

Asst. Prof. MEHMED RAFET ÖZDEMİR

Personal Information

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Biography

Dr. Mehmed Rafet Özdemir was born in Istanbul. He received his high school education at Çapa Anatolian Teacher High School. After receiving his undergraduate degree from Marmara University, Faculty of Engineering, Mechanical Engineering Department, he received his master's degree from Sabancı University Mechatronics Engineering Department and his PhD degree from Brunel University London Mechanical Engineering Department in 2010 and 2016. His research interests include micro/nano scale heat transfer, boiling heat transfer, microfluidic systems, phase change materials and heat transfer improvements. He has published articles in prestigious journals in his field; these articles have been cited more than 200 times. He received "best article" and "best presentation" awards from the conferences he attended. Dr. Özdemir also serves as a reviewer for prestigious SCI and SCI-E journals.

Education Information

Under Graduate, Anadolu University, Faculty Of Open University, İşletme, Turkey 2004 - 2020

Doctorate, Brunel University, College Of Engineering, Design And Physical Sciences, Mechanical Engineering, United Kingdom 2012 - 2016

Post Graduate, Sabancı Üniversitesi, Fen Bilimleri Enstitüsü, Mekatronik Mühendisliği (YI) (Tezli), Turkey 2008 - 2010

Under Graduate, Marmara University, Faculty of Engineering, Mechanical Engineering, Turkey 2004 - 2008

Foreign Languages

Arabic, A2 Elementary

English, C2 Proficiency

Spanish, B1 Intermediate

Dissertations

Doctorate, SINGLE – PHASE FLOW AND FLOW BOILING OF WATER IN RECTANGULAR METALLIC MICROCHANNELS, Brunel University, College Of Engineering, Design And Physical Sciences, 2016

Post Graduate, EXPERIMENTAL STUDY ON SINGLE PHASE FLOW AND BOILING HEAT TRANSFER IN MICROCHANNELS AT HIGH FLOW RATES, Sabancı Üniversitesi, Fen Bilimleri Enstitüsü, Mekatronik Mühendisliği (YI) (Tezli), 2010

Research Areas

Mechanical Engineering, Energy, Fluid Mechanics, Fluid Machinery, Renewable Energy Systems, Alternative Energy Resources, Energy storage technologies, Heat and Mass Transfer, Fuels and Combustion, Heating, Refrigerating and Air

Academic Titles / Tasks

Assistant Professor, Marmara University, Faculty of Engineering, Mechanical Engineering, 2017 - Continues

Research Assistant, Marmara University, Faculty of Engineering, Mechanical Engineering, 2009 - 2017

Professional Experience

Deputy Head of Department, Marmara University, Faculty of Engineering, Mechanical Engineering, 2018 - Continues

Jury Memberships

Post Graduate, Post Graduate, Gebze Teknik Üniversitesi, February, 2020

Post Graduate, Post Graduate, Yıldız Teknik Üniversitesi, January, 2020

Articles Published in Journals That Entered SCI, SSCI and AHCI Indexes

- I. **Design and implementation of minichannel evaporator for electronics cooling**
Sokucu M. H., ÖZDEMİR M. R.
JOURNAL OF THERMAL ANALYSIS AND CALORIMETRY, 2021 (Journal Indexed in SCI)
- II. **Pool boiling heat transfer of ferrofluids on structured hydrophilic and hydrophobic surfaces: The effect of magnetic field**
Sadaghiani A., Rajabnia H., Çelik S., Noh H., Kwak H., Nejatpour M., Park H., Acar H., Mısırlıoğlu B., ÖZDEMİR M. R., et al.
International Journal of Thermal Sciences, vol.155, 2020 (Journal Indexed in SCI)
- III. **EXERGY ANALYSIS OF MICROCHANNEL HEAT EXCHANGERS**
ÖZDEMİR M. R.
International Journal Of Exergy, vol.32, pp.249-266, 2020 (Journal Indexed in SCI)
- IV. **Flow Boiling of Water in a Rectangular Metallic Microchannel**
ÖZDEMİR M. R., Mahmoud M. M., Karayiannis T. G.
HEAT TRANSFER ENGINEERING, 2020 (Journal Indexed in SCI)
- V. **Combustion performance of hydrogen-enriched fuels in a premixed burner**
YANGAZ M. U., ÖZDEMİR M. R., ŞENER R.
ENVIRONMENTAL TECHNOLOGY, 2019 (Journal Indexed in SCI)
- VI. **Influence of piston bowl geometry on combustion and emission characteristics**
ŞENER R., ÖZDEMİR M. R., YANGAZ M. U.
PROCEEDINGS OF THE INSTITUTION OF MECHANICAL ENGINEERS PART A-JOURNAL OF POWER AND ENERGY, vol.233, pp.576-587, 2019 (Journal Indexed in SCI)
- VII. **Experimental studies on ferrofluid pool boiling in the presence of external magnetic force**
ÖZDEMİR M. R., Sadaghiani A. K., Motezakker A. R., Parapari S. S., Park H. S., Acar H. Y., KOŞAR A.
APPLIED THERMAL ENGINEERING, vol.139, pp.598-608, 2018 (Journal Indexed in SCI)
- VIII. **Single phase flow pressure drop and heat transfer in rectangular metallic microchannels**
Sahar A. M., Ozdemir M. R., Fayyadh E. M., Wissink J., Mahmoud M. M., Karayiannis T. G.
APPLIED THERMAL ENGINEERING, vol.93, pp.1324-1336, 2016 (Journal Indexed in SCI)
- IX. **The effects of inlet restriction and tube size on boiling instabilities and detection of resulting premature critical heat flux in microtubes using data analysis**
Kaya A., Ozdemir M. R., Keskinöz M., Kosar A.

