Assoc. Prof.
Mehmet
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Personal Information

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International Researcher IDs
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Yoksis Researcher ID: 116168

Biography

Dr Mehmet ÇAKIR is an Associate Professor at the Department of Marine Engineering at Yildiz Technical University.

He had been as a visiting fellow to research on alternative fueled engine and combustion at Powertrain Research Group of Nottingham University with a TUBITAK International Research Scholarship between 2018-2020. He successfully led various innovative projects supported by TUBITAK and The Ministry of Industry and Technology.

His core research themes are focused on the novel combustion modes in engines, laminar flame velocity measures and visualization, carbon-free fuels and ammonia cracking systems for ICEs.

Dr Çakır is open to enquiries of potential home and international PhD candidates and researchers who are interested in the following research areas

Current projects include:

Software development and monitoring of engine performance for ICEs

Laminer combustion researches for ammonia/hydrogen/methane mixtures

Combustion chamber designs and novel ignition modes

Schlieren imaging and constant volume combustion bomb tests

Computational fluid dynamics modeling of combustion

Foreign Languages

English, B2 Upper Intermediate

Research Areas

Energy, Fuels and Combustion, Internal Combustion Engines, Thermal machines, Alternate Fuels and Energy Resources, Ship Machines, Fuel production technology

Academic Titles / Tasks

Associate Professor, Yildiz Technical University, Naval Architecture And Maritime Faculty, Department Of Marine Engineering Operations, 2020 - Continues
Assistant Professor, Yildiz Technical University, Naval Architecture And Maritime Faculty, Department Of Marine Engineering Operations, 2018 - 2020
Assistant Professor, Yildiz Technical University, Naval Architecture And Maritime Faculty, Department Of Marine Engineering Operations, 2013 - 2018

Advising Theses

Çakır M., Using compressed natural gas as fuel in a spark igniton engine and experimental investigation of engine performance, Postgraduate, H.İBRAHİM(Student), 2017
Çakır M., Experimental investigation of performance for single cylinder spark ignited cng fueled engine at different compression ratios, Postgraduate, M.MERT(Student), 2017

Published journal articles indexed by SCI, SSCI, and AHCI

I. **Influences of a novel pre-chamber design on the performance and emission characteristics of a spark ignition engine fuelled with natural gas**
Çakır M., Gonca G.
International Journal of Global Warming, vol.31, no.1, pp.68-81, 2023 (SCI-Expanded)
II. **Design and development of the PLC based sensor and instrumentation system for self-propelled pruning residue mulcher prototype**
ÜNAL İ., ÇANAKCI M., TOPAKCI M., KARAYEL D., ÇAKIR M.
COMPUTERS AND ELECTRONICS IN AGRICULTURE, vol.186, 2021 (SCI-Expanded)
III. **Experimental dynamic analysis of the piston assembly of a running single-cylinder diesel engine**
ÇAKIR M.
Journal of Marine Engineering and Technology, vol.20, no.4, pp.235-242, 2021 (SCI-Expanded)
IV. **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 (SCI-Expanded)
V. **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 (SCI-Expanded)
VI. **Ecological coefficient of performance analysis and optimisation of gas turbines by using exergy analysis approach**
Üst Y., Şahin B., Çakır M.
INTERNATIONAL JOURNAL OF EXERGY, vol.21, pp.39-69, 2016 (SCI-Expanded)
VII. **THE NUMERICAL THERMODYNAMIC ANALYSIS OF OTTO-MILLER CYCLE**
ÇAKIR M.
THERMAL SCIENCE, vol.20, no.1, pp.363-369, 2016 (SCI-Expanded)
VIII. **Effects of Borided Cylinder Liner on Engine Performance in a Firing Diesel Engine**
Çakir M., Akcay I. H.
ARABIAN JOURNAL FOR SCIENCE AND ENGINEERING, vol.40, pp.3329-3335, 2015 (SCI-Expanded)
IX. **Thermodynamic performance analysis and optimization of DMC (Dual Miller Cycle) cogeneration system by considering exergetic performance coefficient and total exergy output criteria**
ÜST Y., ARSLAN F., ÖZSARI İ., ÇAKIR M.
ENERGY, vol.90, pp.552-559, 2015 (SCI-Expanded)
X. **INVESTIGATION THEORETICALLY AND EMPIRICALLY OF CORRELATION BETWEEN HARDENABILITY AND**

HEAT TRANSFER FOR JOMINY SAMPLE
Çakir M., Ozsoy A.
JOURNAL OF THE FACULTY OF ENGINEERING AND ARCHITECTURE OF GAZI UNIVERSITY, vol.28, pp.251-256, 2013 (SCI-Expanded)

XI. **Investigation of the correlation between thermal properties and hardenability of Jominy bars quenched with air-water mixture for AISI 1050 steel**
Cakir M., Ozsoy A.
MATERIALS & DESIGN, vol.32, pp.3099-3105, 2011 (SCI-Expanded)

Articles Published in Other Journals

I. **Determination of the Management Costs for Self-Propelled Pruning Residue Shredder**
Canakci M., Topakci M., Karayel D., Unal I., Çakır M., Yigit M., Ozdemir E.
Journal of Agricultural Machinery Science, vol.14, no.2, pp.127-134, 2018 (Peer-Reviewed Journal)

II. **Experimental Performance Analysis of a Partially Loaded Natural Gas Fuelled Research Engine**
Çakır M.
JOURNAL OF ETA MARITIME SCIENCE, vol.6, no.2, pp.85-91, 2018 (ESCI)

