

## Asst. Prof. Hatice MERCAN

### Personal Information

**Email:** hmercan@yildiz.edu.tr

**Web:** <https://avesis.yildiz.edu.tr/hmercan>

### International Researcher IDs

ScholarID: xoXcyU0AAAAJ

ORCID: 0000-0002-3445-3441

Publons / Web Of Science ResearcherID: ISU-9109-2023

ScopusID: 23973468200

Yoksis Researcher ID: 147000

### Education Information

Doctorate, Bogazici University, Faculty Of Engineering, Makina Muhendisligi, Turkey 2006 - 2012

Postgraduate, Bogazici University, Faculty Of Engineering, Makina Muhendisligi, Turkey 2003 - 2006

### Dissertations

Doctorate, Numerical investigation of isothermal and non-isothermal viscoelastic flow in lid-driven polar cavity , Boğaziçi Üniversitesi, Makina Muhendisligi, Makina Muhendisligi, 2012

Postgraduate, Numerical analysis of newtonian and non-newtonian lid-driven cavity flow in plane and curved geometries, Boğaziçi Üniversitesi, Makina Muhendisligi, Makina Muhendisligi, 2006

### Research Areas

Mechanical Engineering, Thermodynamics, Computational fluid dynamics, Engineering and Technology

### Academic Titles / Tasks

Assistant Professor, Yildiz Technical University, Faculty Of Mechanical Engineering, Department Of Mechatronics Engineering, 2018 - Continues

Assistant Professor, Yildiz Technical University, Faculty Of Mechanical Engineering, Department Of Mechatronics Engineering, 2015 - 2018

### Courses

Seminer, Postgraduate, 2021 - 2022, 2020 - 2021, 2019 - 2020, 2018 - 2019

Seminer, Doctorate, 2022 - 2023, 2021 - 2022, 2020 - 2021, 2019 - 2020

Thermodynamics, Undergraduate, 2021 - 2022, 2020 - 2021, 2019 - 2020, 2018 - 2019, 2017 - 2018, 2016 - 2017, 2015 - 2016

Engineering Mechanics 1, Undergraduate, 2022 - 2023, 2015 - 2016

Statistics, Probability and Experimental Methods in Mechatronics Engineering, Postgraduate, 2021 - 2022

Fluid Mechanics and Heat Transfer , Undergraduate, 2021 - 2022, 2020 - 2021, 2019 - 2020, 2018 - 2019, 2017 - 2018, 2016 - 2017, 2015 - 2016  
Mathematics 2, Doctorate, 2021 - 2022, 2020 - 2021, 2019 - 2020, 2018 - 2019, 2017 - 2018, 2016 - 2017  
Probability and Statistics, Undergraduate, 2020 - 2021, 2019 - 2020, 2018 - 2019, 2017 - 2018, 2016 - 2017  
Finite Elements, Postgraduate, 2018 - 2019, 2017 - 2018  
Fluid Mechanics 1, Undergraduate, 2016 - 2017, 2015 - 2016  
Thermodynamics 1, Undergraduate, 2015 - 2016, 2014 - 2015  
Material Science, Undergraduate, 2014 - 2015

## Advising Theses

Dalkılıç A. S., Mercan H., Helezon borulu ısı deęiřtiricilerinin optimizasyonu, Postgraduate, D.AKGÜL(Student), 2021

## Jury Memberships

PhD Thesis Monitoring Committee Member, PhD Thesis Monitoring Committee Member, Yıldız Teknik Üniversitesi, November, 2022

PhD Thesis Monitoring Committee Member, PhD Thesis Monitoring Committee Member, Yıldız Teknik Üniversitesi, November, 2022

Doctoral Examination, Doctoral Examination, Boęaziçi Üniversitesi, August, 2021

Doctoral Examination, Doctoral Examination, Boęaziçi Üniversitesi, August, 2021

Doctoral Examination, Doctoral Examination, Boęaziçi Üniversitesi, December, 2019

Post Graduate, Post Graduate, İstanbul Teknik Üniversitesi, October, 2019

Post Graduate, Post Graduate, Yıldız Teknik Üniversitesi, September, 2019

Post Graduate, Post Graduate, Boęaziçi Üniversitesi, July, 2019

Post Graduate, Post Graduate, Boęaziçi Üniversitesi, July, 2019

Post Graduate, Post Graduate, Boęaziçi Üniversitesi, July, 2019

Post Graduate, Post Graduate, Boęaziçi Üniversitesi, July, 2019

Post Graduate, Post Graduate, Boęaziçi Üniversitesi, July, 2019

Post Graduate, Post Graduate, Boęaziçi Üniversitesi, July, 2019

Post Graduate, Post Graduate, İstanbul Teknik Üniversitesi, June, 2019

Doctoral Examination, Doctoral Examination, Boęaziçi Üniversitesi, July, 2018

Doctoral Examination, Doctoral Examination, Boęaziçi Üniversitesi, January, 2018

Doctoral Examination, Doctoral Examination, Boęaziçi Üniversitesi, January, 2018

Doctoral Examination, Doctoral Examination, Boęaziçi Üniversitesi, June, 2017

Doctoral Examination, Doctoral Examination, Boęaziçi Üniversitesi, June, 2017

Doctoral Examination, Doctoral Examination, Boęaziçi Üniversitesi, June, 2017

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

- I. **Advances in triple tube heat exchangers regarding heat transfer characteristics of single and two-phase flows in comparison to double tube heat exchangers part 2**

