

Prof. HASAN KARABAY



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International Researcher IDs

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Publons / Web Of Science ResearcherID: F-7672-2018

Yoksis Researcher ID: 25462

Education Information

Doctorate, University of Bath, United Kingdom 1994 - 1998

Postgraduate, Karadeniz Technical University, Fen Bilimleri Enstitüsü, Turkey 1988 - 1991

Undergraduate, Karadeniz Technical University, Mühendislik Fakültesi, Makine Mühendisliği Bölümü, Turkey 1983 - 1987

Dissertations

Doctorate, Flow and heat transfer in cover-plate pre-swirl rotor-stator system, University of Bath, 1998

Postgraduate, Fındık kurutma, Karadeniz Technical University, Fen Bilimleri Enstitüsü, 1991

Research Areas

Mechanical Engineering, Energy, Thermodynamics

Academic Titles / Tasks

Professor, Kocaeli University, Mühendislik Fakültesi, Makina Mühendisliği, 2017 - Continues

Associate Professor, Kocaeli University, Mühendislik Fakültesi, Makina Mühendisliği, 2011 - 2017

Assistant Professor, Kocaeli University, Mühendislik Fakültesi, Makina Mühendisliği, 2000 - 2011

Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Cooling operation strategies in a typical neighborhood mosque: A Case study on electricity consumption, CO₂ emissions, and thermal comfort**
Yüksel A., ARICI M., Krajčák M., CİVAN M., KARABAY H.
Energy and Buildings, vol.310, 2024 (SCI-Expanded)
- II. **Thermal interaction between water and liquid paraffin wax inside an intertwined enclosure: The**

role of natural convection in design of latent heat storage units

YILDIZ Ç., Seçilmiş M., ARICI M., Krajčík M., Shahsavari A., Ye W., KARABAY H.

Thermal Science and Engineering Progress, vol.47, 2024 (SCI-Expanded)

- III. **An experimental study on a solar-assisted heat pump incorporated with PCM based thermal energy storage unit**
YILDIZ Ç., Seçilmiş M., ARICI M., Mert M. S., Nižetić S., KARABAY H.
ENERGY, vol.278, 2023 (SCI-Expanded)
- IV. **Developing a strategy to reduce energy consumption and CO₂ emissions from underfloor heating systems in mosques: A case study of a typical neighbourhood mosque**
Yuksel A., Arıcı M., Krajcik M., Civan M., Karabay H.
ENERGY AND BUILDINGS, vol.287, 2023 (SCI-Expanded)
- V. **Taguchi optimization of automotive radiator cooling with nanofluids**
YILDIZ Ç., Kaptan C., ARICI M., BAYNAL K., KARABAY H.
EUROPEAN PHYSICAL JOURNAL-SPECIAL TOPICS, vol.231, no.13-14, pp.2801-2819, 2022 (SCI-Expanded)
- VI. **Energy saving and CO₂ reduction potential of external building walls containing two layers of phase change material**
ARICI M., Bilgin F., Krajcik M., Nizetic S., KARABAY H.
ENERGY, vol.252, 2022 (SCI-Expanded)
- VII. **Energy consumption, thermal comfort, and indoor air quality in mosques: Impact of Covid-19 measures**
Yuksel A., Arıcı M., Krajcik M., Civan M., Karabay H.
JOURNAL OF CLEANER PRODUCTION, vol.354, 2022 (SCI-Expanded)
- VIII. **Natural convection of nanofluid in a U-shaped enclosure emphasizing on the effect of cold rib dimensions**
Yıldız Ç., Arıcı M., Karabay H., Bennacer R.
Journal of Thermal Analysis and Calorimetry, vol.146, no.2, pp.801-811, 2021 (SCI-Expanded)
- IX. **A review on thermal comfort, indoor air quality and energy consumption in temples**
Yüksel A., Arıcı M., Krajčík M., Civan M., Karabay H.
JOURNAL OF BUILDING ENGINEERING, vol.35, 2021 (SCI-Expanded)
- X. **EXCHANGE CHARACTERISTICS OF AN ANTHROPOGENICALLY MODIFIED LAGOON: AN EULERIAN-LAGRANGIAN MODELING CASE STUDY WITH AN EMPHASIS ON THE NUMBER OF PARTICLES**
Tansel Büyükçelebi B., KARABAY H., Bilgili A.
JOURNAL OF ENVIRONMENTAL ENGINEERING AND LANDSCAPE MANAGEMENT, vol.29, no.3, pp.251-262, 2021 (SCI-Expanded)
- XI. **Is the thermal transmittance of air-filled inclined multi-glazing windows similar to that of vertical ones?**
Arıcı M., Tükel M., Yıldız Ç., Li D., Karabay H.
ENERGY AND BUILDINGS, vol.229, 2020 (SCI-Expanded)
- XII. **Thermal performance based optimization of an office wall containing PCM under intermittent cooling operation**
Tuncbilek E., ARICI M., Krajcik M., Nizetic S., KARABAY H.
Applied Thermal Engineering, vol.179, 2020 (SCI-Expanded)
- XIII. **PCM integrated to external building walls: An optimization study on maximum activation of latent heat**
Arıcı M., Bilgin F., Nizetic S., Karabay H.
APPLIED THERMAL ENGINEERING, vol.165, 2020 (SCI-Expanded)
- XIV. **Experimental investigation of thermal comfort and CO₂ concentration in mosques: A case study in warm temperate climate of Yalova, Turkey**
Yuksel A., Arıcı M., Krajcik M., Karabay H.
SUSTAINABLE CITIES AND SOCIETY, vol.52, 2020 (SCI-Expanded)
- XV. **Comparison of a theoretical and experimental thermal conductivity model on the heat transfer**