III. **Cost Efficiency and Emission Analysis of a Bulk Carrier Cranes Operation**
Bashan V., ÇAKIR M., SÖNMEZ H. İ.
JOURNAL OF ETA MARITIME SCIENCE, vol.6, no.1, pp.27-36, 2018 (ESCI)

IV. **Frictional Behavior between Piston Ring and Cylinder Liner in Engine Condition with Application of Reciprocating Test**
Çakır M., Akcay İ. H.
International Journal of Materials Engineering and Technology, vol.11, no.1, pp.57-71, 2014 (Peer-Reviewed Journal)

V. **An Investigation on Correlation between Engine Performance and Piston Ring-Cylinder Friction in Internal Combustion Engines**
Çakır M., Akcay İ. H.
C.B.U. Soma Meslek Yüksek Okulu Teknik Bilimler Meslek Yüksek Okulu Dergisi, vol.2, no.16, pp.33-44, 2011 (Peer-Reviewed Journal)

Refereed Congress / Symposium Publications in Proceedings

I. **EFFECT OF COMPRESSION RATIO ON THE PERFORMANCE OF A NATURAL GAS FIRED ENGINE**
ÇAKIR M., SÖNMEZ H. İ.
4TH INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCE, Kıev, Ukraine, 02 May 2018, pp.387

II. **DESIGN OF COMPRESSED NATURAL GAS-AIR MIXER FOR A SINGLE CYLINDER GAS ENGINE**
ÇAKIR M., Sezer K., Sezer S.
4th International Conference on Engineering and natural Science, Kiew, Ukraine, 02 May 2018, pp.386

III. **The Wear Behaviour Borided Cast Iron Cylinder Liner on a Running Diesel Engine**
ÇAKIR M., Akçay İ. H.
III. International Conference on Engineering and Natural Science (ICENS), Budapeşte, Hungary, 03 May 2017, pp.614-618

IV. **Determination of Pre-combustion Chamber Design for a Stratified Charge Natural Gas Engine**
ÇAKIR M., SÖNMEZ H. İ.
III. International Conference on Engineering and Natural Science (ICENS), Budapeşte, Hungary, 03 May 2017, pp.609-613

V. **Experimental Assessment of Heat Flux throughout Cylinder Wall in a Compression Ignition Engine**
ÇAKIR M.
2nd International Conference on Engineering and Natural Science, Sarajova, Bosnia And Herzegovina, 24 May 2016, pp.409-414

VI. **Effects of Piston Motion on Specific Surfaces of the Cylinder Liner in a Compression Ignition Engine**
ÇAKIR M., AKÇAY İ. H.
icens 2015, 15 - 19 May 2015

Supported Projects

Çakır M., Üst Y., Kayadelen H. K., Başak M. E., TUBITAK Project, Optimization Research of Combustion Kinetic Mechanism for Ammonia Fueled Power Systems, 2021 - 2024
Çakır M., TUBITAK Project, Development of ammonia cracker prototype for zero carbon power systems, 2022 - 2023
Çakır M., KOSGEB, Sabit Hacimli Yanma Hızı Ölçüm Cihazı Prototip İmalatı Projesi, 2020 - 2022
Çakır M., TUBITAK Project, Doğal Gaz Yakıtlı Tek Silindirli Bir Motorun Jet Ateşleme Yöntemi ile Simulasyonu ve Deneysel Performans Araştırması, 2019 - 2020
Çakır M., TUBITAK Project, Doğal Gaz Yakıtlı Bir Motor İçin Gaz Karıştırıcı Sistem Tasarımı, 2017 - 2018
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
Çakır M., Çanakcı M., TUBITAK Project, Self-propelled waste bough shredding machine prototype production, 2015 - 2018
Çakır M., TUBITAK Project, Crab gaited beach cleaning machine, 2011 - 2012
Akçay I. H., TUBITAK Project, Combustion Optimization and Determination of the Effects of Engine Performance Parameters in a Hydrogen Fuel Spark Ignition Engine, 2007 - 2010

Patent

Çakır M., A SELF-PROPELLED PRUNING RESIDUE SHREDDING MACHINE., Utility Model, CHAPTER B Implementation of Operations; Transport, The Invention Registration Number: TR 2018 02887 Y , Standard Registration, 2023
Çakır M., A SELF-PROPELLED PRUNING RESIDUE SHREDDING MACHINE, Patent, CHAPTER B Implementation of Operations; Transport, The Invention Registration Number: TR2018 02883 B , Standard Registration, 2023

Mobility Activity

Post Doc, Post Doc, The University of Nottingham, England, 2018 - 2020
Erasmus Programme, Lecturing, Universidade da Coruna, Spain, 2014 - 2014

Metrics

Publication: 22
Citation (WoS): 54
Citation (Scopus): 87
H-Index (WoS): 4
H-Index (Scopus): 5

Scholarships

2219 - International Postdoctoral Research Fellowship, TUBITAK, 2019 - 2020

Awards

Canakci M., Topakci M., Karayel D., Unal I., Çakır M., Yigit M., Ozdemir E., 2018 Year Atso Grow-tech Agriculture Innovation Prize, Antalya Ticaret Odası - Growtech Fuar Organizasyonu, December 2018
Canakci M., Topakci M., Karayel D., Unal I., Çakır M., 3rd Istanbul International Inventions Fair - Gold Medal, Türk Patent Ve Marka Kurumu, September 2018

Entrepreneurship Activities

Limited, Piren Teknoloji ve Mühendislik Sanayi Ticaret Limited Şirketi, 17 December 2020, Founder Owner