Akgul D., Mercan H., Acikgoz O., Dalkilic A. S.

KERNTECHNIK, vol.88, no.6, pp.1-14, 2023 (SCI-Expanded)

- II. **Advances in Triple Tube Heat Exchangers Regarding Heat Transfer Characteristics of Single and Two-Phase Flows in Comparison to Double Tube Heat Exchangers Part 1**

Akgul D., Mercan H., Acikgoz O., Dalkilic A. S.

KERNTECHNIK, vol.88, no.6, pp.1-14, 2023 (SCI-Expanded)

- III. **Prediction of nanofluid flows' optimum velocity in finned tube-in-tube heat exchangers using artificial neural network**  
Çolak A. B., Mercan H., Açıkgöz Ö., Dalkılıç A. S., Wongwises S.  
Kerntechnik, vol.88, no.1, pp.100-113, 2023 (SCI-Expanded)
- IV. **Estimation of heat transfer parameters of shell and helically coiled tube heat exchangers by machine learning**  
Çolak A. B., Akgul D., Mercan H., Dalkılıç A. S., Wongwises S.  
CASE STUDIES IN THERMAL ENGINEERING, vol.42, pp.1-12, 2023 (SCI-Expanded)
- V. **Parametric optimization of heat transfer characteristics for helical coils**  
Akgul D., Mercan H., Dalkılıç A. S.  
JOURNAL OF THERMAL ANALYSIS AND CALORIMETRY, vol.147, no.22, pp.12577-12594, 2022 (SCI-Expanded)
- VI. **Prediction of heat transfer coefficient, pressure drop, and overall cost of double-pipe heat exchangers using the artificial neural network**  
Çolak A. B., Açıkgöz Ö., Mercan H., Dalkılıç A. S., Wongwises S.  
CASE STUDIES IN THERMAL ENGINEERING, vol.39, no.November, pp.1-30, 2022 (SCI-Expanded)
- VII. **Experimental comparison of heat transfer characteristics of Enhanced Truck Radiators**  
Mercan H., Sonmez F., Dalkılıç A. S., Wongwises S.  
CASE STUDIES IN THERMAL ENGINEERING, vol.35, pp.2-13, 2022 (SCI-Expanded)
- VIII. **Determination of heat transfer rates of heavy-duty radiators for trucks having flattened and double-U grooved pipes with louvered fins by ANN method: an experimental study**  
Mercan H., Sonmez F., Çolak A. B., Dalkılıç A. S.  
European Physical Journal Plus, vol.137, no.3, pp.1-26, 2022 (SCI-Expanded)
- IX. **Experimental and Numerical Analysis of Flow over a Pick-up Truck**  
Ince I. T., Mercan H., Onur N.  
Heat Transfer Research, no.3, pp.10-20, 2021 (SCI-Expanded)
- X. **Optimization of the finned double-pipe heat exchanger using nanofluids as working fluids**  
DALKILIÇ A. S., MERCAN H., Ozcelik G., Wongwises S.  
JOURNAL OF THERMAL ANALYSIS AND CALORIMETRY, vol.143, no.2, pp.859-878, 2021 (SCI-Expanded)
- XI. **An experimental investigation on heat transfer characteristics of graphite-SiO<sub>2</sub>/water hybrid nanofluid flow in horizontal tube with various quad-channel twisted tape inserts**  
Dalkılıç A. S., Türk O. A., Mercan H., Nakkaew S., Wongwises S.  
International Communications in Heat and Mass Transfer, vol.107, pp.1-13, 2019 (SCI-Expanded)
- XII. **Isothermal and Non Isothermal Viscoelastic Flow of PTT Fluid in a Lid Driven Polar Cavity**  
MERCAN H., ATALIK S. K.  
Korea-Australia Rheology Journal, vol.24, pp.277-286, 2012 (SCI-Expanded)
- XIII. **Flow structure for Power-Law fluids in lid-driven arc-shape cavities**  
Mercan H., Atalik K.  
Korea Australia Rheology Journal, vol.23, no.2, pp.71-80, 2011 (SCI-Expanded)
- XIV. **Vortex formation in lid-driven arc-shape cavity flows at high Reynolds numbers**  
Mercan H., Atalik K.  
European Journal of Mechanics, B/Fluids, vol.28, no.1, pp.61-71, 2009 (SCI-Expanded)

## Articles Published in Other Journals

- I. **Determination of Optimum Insulation Thickness in Submarines**  
Durmaz S., Çolak A. B., Mercan H., Dalkılıç A. S.  
Journal of Thermal Engineering, vol.6, no.9, pp.1655-1666, 2023 (ESCI)
- II. **Kendinden Tahrikli Mikro Organizmaların Newtonyen Akışkan İçindeki Harketinin Sayısal Modellenmesi**  
Mercan H., Köselers T. T.