performance of Al₂O₃-SiO₂/water hybrid-nanofluid

Yıldız Ç., Arıcı M., Karabay H.

INTERNATIONAL JOURNAL OF HEAT AND MASS TRANSFER, vol.140, pp.598-605, 2019 (SCI-Expanded)

- XVI. **Effect of inclination angle on natural convection of nanofluids in a U-shaped cavity**
Yıldız Ç., Arıcı M., Karabay H.
International Journal of Environmental Science and Technology, vol.16, no.9, pp.5289-5294, 2019 (SCI-Expanded)
- XVII. **Analysis of fluid flow and heat transfer characteristics in multiple glazing roofs with a special emphasis on the thermal performance**
TÜKEL M., MUMCUOĞLU K., ARICI M., KARABAY H.
APPLIED THERMAL ENGINEERING, vol.148, pp.694-703, 2019 (SCI-Expanded)
- XVIII. **Investigation on the melting process of phase change material in a square cavity with a single fin attached at the center of the heated wall?**
Arıcı M., Tutuncu E., Karabay H., Campo A.
EPJ Applied Physics, vol.83, 2018 (SCI-Expanded)
- XIX. **MIXED CONVECTION FLOW OF Al₂O₃-WATER NANOFLUID IN A TWO-SIDED LID-DRIVEN CAVITY WITH WAVY WALLS**
KARABAY H.
HEAT TRANSFER RESEARCH, vol.49, no.2, pp.91-102, 2018 (SCI-Expanded)
- XX. **Melting of nanoparticle-enhanced paraffin wax in a rectangular enclosure with partially active walls**
Arıcı M., Tutuncu E., Kan M., Karabay H.
INTERNATIONAL JOURNAL OF HEAT AND MASS TRANSFER, vol.104, pp.7-17, 2017 (SCI-Expanded)
- XXI. **Investigation of heat insulation performance of hollow clay bricks filled with perlite**
Arıcı M., Yılmaz B., Karabay H.
Acta Physica Polonica A, vol.130, pp.266-268, 2016 (SCI-Expanded)
- XXII. **Thermal analysis of bipolar microelectronic devices**
AYDEMİR M., ARICI M., KARABAY H.
HIGH TEMPERATURES-HIGH PRESSURES, vol.45, no.2, pp.155-161, 2016 (SCI-Expanded)
- XXIII. **Flow and heat transfer in double, triple and quadruple pane windows**
ARICI M., KARABAY H., KAN M.
ENERGY AND BUILDINGS, vol.86, pp.394-402, 2015 (SCI-Expanded)
- XXIV. **Effect of aspect ratio on natural convection in a cavity with wavy walls**
Arıcı M., Kan M., Karabay H.
Acta Physica Polonica A, vol.128, pp.197-200, 2015 (SCI-Expanded)
- XXV. **A numerical investigation of fluid flow and heat transfer inside a room for floor heating and wall heating systems**
KARABAY H., ARICI M., SANDIK M.
ENERGY AND BUILDINGS, vol.67, pp.471-478, 2013 (SCI-Expanded)
- XXVI. **Multiple pane window applications in various climatic regions of Turkey**
KARABAY H., ARICI M.
ENERGY AND BUILDINGS, vol.45, pp.67-71, 2012 (SCI-Expanded)
- XXVII. **Experimental investigation of inclined liquid water jet flow onto vertically located superhydrophobic surfaces**
Kibar A., Karabay H., Yiğit K. S., Ucar I. O., Erbil H. Y.
EXPERIMENTS IN FLUIDS, vol.49, no.5, pp.1135-1145, 2010 (SCI-Expanded)
- XXVIII. **Determination of optimum thickness of double-glazed windows for the climatic regions of Turkey**
Arıcı M., Karabay H.
ENERGY AND BUILDINGS, vol.42, pp.1773-1778, 2010 (SCI-Expanded)
- XXIX. **The thermo-economic optimization of hot-water piping systems: A parametric study of the effect of the system conditions**
Karabay H.
STROJNISKI VESTNIK-JOURNAL OF MECHANICAL ENGINEERING, vol.53, no.9, pp.548-555, 2007 (SCI-Expanded)

