

## Prof. HAKAN ÇALIŞKAN

### Personal Information

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### International Researcher IDs

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Publons / Web Of Science ResearcherID: AAJ-9437-2021

ScopusID: 57200234321

Yoksis Researcher ID: 33861

### Biography

Professor Dr. Hakan CALISKAN is the **youngest Professor of Mechanical Engineering** in Turkey. He received *all of his BSc, MSc, and PhD* degrees with “**first class honor**” in the Department of Mechanical Engineering (Thermodynamics) at Pamukkale, Eskisehir Osmangazi, and Ege Universities in Turkey, respectively. He is also in the **top 2% scientists** of the world list (<https://elsevier.digitalcommonsdata.com/datasets/btchxktzyw/3>).

He worked as a Professor in Department of Mechanical Engineering of Kyung Hee University in **Republic of Korea** (among the top 500 universities in the world), as a Professor in the Teikyo University in **Japan**, and as a Researcher in University of Ontario Institute of Technology (Ontario Tech University) in **Canada**. He has more than 100 publications (based on thermodynamics/ energy/ exergy/ environment/ thermoeconomy/ sustainability/ etc) in SCI indexed journals. He is an Assistant Editor/Guest Editor/Editorial Board member of 16 international journals. He is an editorial board member in eleven different international journals, and an active reviewer in more than 50 high qualities (SCI/SCIE/SSCI indexed) international journals. He is also an Associate Editor of SCI-exp. indexed Frontiers in Energy Research journal. He served as a chairman, organization committee member, scientific committee member, technical committee member in many international conferences/symposiums. He also worked as a panelist, commissioner and referee in TUBITAK (The Scientific and Technological Research Council of Turkey), Republic of Turkey Ministry of Industry and Technology, KOSGEB (Small and Medium Enterprises Development Organization), Latvian Science Council, National Science Centre (NCN) of Poland, National Centre of Science and Technology (NCS) of Kazakhstan, Italian Ministry of Education (MIUR), Innovation Fund Denmark (IFD), EUREKA, EUROSARS, INNOWWIDE, HORIZON (EU), COST projects. He established Usak University Energy, Environment and Sustainability (ENÇES) Application and Research Center and also contributed to postgraduate education activities by establishing the Department of Energy and Environmental Sciences, and provided a bilateral agreement with Teikyo University, and provided the opportunity to exchange academics and students with scholarships.

Prof. Dr. Hakan Caliskan is an academic of Usak University since 2007. He also worked as Research Assistant at Ege University, Research Assistant at University of Ontario Institute of Technology, researcher professor at Teikyo University, and professor at Kyung Hee University. He is currently working in the Mechanical Engineering Department of Usak University. His research areas are thermodynamics, heat transfer, fluid mechanics, energy, exergy, sustainability, efficiency, thermoeconomics and environmental analyses, energy and environmental policies, energy systems, internal combustion engines, aircrafts, turbojet-turbofan-turboprop engines, emission improvement systems, exhaust emissions and nanoparticles, energy efficient buildings, power and energy systems, fuels, thermal energy storage systems, heat exchangers, heat pumps, renewable energy (wind, solar, etc.), hydrogen, heating and cooling systems, etc. (h index: 31, i10 index: 62) <https://www.adscientificindex.com/scientist.php?id=209702>.

For full information, see <https://www.hakanaliskan.net/en/>

- "6000 academics who has the most citations and highest h-index in Turkey". 2021.

[https://www.researchgate.net/publication/349075094\\_Turkiye%27de\\_en\\_cok\\_atif\\_alan\\_ve\\_H\\_index%27i\\_en\\_yukse\\_6000\\_akademisyen](https://www.researchgate.net/publication/349075094_Turkiye%27de_en_cok_atif_alan_ve_H_index%27i_en_yukse_6000_akademisyen)

- The World's Top 2% Scientists. Elsevier. 2021. <https://data.mendeley.com/datasets/btchxktzyw/2>

- In "Energy-Exergy-Thermodynamic-Heat Transfer-Environmental" research areas, the scientist ranking of Prof.Dr. Hakan CALISKAN is as follows: rank #332th in Europe, rank #1211th in the world. <https://www.adscientificindex.com/scientist.php?id=209702>

- The World's Top 2% Scientists. Elsevier. 2022. <https://elsevier.digitalcommonsdata.com/datasets/btchxktzyw/4>

## Education Information

Post Doctorate, Kyung Hee University, College of Engineering, Department of Mechanical Engineering, South Korea 2017 - 2018

Post Doctorate, Teikyo University, Faculty of Science & Engineering, Department of Mechanical & Precision System Engineering, Japan 2016 - 2016

Doctorate, Ege University, Graduate School, Mechanical Engineering (PhD) (Thesis), Turkey 2009 - 2012

Post Doctorate, University of Ontario Institute of Technology (Ontario Tech University), Faculty of Engineering and Applied Science, Department of Mechanical and Manufacturing Engineering, Canada 2010 - 2011

Postgraduate, Eskisehir Osmangazi University, Fen Bilimleri Enstitüsü, Mechanical Engineering (MSc) (Thesis), Turkey 2007 - 2009

Undergraduate, Pamukkale University, Faculty of Engineering, Mechanical Engineering Department, Turkey 2003 - 2007

## Dissertations

Doctorate, Özgün ısı enerjisi depolama sistemlerinin analizi ve performans değerlendirilmesi, Ege University, Fen Bilimleri Enstitüsü, Termodinamik (Dr), 2012

Postgraduate, İtçan yanmalı motorlarda ekserji analizi, Eskisehir Osmangazi University, Fen Bilimleri Enstitüsü, Makine Mühendisliği (YI) (Tezli), 2009

## Research Areas

Mechanical Engineering, Petroleum And Natural Gas Engineering, Aeronautical and Space Engineering