Black Sea Journal of Engineering and Science, vol.7, no.7, pp.1-7, 2023 (Peer-Reviewed Journal)

**III. Artificial Neural Network Techniques for the Determination of Condensation Nusselt Number in Horizontal Smooth Tubes**

Sevindir M. K., Gönül A., Çebi A., Mercan H.

Süleyman Demirel Üniversitesi Fen Bilimleri Enstitüsü Dergisi, vol.23, no.3, pp.871-877, 2019 (Peer-Reviewed Journal)

**IV. Numerical investigation of blood flow features in intracranial saccular aneurysms**

Mercan H., Atalik K.

Journal of Thermal Engineering, vol.4, pp.1867-1878, 2018 (ESCI)

## **Books & Book Chapters**

**I. Numerical Methods for Engineers and Scientists Using MATLAB**

Ozgoren M., Kemerli M., Mercan H., Engin T. (Editor)

Palme Yayın Dağıtım, İstanbul, 2022

**II. Thermophysical and rheological properties of unitary and hybrid nanofluids**

Mercan H., Celen A., Taner T.

in: Advances in Nanofluid Heat Transfer, Hafiz Muhammed Ali, Editor, Elsevier Science, Oxford/Amsterdam , Amsterdam, pp.95-129, 2022

**III. Mass Transfer Basics of Nanofluids**

Mercan H.

in: Nanofluids and Mass Transfer, Mohammad Reza Rahimpour, Mohammad Amin Makarem, Mohammad Reza Kiani, Mohammad Amin Sedghamiz, Editor, Elsevier Science, Oxford/Amsterdam , Amsterdam, pp.3-20, 2021

**IV. Chapter 3: Thermophysical and Rheological Properties of Hybrid Nanofluids**

Mercan H.

in: Hybrid Nanofluids for Convection Heat Transfer, Hafiz Muhammed Ali, Editor, Elsevier Science, Oxford/Amsterdam , Amsterdam, pp.125-175, 2020

## **Refereed Congress / Symposium Publications in Proceedings**

**I. ANN Analysis of Heat Exchanger Design – A numerical Approach**

Mercan H., Tanriverdi U.

ICAME, İstanbul, Turkey, 20 - 22 October 2021, pp.1544

**II. SHORT LITERATURE REVIEW ON THE BOILING HEAT TRANSFER CHARACTERISTICS OF INCLINED DOUBLE PIPE HEAT EXCHANGERS**

Server A., Altunal U., Mercan H., Dalkılıç A. S., Wongvises S.

ICAME 2021, İstanbul, Turkey, 20 - 22 October 2021, pp.1547

**III. A BRIEF LITERATURE REVIEW ON THE CONDENSATION CHARACTERISTICS OF INCLINED DOUBLE PIPE HEAT EXCHANGERS HAVING SMOOTH AND CORRUGATED TUBES**

Altunal U., Server A., Mercan H., Dalkılıç A. S., Wongvises S.

ICAME 2021, İstanbul, Turkey, 20 - 22 October 2021, pp.1550

**IV. SHORT LITERATURE SUMMARY ON THE SINGLE-PHASE FLOW HEAT TRANSFER CHARACTERISTICS OF TRIPLE PIPE HEAT EXCHANGERS**

Demirel P., Akgul D., Kesen A., Mercan H., Dalkılıç A. S., Wongvises S.

ICAME 2021, İstanbul, Turkey, 20 - 22 October 2021, pp.1546

**V. An Experimental Investigation of Liquid Jets under the Influence of Laminar Cross Airflows**

Mercan H., Nabati M., Bedir H., Anlas G.

ICAME 2021 İstanbul, İstanbul, Turkey, 20 - 22 October 2021, pp.1543

**VI. EXPERIMENTAL AND NUMERICAL INVESTIGATION OF TUNED LIQUID DAMPERS**

Mercan H., Colakoglu G.

ICAME 2019, İstanbul, Turkey, 17 - 19 December 2019, vol.1, no.1, pp.1829-1837

**VII. EXPERIMENTAL INVESTIGATION OF THE EFFECT OF SCREEN MESHES ON LONGITUDINAL TURBULENCE IN BURET WIND TUNNEL**

Nabati M., Shafiei H., MERCAN H., BEDİR H., ANLAŞ G.

