

## Prof. HASAN KARABAY

### Personal Information

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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-ststor 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

- Cooling operation strategies in a typical neighborhood mosque: A Case study on electricity consumption, CO2 emissions, and thermal comfort**  
Yüksel A., ARICI M., Krajčık M., CÍVAN M., KARABAY H.  
Energy and Buildings, vol.310, 2024 (SCI-Expanded)
- 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., Krajčık M., Shahsavar 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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 Al<sub>2</sub>O<sub>3</sub>-SiO<sub>2</sub>/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 Al<sub>2</sub>O<sub>3</sub>-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**  
Arici 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**  
Arici 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. **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)
- II. **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)
- III. **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)

## Refereed Congress / Symposium Publications in Proceedings

- I. **Investigation of Electricity Consumption and CO<sub>2</sub> Emissions from Cooling System Operation Strategies in Mosques**  
Yüksel A., ARICI M., Krajčik 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**  
Yüksel 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., TTNC 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**  
mumcuođlu 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 ., ARICI M., KARABAY H.  
8th International Ege Energy Syposium, 11 - 13 May 2016
- XXI. **THERMAL PERFORMANCE OF A MULTI HOLED BRICK CONSIDERING DIFFERENT HOLE SHAPES AND HOLE ARRANGEMENTS**  
Uludađ M. ., 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**  
DLGER Z., ASLAN S., ARICI M., CATORI C., KARABAY H., POLAT N., AKSIT I. M., SARA H. İ., GOKALP B.  
ASME Turbo Expo: Turbine Technical Conference and Exposition, Dsseldorf, Germany, 16 - 20 June 2014
- XXV. **İ CİDARI ISLANMAZ MALZEME İLE KAPLI DAİRESEL BİR BORU İİNDEN GEEN SUYUN LİMANER BLGEDEKİ BASIN DŐMNN TEORİK ve DENEYSEL İNCELENMESİ**  
Kıbar A., Karabay H., Yiđit K. S., Orkan Uar İ., Erbil H. Y.  
IV Ege Enerji Sempozyumu, İzmir, Turkey, 23 - 25 April 2008

## Supported Projects

KARABAY H., TUBITAK Project, KAđIT HAVLU MAKİNELERİNİN MODERNİZASYONU İİN VAKUM SİSTEMİNİN SAYISAL VE DENEYSEL OLARAK İNCELENEREK YENİDEN TASARLANMASI, 2022 - 2023

KARABAY H., Project Supported by Higher Education Institutions, Sperhidrofobik-Hidrofilik Yivli Hibrit Yzeylerin Viskoz Direnci Azaltabilme Kabiliyetinin Belirlenmesi, 2019 - 2020

KARABAY H., ARICI M., Industrial Thesis Project, Ev tipi buzdolabı dondurucu blmesinde homojen sıcaklık dađılımı sađlayacak hava ynlendirici tasarımı, 2014 - 2015

## Metrics

Publication: 63

Citation (WoS): 1290

Citation (Scopus): 1524

H-Index (WoS): 19

H-Index (Scopus): 19

## Non Academic Experience

kocaeli üniversitesi

karadeniz teknik üniversitesi