## Academic Titles / Tasks

Professor, Usak University, MÜHENDİSLİK VE DOĞA BİLİMLERİ FAKÜLTESİ, Makine Mühendisliği Bölümü, 2021 - Continues

Associate Professor, Usak University, MÜHENDİSLİK VE DOĞA BİLİMLERİ FAKÜLTESİ, Makine Mühendisliği Bölümü, 2015 - 2021

Assistant Professor, Usak University, MÜHENDİSLİK VE DOĞA BİLİMLERİ FAKÜLTESİ, Makine Mühendisliği Bölümü, 2013 - 2015

Research Assistant PhD, Usak University, MÜHENDİSLİK VE DOĞA BİLİMLERİ FAKÜLTESİ, Makine Mühendisliği Bölümü, 2012 - 2013

Research Assistant, Ege University, Mühendislik Fakültesi, Makine Mühendisliği Bölümü, 2010 - 2012

Research Assistant, Usak University, MÜHENDİSLİK VE DOĞA BİLİMLERİ FAKÜLTESİ, Makine Mühendisliği Bölümü, 2007 - 2010

## Academic and Administrative Experience

Head of Department, Usak University, LİSANSÜSTÜ EĞİTİM ENSTİTÜSÜ, Enerji ve Çevre Bilimleri, 2019 - 2020  
Head of Department, Usak University, MÜHENDİSLİK VE DOĞA BİLİMLERİ FAKÜLTESİ, Makine Mühendisliği Bölümü, 2018 - 2020  
Head of Department, Usak University, LİSANSÜSTÜ EĞİTİM ENSTİTÜSÜ, Makine Mühendisliği Anabilim Dalı, 2018 - 2020  
Head of Department, Usak University, MÜHENDİSLİK VE DOĞA BİLİMLERİ FAKÜLTESİ, Makine Mühendisliği Bölümü, 2015 - 2020  
Director of the Center, Usak University, REKTÖRLÜK, Uşak Üniversitesi Enerji, Çevre ve Sürdürülebilirlik Uygulama ve Araştırma Merkezi , 2014 - 2018

## Courses

YAKITLAR VE YANMA, Undergraduate, 2016 - 2017  
ISI DEĞİŞTİRİCİLER, Undergraduate, 2016 - 2017, 2015 - 2016, 2014 - 2015  
TEZ ÇALIŞMASI, Postgraduate, 2016 - 2017, 2015 - 2016, 2014 - 2015, 2013 - 2014  
İLERİ TERMODİNAMİK, Doctorate, 2016 - 2017, 2015 - 2016  
MAKİNE PROJE, Undergraduate, 2016 - 2017, 2015 - 2016, 2014 - 2015, 2013 - 2014  
UZMANLIK ALAN DERSİ, Postgraduate, 2016 - 2017, 2015 - 2016, 2014 - 2015, 2013 - 2014  
YAKIT PİLİ SİSTEMLERİ, Postgraduate, 2016 - 2017, 2014 - 2015  
TERMOEKONOMİ, Doctorate, 2016 - 2017, 2013 - 2014  
MAKİNE MÜHENDİSLİĞİNE GİRİŞ, Undergraduate, 2016 - 2017  
ENERJİ SİSTEMLERİNİN YAŞAM ÇEVİRİMİ DEĞERLENDİRMESİ, Doctorate, 2016 - 2017  
DERS DANIŞMANLIĞI, Postgraduate, 2016 - 2017  
İÇTEN YANMALI MOTORLARIN İLERİ TERMODİNAMİĞİ, Postgraduate, 2015 - 2016, 2014 - 2015, 2013 - 2014  
ISI TRANSFERİ, Undergraduate, 2015 - 2016, 2014 - 2015, 2013 - 2014  
TEZ HAZIRLIK ÇALIŞMASI, Postgraduate, 2015 - 2016, 2014 - 2015  
DOĞALGAZ TESİSAT SİSTEMLERİ, Undergraduate, 2014 - 2015, 2013 - 2014, 2012 - 2013  
BİTİRME PROJESİ, Undergraduate, 2014 - 2015, 2013 - 2014, 2012 - 2013  
TERMODİNAMİK I, Undergraduate, 2014 - 2015, 2013 - 2014, 2012 - 2013  
BUHAR KAZANLARI, Undergraduate, 2014 - 2015, 2013 - 2014, 2012 - 2013  
TERMODİNAMİK, Undergraduate, 2014 - 2015, 2013 - 2014  
ENERJİ SİSTEMLERİNİN ÇEVRESEL ANALİZİ, Doctorate, 2014 - 2015  
İŞÇİ SAĞLIĞI VE İŞ GÜVENLİĞİ, Undergraduate, 2014 - 2015  
ISI POMPALARI VE UYGULAMALARI, Postgraduate, 2013 - 2014, 2012 - 2013  
HAVALANDIRMA VE İKLİMLENDİRME SİSTEMLERİNDE VERİMLİLİK VE MODELLEME, Doctorate, 2013 - 2014  
TERMODİNAMİK II, Undergraduate, 2013 - 2014  
SÜRDÜRÜLEBİLİR ENERJİ TEKNOLOJİLERİ, Doctorate, 2013 - 2014  
DÜŞÜK EKSERJİLİ ISITMA VE SOĞUTMA SİSTEMLERİ, Postgraduate, 2013 - 2014, 2012 - 2013  
İLERİ ISI VE KÜTLE TRANSFERİ, Postgraduate, 2013 - 2014  
ENERJİ DEPOLAMA SİSTEMLERİ, Postgraduate, 2012 - 2013  
ISI VE KÜTLE GEÇİŞİ, Undergraduate, 2012 - 2013  
AKIŞKANLAR MEKANİĞİ, Undergraduate, 2012 - 2013