- XXX. **Thermo-economic optimization of hot water piping systems: A comparison study**
Ozturk İ. T., Karabay H., Bilgen E.
ENERGY, vol.31, no.12, pp.2094-2107, 2006 (SCI-Expanded)
- XXXI. **Predictions of effect of swirl on flow and heat transfer in a rotating cavity**
Karabay H., Wilson M., Owen J.
INTERNATIONAL JOURNAL OF HEAT AND FLUID FLOW, vol.22, no.2, pp.143-155, 2001 (SCI-Expanded)
- XXXII. **Performance of pre-swirl rotating-disc systems**
Karabay H., Pilbrow R., Wilson M., Owen J.
JOURNAL OF ENGINEERING FOR GAS TURBINES AND POWER-TRANSACTIONS OF THE ASME, vol.122, no.3, pp.442-450, 2000 (SCI-Expanded)
- XXXIII. **Heat transfer in a "cover-plate" preswirl rotating-disk system**
Pilbrow R., Karabay H., Wilson M., Owen J.
JOURNAL OF TURBOMACHINERY-TRANSACTIONS OF THE ASME, vol.121, no.2, pp.249-256, 1999 (SCI-Expanded)
- XXXIV. **Flow in a "cover-plate" preswirl rotor-stator system - Authors' closure**
Karabay H., Chen J., Pilbrow R., Wilson M., Owen J.
JOURNAL OF TURBOMACHINERY-TRANSACTIONS OF THE ASME, vol.121, no.1, pp.166, 1999 (SCI-Expanded)
- XXXV. **Flow in a "cover-plate" preswirl rotor-stator system**
Karabay H., Chen J., Pilbrow R., Wilson M., Owen J.
JOURNAL OF TURBOMACHINERY-TRANSACTIONS OF THE ASME, vol.121, no.1, pp.160-166, 1999 (SCI-Expanded)

Articles Published in Other Journals

- I. **Hidrodinamik Yapılı Numune Üzerine Etkiyen Sürüklenme Kuvvetlerinin Sayısal ve Deneysel Olarak İncelenmesi**
VONAL M., KARABAY H.
Kocaeli Üniversitesi Fen Bilimleri Dergisi, vol.7, 2024 (Peer-Reviewed Journal)
- II. **Termoplastik Film Mühürleme Aparatının Deneysel Yöntemle İncelenmesi**
Bayram M., Sarı C., Kesmen B., Ulusoy Ç., Karabay H.
Kocaeli Journal of Science and Engineering, vol.6, no.1, pp.1-5, 2023 (Peer-Reviewed Journal)
- III. **Comparison of thermal response times of historical and modern building wall materials**
Yüksel A., ARICI M., KARABAY H.
Journal of Thermal Engineering, vol.7, no.6, pp.1506-1518, 2021 (ESCI)
- IV. **Mixed convection heat transfer of nanofluids in a trapezoidal cavity having an adiabatic square body at its center**
Arıcı M., Kaptan Ç., Karabay H.
Research on Engineering Structures and Materials, vol.28, no.5, pp.359-366, 2017 (Peer-Reviewed Journal)
- V. **Konik Halka Yüzeyleli Türbülötör İçeren Kazanın Termodinamiğin İkinci Yasasına Göre Analizi**
DEMİRTAŞ C., KARABAY H., AYHAN T.
ISI BİLİMİ VE TEKNİĞİ DERGİSİ/ JOURNAL OF THERMAL SCIENCE AND TECHNOLOGY, vol.16, no.1, pp.36-42, 1993 (Peer-Reviewed Journal)

Papers Published in Refereed Scientific Meetings

- I. **Investigation of Electricity Consumption and CO₂ Emissions from Cooling System Operation Strategies in Mosques**
Yüksel A., ARICI M., Krajčič M., CİVAN M., KARABAY H.
8th International Conference on Smart and Sustainable Technologies, SpliTech 2023, Hybrid, Split/Bol, Croatia, 20 - 23 June 2023
- II. **Natural convective heat transfer interrelation between water and melted paraffin-wax in an**

intertwined enclosure

YILDIZ Ç., SEÇİLMİŞ M., ARICI M., Krajčik M., KARABAY H.