4th International Conference on Advances in Mechanical Engineering 2018, İstanbul, Turkey, 19 - 21 December 2018, vol.1

**VIII. 3-Dimensional Numerical Simulation of Helical Coil Heat Exchangers**

Gönül A., Mercan H., Dalkılıç A. S.

4TH INTERNATIONAL CONFERENCE ON ADVANCES IN MECHANICAL ENGINEERING ISTANBUL 2018, İstanbul, Turkey, 19 - 21 December 2018, vol.1, pp.1097

**IX. Determination of Design Parameters Effects on the Cost of a Double-Pipe Heat Exchanger**

Dalkılıç A. S., Mercan H., Özçelik G.

3rd INTERNATIONAL CONFERENCE ON ADVANCES IN MECHANICAL ENGINEERING ISTANBUL 2017, İstanbul, Turkey, 19 - 21 December 2017, pp.1-15

**X. SAKKÜLER ANEVİRİZMANIN 2 BOYUTLU SAYISAL MODELLEMESİ- DUVAR KAYMA GERİLMESİ ANALİZİ**

ATALIK S. K., MERCAN H.

20. Ulusal Mekanik Kongresi, Bursa, Turkey, 5 - 09 September 2017

**XI. Numerical Simulation of 3 D Film Blowing Process Under Thermal and Crystallinity Effects**

MERCAN H.

NRC-NPD-2016, 30 May - 01 June 2016

**XII. DÖKME POLİMER İNCE TABAKALARININ ÜRETİM SÜRECİNİN KRİSTALİZASYON VE ISIL ETKİLER ALTINDA SAYISAL İNCELENMESİ**

MERCAN H.

19. Ulusal Mekanik Kongresi, Trabzon, Turkey, 24 - 28 August 2015

**XIII. Small and Large Amplitude Oscillatory Shear Response in Non Isothermal Flow of a PTT Fluid in Lid Driven Polar Cavity**

MERCAN H., ATALIK S. K.

21. Nordic Rheology Conference, Oslo, Norway, 13 - 15 June 2012, vol.20, pp.105-112

**XIV. Flow Induced Cryatllization of Film Blowing Process**

MERCAN H., PETERS G. W. M., ANDERSON P.

8th Annual European Rheology conference, Leuven, Belgium, 2 - 05 April 2013

**XV. Isothermal and non Isothermal Flow of PTT Fluid in Lid Driven Polar Cavity**

MERCAN H., ATALIK S. K.

20 th Nordic Rheology Conference, Helsinki, Finland, 8 - 10 June 2011, vol.19, pp.53-60

**XVI. Üs Kanun Akışkanları için Yarım Daire Biçimli Eğrisel Oyuklarda Kapak Tahrikli Akış Yapısı**

MERCAN H., ATALIK S. K.

16. Ulusal Mekanik Kongresi, Kayseri, Turkey, 22 - 26 June 2009, pp.863-873

**XVII. Kapak Tahrikli Eğrisel Oyuk Akışlarında Yüksek Reynolds Sayıları için Girdap Oluşumu ve Gelişimi**

MERCAN H., ATALIK S. K.

15. Ulusal Mekanik Kongresi, Isparta, Turkey, 3 - 07 September 2007, pp.605-615

## Supported Projects

MERCAN H., BEDİR H., ANLAŞ G., NABATİ M., Project Supported by Higher Education Institutions, Su Püskürtmeli Buharlaşmalı Soğutucu Sistemlerin Deneysel İncelenmesi, 2018 - 2021

MERCAN H., Other International Funding Programs, Numerical Investigation of crystallinity of polymer melts, 2012 - 2015

## **Activities in Scientific Journals**

SIGMA JOURNAL OF ENGINEERING AND NATURAL SCIENCES, Committee Member, 2022 - Continues

Journal of Thermal Sciences, Assistant Editor/Section Editor, 2019 - 2022

## **Scientific Refereeing**

PROCEEDINGS OF THE INSTITUTION OF MECHANICAL ENGINEERS, PART D: JOURNAL OF AUTOMOBILE ENGINEERING,  
SCI Journal, April 2023

Journal of Thermal Analysis and Calorimetry, SCI Journal, May 2020

## **Metrics**

Publication: 40

Citation (WoS): 21

Citation (Scopus): 139

H-Index (WoS): 2

H-Index (Scopus): 5

## **Congress and Symposium Activities**

ICAME 2019, Moderator, İstanbul, Turkey, 2019

ICAME 2018, Moderator, İstanbul, Turkey, 2018

## **Non Academic Experience**

Eindhoven Teknoloji Üniversitesi

Eindhoven Teknoloji Üniversitesi