## Supervised Theses

Çalışkan H., İçten yanmalı motorlarda farklı egzoz arıtma sistemlerinin yakıt emisyonları üzerine etkisinin incelenmesi, Doctorate, H.İBRAHİM(Student), 2024  
Çalışkan H., Farklı çevre koşullarının ve klima kullanımının elektrikli bir aracın enerji tüketimine ve menziline etkilerinin incelenmesi, Postgraduate, E.MUHAMMED(Student), 2023  
Çalışkan H., Bir binek otomobilin ilk rölanti süresinin ve ortam koşullarının gerçek sürüş emisyonlarına etkilerinin incelenmesi , Postgraduate, Y.SELİM(Student), 2022  
Çalışkan H., Enhanced thermodynamic analysis and assessment of a cogeneration system for a ceramic factory, Doctorate, H.ÇAĞLAYAN(Student), 2020  
Çalışkan H., Thermodynamic analysis and emission assessment of a diesel engine fueled with various fuels, Postgraduate,

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

- I. **Impact of hydrogen induction on atomization combustion performance and emissions in diesel engines fueled with heated biodiesel blends**  
Yadav P. s., Said Z., Gautam R., ÇALIŞKAN H., Wu H.  
Energy, vol.313, 2024 (SCI-Expanded)
- II. **A Comprehensive analysis of energy, exergy, economic and environment on integrated solarcombined cycle with various HTFs and thermal storage**  
Khandelwal N., Yadav P. S., Said Z., Sharma M., Shukla A. K., Singh O., Khandelwal D., ÇALIŞKAN H.  
Applied Energy, vol.376, 2024 (SCI-Expanded)
- III. **Improving single-slope passive solar still efficiency through integration of phase change materials and Al2O3 nanoparticles**  
Khan Y., Said Z., Raman R., Singh P., Mehdi Rashidi M., ÇALIŞKAN H., Garg A.  
Journal of Thermal Analysis and Calorimetry, vol.149, no.21, pp.11807-11816, 2024 (SCI-Expanded)
- IV. **Nozzle effects on spray combustion and emissions in compression ignition engines using waste cooking oil biodiesel: A computational fluid dynamics analysis at varying injection pressures**  
Yadav P. S., Ahmed S. F. A., Gautam R., ÇALIŞKAN H., ÇALIŞKAN N., Hong H.  
IET Renewable Power Generation, vol.18, no.14, pp.2340-2359, 2024 (SCI-Expanded)
- V. **Investigating renewable and sustainable biofuel and biofuel/diesel blends utilizations in a turboshaft engine used on helicopters**  
Balli O., ÇALIŞKAN H.  
Energy, vol.306, 2024 (SCI-Expanded)
- VI. **Analyzing the influence of feedstock selection in pyrolysis on aviation gas turbine engines: A study on performance, combustion efficiency, and emission profiles**  
GÜNERHAN A., Altuntas O., ÇALIŞKAN H.  
Energy, vol.306, 2024 (SCI-Expanded)
- VII. **Prediction and optimisation of gasoline quality in petroleum refining: The use of machine learning model as a surrogate in optimisation framework**  
Saghir H., Ahmad I., Kano M., ÇALIŞKAN H., Hong H.  
CAAI Transactions on Intelligence Technology, vol.9, no.5, pp.1185-1198, 2024 (SCI-Expanded)
- VIII. **Artificial intelligence assisted prediction of optimum operating conditions of shell and tube heat exchangers: A grey-box approach**  
Ullah Z., Ahmad I., Samad A., Saghir H., Ahmad F., Kano M., Çalışkan H., Caliskan N., Hong H.  
CAAI Transactions on Intelligence Technology, vol.0, no.0, pp.1-10, 2024 (SCI-Expanded)
- IX. **Exergo-enviro-economic analyses of solar energy based novel air cooling system**  
Tripathi R. J., Kumar D., Caliskan H., Hong H.  
APPLIED THERMAL ENGINEERING, vol.254, pp.1-20, 2024 (SCI-Expanded)
- X. **Advanced exergoeconomic analysis and mathematical modelling of the natural gas fired gas turbine unit used for industrial cogeneration system**  
Çağlayan H., Çalışkan H., Hong H., Çalışkan N., Kale U., Kilikevičius A.  
CASE STUDIES IN THERMAL ENGINEERING, vol.61, no.104969, pp.1-26, 2024 (SCI-Expanded)
- XI. **A data-driven multi-objective optimization approach for enhanced methanol yield and exergy loss minimization in direct hydrogenation of CO<sub>2</sub>**  
Samad A., Saghir H., Musawwir A., Ahmad I., ÇALIŞKAN H.  
Applied Thermal Engineering, vol.251, 2024 (SCI-Expanded)
- XII. **Plant wide modelling and thermodynamic optimization of a petroleum refinery for improvement potentials**  
Sana A., Ahmad I., Saghir H., Kano M., ÇALIŞKAN H., Hong H.  
Process Safety and Environmental Protection, vol.188, pp.64-72, 2024 (SCI-Expanded)
- XIII. **Energy, exergy, sustainability, thermoeconomic, exergoeconomic, environmental and environmental-economic effects of novel boron-containing open cell geopolymer filter of a diesel engine on exhaust emissions**  
KARALI H. İ., ÇALIŞKAN H.

