA G., ŞAHİN B., ARSLAN F., SAFA A., Project Supported by Higher Education Institutions, İçten Yanmalı Motorlar İçin Teorik ve Deneysel Çalışmalara Dayalı Yeni Bir Termo-Ekolojik Performans Analiz Kriterinin Geliştirilmesi, 2017 - 2019

Çakır M., Gonca G., Üst Y., Şahin B., TUBITAK Project, Combustion optimisation and divided combustion chamber design for stratified charge formation on an injection natural gas engine, 2015 - 2018

Şahin B., Üst Y., Gonca G., Elçiçek H., Kökkülünk G., TUBITAK Project, Miller Çevrimiyle Çalışan Bir Dizel motoruna Su Buharı Enjeksiyonu EGR uygulamasının NOx Emisyonlarına ve Performansa Etkilerinin Teorik ve Deneysel Olarak İncelenmesi, 2011 - 2014

## **Patent**

Gonca G., ENERJETİK GÖVDE BİSİKLETİ VE ÇALIŞMA YÖNTEMİ, Patent, CHAPTER A Human Needs, Initial Registration, 2020

Gonca G., Dizel motorlarda ekolojik güç yoğunluğunun ölçümü ve artırılması için geliştirilmiş bir yöntem, Patent, CHAPTER F Mechanical engineering; Lighting; Heating; Weaponry; Destroyed Materials, Initial Registration, 2020

Gonca G., DİZEL MOTORLARINDA YANMA SICAKLIĞI VE NOx KONTROLÜ İÇİN BİR YÖNTEM, Patent, CHAPTER A Human Needs, Initial Registration, 2016

## **Scientific Refereeing**

ENERGY CONVERSION and MANAGEMENT, SCI Journal, February 2017

ENERGY, SCI Journal, January 2017

## **Citations**

Total Citations (WOS):1121

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