7th International Conference on Smart and Sustainable Technologies (SpliTech) 2022, Split, Croatia, 5 - 08 July 2022

- III. **DÜŞÜK REYNOLDS SAYILI AKIŞLARDA SÜPERHİDROFOBİK KAPLAMA İLE SÜRÜKLEME KUVVETİNDEKİ DEĞİŞİM**
karaaslan r., vonal m., KARABAY H.
Uluslararası Marmara Fen bilimleri kongresi, Kocaeli, Turkey, 13 May 2022, pp.530-537
- IV. **Reduction of Natural Gas Consumption by Establishing Operation Strategies of Heating Systems in Mosques**
Yuksel A., ARICI M., Krajcik M., CİVAN M., KARABAY H.
7th International Conference on Smart and Sustainable Technologies, SpliTech 2022, Split, Croatia, 5 - 08 July 2022
- V. **Tarihi ve Modern Binalarda Duvar Yapılarının Isıl Performansa Etkileri**
YÜKSEL A., ARICI M., KARABAY H.
22. ISI BİLİMİ VE TEKNİĞİ KONGRESİ, Kocaeli, Turkey, 11 - 14 September 2019
- VI. **Constructal Theory and Its Recent Applications**
ÇETKİN E., KARABAY H.
22nd Congress on Thermal Science and Technology (CTST 2019), Kocaeli, Turkey, 11 - 13 September 2019
- VII. **Investigation of Effect of Window-to-Wall Ratio on the Indoor Air Temperature by Lumped Capacitance Approach**
Yuksel A., ARICI M., KARABAY H.
4th International Conference on Smart and Sustainable Technologies (SpliTech), Croatia, 18 - 21 June 2019, pp.414-419
- VIII. **A discussion on estimating overall heat transfer coefficient for composite walls**
KANDIRA U. E., ARICI M., KARABAY H.
5th International Conference on Computational and Experimental Science and Engineering, 12-16 October 2018, Antalya, Turkey, 12 - 16 October 2018
- IX. **Numerical Investigation of natural convection in a U-shaped cavity filled with nanofluids**
YILDIZ Ç., ARICI M., KARABAY H.
5th International Conference on Computational and Experimental Science and Engineering, 12-16 October 2018, Antalya, Turkey, 12 - 16 October 2018
- X. **Effect of inclination angle on natural convection of nanofluids in a U-shaped cavity**
YILDIZ Ç., ARICI M., KARABAY H.
5th International Conference on Computational and Experimental Science and Engineering, 12-16 October 2018, Antalya, Turkey, 12 - 16 October 2018
- XI. **SÜPERİSLANMAZ YÜZEY ÜZERİNE GÖNDERİLEN DAMLANIN ZIPLAMA DAVRANIŞI**
Vonal M., Kibar A., Karabay H.
4. Uluslararası Katılımlı Anadolu Enerji Sempozyumu (AES 2018), Edirne, Turkey, 18 - 20 April 2018, pp.2082-2089
- XII. **CFD Analysis of Melting Process in an Enclosure: Effect of Fin and Nanoparticle on the Melting Rate**
ARICI M., Tütüncü E., KARABAY H.
3rd International Conference on Smart and Sustainable Technologies, 26-29 June 2018, Split, Croatia, 26 - 29 June 2018
- XIII. **Prediction of Optimum Cooling Performance Improvement for Car Radiator Applications**
KAPTAN Ç., ARICI M., BAYNAL K., KARABAY H.
International Conference on Progresses in Automotive Technologies, 10-12 May 2018, Istanbul, Turkey, 10 - 12 May 2018
- XIV. **Numerical Investigation of the Integration of Phase Change Material on Solar Domestic Hot Water System**
ŞİŞMAN S., ARICI M., SEÇİLMİŞ M., KARABAY H.
8th International 100 Renewable Energy Conference, 7-9 May 2018, Istanbul, Turkey, 07 May 2018 - 09 May 2019