- Energy, vol.290, 2024 (SCI-Expanded)
- XIV. **Thermodynamics, Environmental and Sustainability Impacts of a Turbofan Engine Under Different Design Conditions Considering Variable Needs in the Aviation Industry**  
Aygün H., Sheikhi M. R., ÇALIŞKAN H.  
Global Challenges, vol.8, no.2, 2024 (SCI-Expanded)
- XV. **Sustainable Power Generation Through Solar-Driven Integration of Brayton and Transcritical CO<sub>2</sub> Cycles: A Comprehensive 3E (Energy, Exergy, and Exergoenvironmental) Evaluation**  
Khan Y., Raman R., Said Z., ÇALIŞKAN H., Hong H.  
Global Challenges, vol.8, no.2, 2024 (SCI-Expanded)
- XVI. **Thermodynamic and exergoenvironmental assessments of solar-assisted combined power cycle using eco-friendly fluids**  
Khan Y., Raman R., Rashidi M. M., Said Z., ÇALIŞKAN H., Hoang A. T.  
Journal of Thermal Analysis and Calorimetry, vol.149, no.3, pp.1125-1139, 2024 (SCI-Expanded)
- XVII. **Prediction and optimization of emissions in cement manufacturing plant under uncertainty by using artificial intelligence-based surrogate modeling**  
Usman M., Ahmad I., Ahsan M., ÇALIŞKAN H.  
Environment, Development and Sustainability, 2024 (SCI-Expanded)
- XVIII. **Grey-box modelling for estimation of optimum cut point temperature of crude distillation column**  
Shahzad J., Ahmad I., Ahsan M., Ahmad F., Saghir H., Kano M., ÇALIŞKAN H., Hong H.  
CAAI Transactions on Intelligence Technology, 2024 (SCI-Expanded)
- XIX. **Advanced exergy-based environmental analysis of a cogeneration system used for ceramic industry**  
Caglayan H., ÇALIŞKAN H., Hong H.  
Journal of Thermal Analysis and Calorimetry, 2024 (SCI-Expanded)
- XX. **Environmental and second law analysis of a turbojet engine operating with different fuels**  
Kagan Ayaz S., ÇALIŞKAN H., Altuntas O.  
Energy, vol.285, 2023 (SCI-Expanded)
- XXI. **Artificial intelligence based prediction of optimum operating conditions of a plate and fin heat exchanger under uncertainty: A gray-box approach**  
Khan J. S., Ahmad I., Jadoon U. K., Samad A., Saghir H., Kano M., ÇALIŞKAN H.  
International Journal of Heat and Mass Transfer, vol.217, 2023 (SCI-Expanded)
- XXII. **A comparative study of combined cycles for concentrated solar power for efficient power generation using low Global Warming Potential (GWP) fluids to reduce environmental effects**  
Khan Y., ÇALIŞKAN H., Hong H.  
IET Renewable Power Generation, vol.17, no.16, pp.3741-3754, 2023 (SCI-Expanded)
- XXIII. **Investigating the effects of first idle time and ambient temperature on real driving emissions of passenger cars**  
Akdag Y. S., Kato A., ÇALIŞKAN H.  
Air Quality, Atmosphere and Health, vol.16, no.12, pp.2443-2456, 2023 (SCI-Expanded)
- XXIV. **Exergoeconomic and Thermodynamic Analyses of Solar Power Tower Based Novel Combined Helium Brayton Cycle-Transcritical CO<sub>2</sub> Cycle for Carbon Free Power Generation**  
Khan Y., Singh D., ÇALIŞKAN H., Hong H.  
Global Challenges, vol.7, no.12, 2023 (SCI-Expanded)
- XXV. **Investigation and assessment of the optimum conditions of solar heat source hybrid desiccant cooling system under different modes**  
Seung D., Min S., ÇALIŞKAN H., Hong H.  
Solar Energy, vol.265, 2023 (SCI-Expanded)
- XXVI. **Maisotsenko Cycle for Heat Recovery in Gas Turbines: A Fundamental Thermodynamic Assessment**  
Tariq R., ÇALIŞKAN H., Sheikh N. A.  
Global Challenges, vol.7, no.11, 2023 (SCI-Expanded)
- XXVII. **Prediction and optimization of exergetic efficiency of reactive units of a petroleum refinery under uncertainty through artificial neural network-based surrogate modeling**  
Samad A., Ahmad I., Kano M., ÇALIŞKAN H.  
Process Safety and Environmental Protection, vol.177, pp.1403-1414, 2023 (SCI-Expanded)
- XXVIII. **Utilization of renewable and sustainable aviation biofuels from waste tyres for sustainable aviation transport sector**

- GÜNERHAN A., Altuntas O., ÇALIŞKAN H.  
Energy, vol.276, 2023 (SCI-Expanded)
- XXIX. **Environmental and thermoecological comparative assessment of improved humid air waste heat recovery configurations**  
Tariq R., ÇALIŞKAN H., Sheikh N. A.  
Journal of Cleaner Production, vol.407, 2023 (SCI-Expanded)
- XXX. **Thermodynamic analysis and experimental investigation of the water spray cooling of photovoltaic solar panels**  
Khan Y., Raman R., Rashidi M. M., ÇALIŞKAN H., Chauhan M. K., Chauhan A. K.  
Journal of Thermal Analysis and Calorimetry, vol.148, no.12, pp.5591-5602, 2023 (SCI-Expanded)
- XXXI. **Thermodynamic analysis of cumene production plant for identification of energy recovery potentials**  
Samad A., Saghir H., Ahmad I., Ahmad F., ÇALIŞKAN H.  
Energy, vol.270, 2023 (SCI-Expanded)
- XXXII. **Energy, exergy, thermoecologic, environmental, enviroeconomic and sustainability analyses and assessments of the aircraft engine fueled with biofuel and jet fuel**  
AKDENİZ H. Y., Balli O., ÇALIŞKAN H.  
Journal of Thermal Analysis and Calorimetry, vol.148, no.9, pp.3585-3603, 2023 (SCI-Expanded)
- XXXIII. **Novel investigation on atomization, performance, and emission characteristics of preheated jatropha oil methyl ester and ethyl ester**  
Yadav P. S., Said Z., Gautam R., Raman R., ÇALIŞKAN H.  
Energy, vol.270, 2023 (SCI-Expanded)
- XXXIV. **Energy, exergy, economic, environmental, and sustainability assessments of the CFM56-3 series turbofan engine used in the aviation sector**  
Korba P., Balli O., ÇALIŞKAN H., Al-Rabeei S., Kale U.  
Energy, vol.269, 2023 (SCI-Expanded)
- XXXV. **Advanced, extended and combined extended-advanced exergy analyses of a novel geothermal powered combined cooling, heating and power (CCHP) system**  
ÇALIŞKAN H., Açikkalp E., Rostamnejad Takleh H., Zare V.  
Renewable Energy, vol.206, pp.125-134, 2023 (SCI-Expanded)
- XXXVI. **Thermodynamics, environmental damage cost, exergoeconomic, life cycle, and exergoenvironmental analyses of a JP-8 fueled turbodiesel aviation engine at take-off phase**  
Korba P., Balli O., ÇALIŞKAN H., Al-Rabeei S., Kale U.  
Case Studies in Thermal Engineering, vol.43, 2023 (SCI-Expanded)
- XXXVII. **Aviation, energy, exergy, sustainability, exergoenvironmental and thermoecologic analyses of a turbojet engine fueled with jet fuel and biofuel used on a pilot trainer aircraft**  
Balli O., ÇALIŞKAN N., ÇALIŞKAN H.  
Energy, vol.263, 2023 (SCI-Expanded)
- XXXVIII. **Production and Assessment of New Biofuels from Waste Cooking Oils as Sustainable Bioenergy Sources**  
ÇALIŞKAN H., Yildiz I., Mori K.  
Energies, vol.16, no.1, 2023 (SCI-Expanded)
- XXXIX. **Prediction of optimum operating conditions of a furnace under uncertainty: An integrated framework of artificial neural network and genetic algorithm**  
Khan M., Ahmad I., Ahsan M., Kano M., ÇALIŞKAN H.  
Fuel, vol.330, 2022 (SCI-Expanded)
- XL. **Environmental impact assessments of different auxiliary power units used for commercial aircraft by using global warming potential approach**  
Balli O., ÇALIŞKAN H.  
Environmental Science and Pollution Research, vol.29, no.58, pp.87334-87346, 2022 (SCI-Expanded)
- XLI. **An integrated approach of artificial neural networks and polynomial chaos expansion for prediction and analysis of yield and environmental impact of oil shale retorting process under uncertainty**  
Qayyum Chohan H., Ahmad I., Mohammad N., Manca D., ÇALIŞKAN H.  
Fuel, vol.329, 2022 (SCI-Expanded)
- XLII. **An intelligent sensing system for estimation of efficiency of carbon-capturing unit in a cement plant**  
Jadoon U. K., Ahmad I., Noor T., Kano M., ÇALIŞKAN H., Ahsan M.  
Journal of Cleaner Production, vol.377, 2022 (SCI-Expanded)

- XLIII. **Thermodynamic-based environmental and enviroeconomic assessments of a turboprop engine used for freight aircrafts under different flight phases**  
Dinc A., ÇALIŞKAN H., Ekici S., ŞÖHRET Y.  
Journal of Thermal Analysis and Calorimetry, vol.147, no.22, pp.12693-12707, 2022 (SCI-Expanded)
- XLIV. **Thermodynamic-based analyses and assessments of a new-generation turbojet engine used for unmanned aerial vehicles (UAVs)**  
ŞÖHRET Y., ÇALIŞKAN H.  
Journal of Thermal Analysis and Calorimetry, vol.147, no.20, pp.11273-11288, 2022 (SCI-Expanded)
- XLV. **Performance analysis of PVT systems applicable to apartment housing structures: experiment and simulation**  
Piao H., ÇALIŞKAN H., Chung J. D., Kim J. H., Hong H.  
Journal of Mechanical Science and Technology, vol.36, no.10, pp.5299-5307, 2022 (SCI-Expanded)
- XLVI. **Extended exergy analysis of a photovoltaic-thermal (PVT) module based desiccant air cooling system for buildings**  
Açıklalp E., ÇALIŞKAN H., Hong H., Piao H., Seung D.  
Applied Energy, vol.323, 2022 (SCI-Expanded)
- XLVII. **Assessment of a cogeneration system for ceramic industry by using various exergy based economic approaches**  
Caglayan H., ÇALIŞKAN H.  
Renewable and Sustainable Energy Reviews, vol.167, 2022 (SCI-Expanded)
- XLVIII. **Evaluating and modelling of thermodynamic and environmental parameters of a gas turbine engine and its components**  
Aygün H., ÇALIŞKAN H.  
Journal of Cleaner Production, vol.365, 2022 (SCI-Expanded)
- XLIX. **Advanced exergy analysis of the turbojet engine main components considering mexogenous, endogenous, exogenous, avoidable and unavoidable exergy destructions**  
ÇALIŞKAN H., Ekici S., ŞÖHRET Y.  
Propulsion and Power Research, vol.11, no.3, pp.391-400, 2022 (SCI-Expanded)
- L. **Energy, exergy, economic, environmental, energy based economic, exergoeconomic and enviroeconomic (7E) analyses of a jet fueled turbofan type of aircraft engine**  
AKDENİZ H. Y., Balli O., ÇALIŞKAN H.  
Fuel, vol.322, 2022 (SCI-Expanded)
- LI. **Life cycle assessment based exergoenvironmental analysis of a cogeneration system used for ceramic factories**  
Caglayan H., ÇALIŞKAN H.  
Sustainable Energy Technologies and Assessments, vol.52, 2022 (SCI-Expanded)
- LII. **Sustainability analyses of photovoltaic electrolysis and magnetic heat engine coupled novel system used for hydrogen production and electricity generation**  
Açıklalp E., Altuntas O., ÇALIŞKAN H., Grisolia G., Lucia U., Borge-Diez D., Rosales-Asensio E.  
Sustainable Energy Technologies and Assessments, vol.52, 2022 (SCI-Expanded)
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- II. **Investigation of Exhaust Emissions Improvement Ability of Open Porous Geopolymer Filter with 5% Boron**

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**III. INVESTIGATING GEOPOLYMER FOAM STRUCTURES ENHANCED WITH BORON WASTE CLAY**

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**IX. TAMAMEN ELEKTRİKLİ BİR ARABANIN ULUSLARARASI UYUMLU HALE GETİRİLMİŞ HAFİF ARAÇLAR TEST PROSEDÜRÜ (WLTP) İLE ÖLÇÜLMÜŞ ENERJİ TÜKETİMİNİN İNCELENMESİ**

Kaplan E. M., ÇALIŞKAN H.