- XV. **Determination of Economically Advantageous Locations for Optimum Insulation Thickness in Turkey Considering Heating and Cooling Loads Together**
TÜKEL M., ARICI M., KARABAY H.
4th Anatolian Energy Symposium with International Participation, 4th Anatolian Energy Symposium, Edirne, Turkey, 18 - 20 April 2018
- XVI. **SOĞUK AKIŞKANLI SÜPERSONİK EJEKTÖRLERİN PERFORMANSININ İYİLEŞTİRİLMESİ**
GÜLYÜZ V., SARMAN M. C., KARABAY H.
4. Uluslararası Katılımlı Anadolu Enerji Sempozyumu, Edirne, Turkey, 18 - 20 April 2018, vol.2, pp.819-829
- XVII. **DROPLET IMPACT ON SLIPPERY AND STICKY SUPERHYDROPHOBIC SURFACE**
Karabay H., Kibar A., Vonal M.
International Conference on Engineering Technologies (ICENTE'17), Konya, Turkey, 7 - 09 December 2017, pp.102
- XVIII. **Investigation on the melting process of PCM in a square cavity with a fin attached at the heated wall**
ARICI M., TÜTÜNCÜ E., KARABAY H., CAMPO A.
International Conference on Materials Energy, 6 - 09 July 2017
- XIX. **CFD Analysis of Flow and Heat Transfer in an Inclined Double Glazing Window**
mumcuoğlu k., ARICI M., KARABAY H., kan m.
ENTECH '16 / IV. International Energy Technologies Conference, 15 December 2016
- XX. **Numerical Investigation on Mixed Convection of Nanofluids in a Trapezoidal Cavity with Adiabatic Square Block at Center**
kaptan ç., ARICI M., KARABAY H.
8th International Ege Energy Symposium, 11 - 13 May 2016
- XXI. **THERMAL PERFORMANCE OF A MULTI HOLED BRICK CONSIDERING DIFFERENT HOLE SHAPES AND HOLE ARRANGEMENTS**
Uludaş M. Ç., Arıcı M., Karabay H.
3rd International Conference on Thermophysical and Mechanical Properties of Advanced Materials, İzmir, Turkey, 1 - 03 September 2016
- XXII. **Investigation of Heat Insulation Performance of Hollow Clay Bricks Filled With Perlite**
ARICI M., Batuhan Y., KARABAY H.
2nd International Conference on Computational and Experimental Science and Engineering, 14 - 19 October 2015
- XXIII. **Investigation of melting of nanoparticle enhanced phase change materials**
ARICI M., mirac k., KARABAY H., Ensar T.
ANOTECHNOLOGY and NANOMATERIALS NANO, 26 - 29 August 2015
- XXIV. **PERFORMANCE AND EMISSIONS OF A MICRO-TURBINE FUELED WITH JP8-CANOLA BIODIESEL MIXTURES**
DÜLGER Z., ASLAN S., ARICI M., CATORI C., KARABAY H., POLAT N., AKSİT İ. M., SARAÇ H. İ., GOKALP B.
ASME Turbo Expo: Turbine Technical Conference and Exposition, Düsseldorf, Germany, 16 - 20 June 2014
- XXV. **İÇ CİDARI ISLANMAZ MALZEME İLE KAPLI DAİRESEL BİR BORU İÇİNDEN GEÇEN SUYUN LİMANER BÖLGEDEKİ BASINÇ DÜŞÜMÜNÜN TEORİK ve DENEYSEL İNCELENMESİ**
Kibar A., Karabay H., Yiğit K. S., Orkan Uçar İ., Erbil H. Y.
IV Ege Enerji Sempozyumu, İzmir, Turkey, 23 - 25 April 2008

Supported Projects

KARABAY H., TUBITAK Project, KAĞIT HAVLU MAKİNELERİNİN MODERNİZASYONU İÇİN VAKUM SİSTEMİNİN SAYISAL VE DENEYSEL OLARAK İNCELENEREK YENİDEN TASARLANMASI, 2022 - 2023

KARABAY H., Project Supported by Higher Education Institutions, Süperhidrofobik-Hidrofilik Yivli Hibrit Yüzeylerin Viskoz Direnci Azaltabilme Kabiliyetinin Belirlenmesi, 2019 - 2020

KARABAY H., ARICI M., Industrial Thesis Project, Ev tipi buzdolabı dondurucu bölmesinde homojen sıcaklık dağılımı sağlayacak hava yönlendirici tasarımı, 2014 - 2015

Metrics

Publication: 65

Citation (WoS): 1322

Citation (Scopus): 1555

H-Index (WoS): 19

H-Index (Scopus): 20

Non Academic Experience

kocaeli üniversitesi, öđr.üyesi

karadeniz teknik üniversitesi, arař.gör