Anadolu 11 th International Conference on Applied Science, Diyarbakır, Turkey, 29 - 30 December 2022, pp.657-661

**X. Physical and Chemical Exergy Analyses of the Gas Turbine Combustion Chambers Used for The Aviation Sector**

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- XVI. **The effect of operating a diesel engine in different exhaust after treatment systems on fuel consumption**  
YILDIZ İ., ÇALIŞKAN H., Mori K.  
International Korkut Ata Scientific Researches Conference, Osmaniye, Turkey, 28 - 30 June 2022, pp.567-570
- XVII. **Investigation of exhaust emissions of a diesel engine operated with specific biodiesel fuel using Diesel Oxidation Catalyst (DOC) as an after treatment system**  
YILDIZ İ., ÇALIŞKAN H., Mori K.  
5th international "Başkent" congress on physical, social and health sciences, İstanbul, Turkey, 11 - 12 June 2022, pp.599-602
- XVIII. **Evaluation of THC and CO driving emissions in real conditions of an internal combustion engine car in different environmental conditions**  
AKDAĞ Y. S., ÇALIŞKAN H.  
5th international "Başkent" congress on physical, social and health sciences, İstanbul, Turkey, 11 - 12 June 2022, pp.542-546
- XIX. **Assessment of energy analysis results of a diesel engine using DOC after treatment system depending on fuels**  
YILDIZ İ., ÇALIŞKAN H., Mori K.  
6th International Conference on Advances in Mechanical Engineering (ICAME 2021), İstanbul, Turkey, 20 - 22 October 2021, pp.438-444
- XX. **Variation of fuel consumption and total particle concentrations of renewable biofuel and fossil diesel fuel depending on engine loads**  
ÇALIŞKAN H., YILDIZ İ., Mori K.  
4. International Conference on Life and Engineering Sciences (ICOLES 2021), İstanbul, Turkey, 23 - 25 September 2021, pp.112-122
- XXI. **The effect of the DOC after treatment system on emission gases released by combustion of diesel fuel in a diesel engine**  
YILDIZ İ., ÇALIŞKAN H., Mori K.  
4. International Conference on Life and Engineering Sciences (ICOLES 2021), İstanbul, Turkey, 23 - 25 September 2021, pp.104-111
- XXII. **THERMO-ENVIRONMENTAL PERFORMANCE ASSESSMENTS OF A MEDIUM-SCALE AERO TURBOJET ENGINE**  
AKDENİZ H. Y., Ballı Ö., ÇALIŞKAN H.  
TUBA World Conference on Energy Science and Technology (TUBA WCEST-2021), Turkey, 8 - 12 August 2021, pp.259-260
- XXIII. **MULTI-OBJECTIVE OPTIMIZATION OF A MULTISTAGE VAPOR COMPRESSION REFRIGERATION CYCLE**  
USTAOĞLU A., KURŞUNCU B., KAYA A. M., ÇALIŞKAN H.  
TUBA World Conference on Energy Science and Technology (TUBA WCEST-2021), Turkey, 8 - 12 August 2021, pp.321-322
- XXIV. **Comparison of diesel no 2 fuel with new biodiesel fuel from waste oils in terms of fuel properties**  
YILDIZ İ., ÇALIŞKAN H., Mori K.  
8th International Conference on Renewable Fuels, Combustion and Fire (FCE'21), Ankara, Turkey, 5 - 07 March 2021, pp.98-102
- XXV. **Comparison of The Emissions of Diesel and Waste Derived Biofuel Under 100 Nm Engine Load**  
YILDIZ İ., ÇALIŞKAN H., Mori K.  
15th International Combustion Symposium, Kayseri, Turkey, 17 - 19 September 2020, pp.428-432
- XXVI. **Investigation of Combustion of Kerosene Fuel Used in Aviation**  
TUZCU H., ÇALIŞKAN H.  
15th International Combustion Symposium, Kayseri, Turkey, 17 - 19 September 2020, pp.75-79
- XXVII. **Hybrid Nuclear/Renewable-Thermal System**  
ÇALIŞKAN H.  
Second Consultancy Meeting to Develop the Nuclear Energy Series Document on Nuclear–Renewable Hybrid Energy Systems, Viyana, Austria, 16 - 19 December 2019
- XXVIII. **Nuclear-Renewable Hybrid Energy Systems – IAEA Activities**  
Haneklaus N., Gaber H., Berthelemy M., Kim Y., Tucek K., Arif A., Debelak K., ÇALIŞKAN H., Ruth M., Shannon B. S., et al.  
International Conference on Climate Change and the Role of Nuclear Power, Vienna, Austria, 7 - 11 October 2019
- XXIX. **Develop the Content for Nuclear Energy Series on Nuclear–Renewable Hybrid Energy Systems: Turkey Perspective**

ÇALIŞKAN H.

1st Consultancy Meeting to Develop the Nuclear Energy Series on Nuclear-Renewable Hybrid Energy Systems, Vienna, Austria, 11 - 14 February 2019

- XXX. **Pollution cost assessment of a gas turbine**  
AYAZ S. K., ALTUNTAŞ Ö., ÇALIŞKAN H.  
The International Symposium in Environmental Science and Industrial Ecology (ISESIE 2018), Bangkok, Thailand, 11 - 12 December 2018
- XXXI. **Environmental assessments of a micro gas turbine**  
AYAZ S. K., ALTUNTAŞ Ö., ÇALIŞKAN H.  
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- XXXII. **Emission Nanoparticle Assessments and Exergetic Comparisons of Cooking Oil Biodiesel and Standard Diesel Fuels Used for Internal Combustion Engine**  
YILDIZ İ., ÇALIŞKAN H., Mori K.  
The International Symposium in Environmental Science and Industrial Ecology (ISESIE 2018), Bangkok, Thailand, 11 - 12 December 2018
- XXXIII. **Pollution Cost Assessments of a Diesel Engine**  
YILDIZ İ., AÇIKKALP E., ÇALIŞKAN H., Mori K.  
The International Symposium in Environmental Science and Industrial Ecology (ISESIE 2018), Bangkok, Thailand, 11 - 12 December 2018
- XXXIV. **Thermodynamic based ecologic assessment of a kiln**  
Çağlayan H., ÇALIŞKAN H.  
The International Symposium in Environmental Science and Industrial Ecology (ISESIE 2018), Bangkok, Thailand, 11 - 12 December 2018
- XXXV. **Thermo-Ecologic Evaluation of a Spray Dryer for Ceramic Industry**  
Caglayan H., ŞÖHRET Y., ÇALIŞKAN H.  
4th International Symposium on Hydrogen Energy, Renewable Energy and Materials, HEREM 2018, Bangkok, Thailand, 13 - 14 June 2018, vol.144, pp.164-169
- XXXVI. **Investigation of the energy recovery in the burners of the ceramic factory kiln**  
Caglayan H., ÇALIŞKAN H.  
4th International Symposium on Hydrogen Energy, Renewable Energy and Materials, HEREM 2018, Bangkok, Thailand, 13 - 14 June 2018, vol.144, pp.118-124
- XXXVII. **Performance assessment of the proton exchange membrane fuel cell - Chemical heat pump hybrid system**  
Açikkalp E., ÇALIŞKAN H.  
4th International Symposium on Hydrogen Energy, Renewable Energy and Materials, HEREM 2018, Bangkok, Thailand, 13 - 14 June 2018, vol.144, pp.125-131
- XXXVIII. **Effect of ammonia fuel fraction on the exergetic performance of a gas turbine**  
Ayaz S. K., Altuntas O., ÇALIŞKAN H.  
4th International Symposium on Hydrogen Energy, Renewable Energy and Materials, HEREM 2018, Bangkok, Thailand, 13 - 14 June 2018, vol.144, pp.150-156
- XXXIX. **Thermodynamic analysis and nanoparticle assessment of Japanese diesel no 2 fueled truck engine**  
Yildiz I., ÇALIŞKAN H., Mori K.  
4th International Symposium on Hydrogen Energy, Renewable Energy and Materials, HEREM 2018, Bangkok, Thailand, 13 - 14 June 2018, vol.144, pp.104-110
- XL. **Thermodynamic Comparison of Various Spray Dryers for Ceramic Industry**  
Çağlayan H., ÇALIŞKAN H.  
International Conference on Engineering Technologies (ICENTE'17), Konya, Turkey, 7 - 09 December 2017, pp.921-925
- XLI. **Energy and Exergy Analysis of a Heat Generation Unit for the Spray Dryer**  
Çağlayan H., ÇALIŞKAN H.  
International Advanced Researches Engineering Congress-2017, Osmaniye, Turkey, 16 - 18 November 2017, pp.226-230
- XLII. **Thermodynamic Assessment of a Gas Turbine for the Ceramic Factory**  
Çağlayan H., ÇALIŞKAN H.  
International Advanced Researches Engineering Congress-2017, Osmaniye, Turkey, 16 - 18 November 2017, pp.221-225
- XLIII. **Energy and Exergy Analyses of HVAC Systems**  
ÇALIŞKAN H., Hong H.

- 2017 SAREK Annual Conference, Pyeongyang, North Korea, 21 - 23 June 2017
- XLIV. **The Effect of Evaporator Effectiveness on Unit Exergy Cost of Electricity Generated by an Organic Rankine Cycle**  
Uysal C., Özcan H., ÇALIŞKAN H., Kwak H., Kurt H., Hong H.  
2017 SAREK Annual Conference, Pyeongyang, North Korea, 21 - 23 June 2017
- XLV. **Low Exergy Lowex analysis of a building with a ground source heat pump**  
ÇALIŞKAN H.  
2nd International Conference on Innovative Trends in Engineering Science and Technology (ICITESM-16), YMCA, Jai Singh Road, Delhi, India, India, 19 November 2016
- XLVI. **Energy and Exergy Analyses of Residential Heating with Electrical Energy**  
ÇALIŞKAN H.  
6th International Conference on Innovative Research in Engineering Science and Management (ICIRESM-16), The Institution of Electric and Telecommunication Engineers (IETE), Lodhi Road, New Delhi, Delhi, India, India, 09 October 2016
- XLVII. **Exergy and Sustainability Assessments of Flat Plate Solar Thermal Collectors**  
ÇALIŞKAN H.  
6th International Conference on Innovative Research in Engineering Science and Management (ICIRESM-16), The Institution of Electric and Telecommunication Engineers (IETE), Lodhi Road, New Delhi, Delhi, India, India, 09 October 2016
- XLVIII. **Thermal Behavior and Energetic Dispersals of Human Body Under Various Indoor Air Temperatures at 50 Relative Humidity**  
ÇALIŞKAN H.  
3rd International Conference on Recent Innovation in Science, Technology and Management (ICRISTM-16), Indian Federation of United Nations Associations (IFUNA) C-6, Qutab Institutional Area, New Delhi, India, India, 18 September 2016
- XLIX. **Environmental Assessment of Solar Collectors**  
ÇALIŞKAN H.  
3rd International Conference on Recent Innovation in Science, Technology and Management (ICRISTM-16), Indian Federation of United Nations Associations (IFUNA) C-6, Qutab Institutional Area, New Delhi, India, India, 18 September 2016
- L. **A thermodynamic study on renewable energy based hydrogen production and storage systems**  
ÇALIŞKAN H., DİNÇER İ., HEPBAŞLI A.  
International Conference on Hydrogen Production (ICH2P-2011), Thessaloniki, Greece, 19 June 2011 - 22 June 2010, vol.0, pp.1-12
- LI. **Exergetic assessment of a thermal energy storage system coupled with a solar ground heat pump**  
ÇALIŞKAN H., HEPBAŞLI A., DİNÇER İ.  
5th International Ege Energy Symposium and Exhibition (IEESE-5), Denizli, Turkey, 27 - 30 June 2010, vol.0
- LII. **Exergy cost analysis of a diesel engine fueled with various fuels**  
ÇALIŞKAN H., HEPBAŞLI A.  
Global Conference on Global Warming 2009 (GCGW-2009), İstanbul, Turkey, 5 - 09 July 2009, vol.0, pp.862-871
- LIII. **Comparing the energetic and exergetic prices of various energy sources for the Turkish residential and industrial applications**  
ÇALIŞKAN H., HEPBAŞLI A.  
1st International Exergy, Life Cycle Assessment and Sustainability Workshop/Symposium (ELCAS), NISYROS, Greece, 4 - 06 June 2009, vol.8
- LIV. **Güneş Takip Sistemlerinin İncelenmesi**  
ÇALIŞKAN H., ÖZTÜRK H. K.  
2. Ulusal Güneş ve Hidrojen Enerjisi Kongresi (UGHEK-2008), Eskişehir, Turkey, 12 - 13 June 2008, vol.151, pp.96-111

## Supported Projects

Çalışkan H., Ergün Y., Karalı H. İ., TUBITAK Project, Dizel Motorlu Araçlar İçin Katma Değerli Yerli ve Milli Özgün Alternatif Egzoz Arıtma Sistemlerinin Geliştirilmesi ve Analizi, 2022 - 2024

Çalışkan H., Other International Funding Programs, Analysis and Experiment of the Novel Solar Heating and Desiccant Cooling Systems, 2017 - 2018

Çalışkan H., Project Supported by Higher Education Institutions, Uşak Üniversitesi Bilimsel Araştırma Projesi (Proje No: 2017/HD-MF002): Türkiye'nin konut ve sanayi sektöründe kullanılan enerji kaynaklarının enerjetik ve ekserjetik fiyatlarının ve karbondioksit emisyonlarının hesaplanması ve değerlendirilmesi, 2017 - 2017



Çalışkan H., Other International Funding Programs, Study for effects of biodiesel fuel on exhaust emissions and nanoparticles of diesel engine, 2016 - 2016

## Activities in Scientific Journals

Frontiers in Energy Research, Editor, 2023 - Continues

## Metrics

Publication: 181

Citation (WoS): 2440

Citation (Scopus): 2754

H-Index (WoS): 27

H-Index (Scopus): 30

## Awards

Çalışkan H., Akademik Performans Ödülü, Uşak Üniversitesi, January 2024

Çalışkan H., En Yüksek Etki Faktörlü Dergilerde Yayın Ödülü, Uşak Üniversitesi, January 2022

Çalışkan H., Akademik Performans Ödülü, Uşak Üniversitesi, January 2022

Çalışkan H., Akademik Personel Kalite Ödülü (Mühendislik), Uşak Üniversitesi, January 2022

Çalışkan H., Atf Ödülü, Uşak Üniversitesi, January 2022

Çalışkan H., En Yüksek Etki Faktörlü Dergide Yayın Ödülü, Uşak Üniversitesi, January 2021

Çalışkan H., Uşak Üniversitesi En Yüksek Etki Faktörlü Dergide Yayın Ödülü, Uşak Üniversitesi, January 2021

Çalışkan H., BİRGİN O., Uşak Üniversitesi Akademik Performans Ödülü, Uşak Üniversitesi, January 2021

Çalışkan H., Akademik Performans Ödülü, Uşak Üniversitesi, January 2021

Çalışkan H., Uşak Üniversitesi Atf Ödülü-2020, Uşak Üniversitesi, January 2020

Çalışkan H., Akademik Performans Ödülü-2020, Uşak Üniversitesi, January 2020

Çalışkan H., En Yüksek Etki Faktörlü Dergide Yayın Ödülü, Uşak Üniversitesi, January 2020

Çalışkan H., Uşak Üniversitesi Bilimsel Yayın Ödülü, Uşak Üniversitesi, January 2015

Çalışkan H., Uşak Üniversitesi Bilimsel Yayın Onur Ödülü, Uşak Üniversitesi, January 2013

Çalışkan H., BİRİNCİLİK-MAKİNE MÜHENDİSLİĞİ ANABİLİM DALI, Ege Üniversitesi, January 2012

Çalışkan H., BİRİNCİLİK-MAKİNE MÜHENDİSLİĞİ ANABİLİM DALI, Eskişehir Osmangazi Üniversitesi, January 2009

Çalışkan H., BİRİNCİLİK-MAKİNE MÜHENDİSLİĞİ BÖLÜMÜ, Pamukkale Üniversitesi, January 2007

## Non Academic Experience

University, Kyung Hee University, College of Engineering, Department of Mechanical Engineering, Yongin, Gyeonggi, Republic of Korea, Department of Mechanical Engineering

University, Teikyo University, Faculty of Science Engineering, Department of Mechanical Precision System Engineering, Utsunomiya, Tochigi, Japan, Department of Mechanical Precision System Engineering

University, Budapest University of Technology and Economics (BME), Budapest, Hungary, Budapest University of Technology and Economics (BME)

University, University of Ontario Institute of Technology (UOIT), Oshawa, Ontario/Canada, Faculty of Engineering and Applied Science