APPLIED THERMAL ENGINEERING, vol.65, pp.575-587, 2014 (Journal Indexed in SCI)

- X. **Thermally Developing Single-Phase Flows in Microtubes**
Ozdemir M. R. , Kosar A.
JOURNAL OF HEAT TRANSFER-TRANSACTIONS OF THE ASME, vol.135, 2013 (Journal Indexed in SCI)
- XI. **High mass flux flow boiling and critical heat flux in microscale**
Kaya A., Ozdemir M. R. , Kosar A.
INTERNATIONAL JOURNAL OF THERMAL SCIENCES, vol.65, pp.70-78, 2013 (Journal Indexed in SCI)
- XII. **Low Mass Quality Flow Boiling in Microtubes at High Mass Fluxes**
Özdemir M. R.
JOURNAL OF THERMAL SCIENCE AND ENGINEERING APPLICATIONS, vol.3, pp.41001-41010, 2011 (Journal Indexed in SCI Expanded)
- XIII. **Parametric study on the effect of end walls on heat transfer and fluid flow across a micro pin-fin**
Koz M., Ozdemir M. R. , Kosar A.
INTERNATIONAL JOURNAL OF THERMAL SCIENCES, vol.50, pp.1073-1084, 2011 (Journal Indexed in SCI)
- XIV. **Pressure drop across micro-pin heat sinks under unstable boiling conditions**
Kosar A., Ozdemir M. R. , Keskinöz M.
INTERNATIONAL JOURNAL OF THERMAL SCIENCES, vol.49, pp.1253-1263, 2010 (Journal Indexed in SCI)

Articles Published in Other Journals

- I. **Demir Bazlı Nano-Sıvının Tek-Faz ve Havuz Kaynama Isı Transferi Şartlarında Ekserji Analizi**
ÖZDEMİR M. R.
International journal of advances in engineering and pure sciences (Online), vol.32, pp.197-205, 2020 (Refereed Journals of Other Institutions)
- II. **EFFECT OF THE GEOMETRICAL PARAMETERS IN A DOMESTIC BURNER WITH CRESCENT FLAME CHANNELS FOR AN OPTIMAL TEMPERATURE DISTRIBUTION AND THERMAL EFFICIENCY**
ŞENER R., ÖZDEMİR M. R. , YANGAZ M. U.
JOURNAL OF THERMAL ENGINEERING, vol.5, pp.171-183, 2019 (Journal Indexed in ESCI)
- III. **A REVIEW OF SINGLE-PHASE AND TWO-PHASE PRESSURE DROP CHARACTERISTICS AND FLOW BOILING INSTABILITIES IN MICROCHANNELS**
Ozdemir M. R. , Sozbir O. R.
JOURNAL OF THERMAL ENGINEERING, vol.4, pp.2451-2463, 2018 (Journal Indexed in ESCI)
- IV. **EXERGO-ECONOMIC ANALYSIS OF MICROCHANNELS IN SINGLE-PHASE FLOW**
Ozdemir M. R. , Sozbir O. R. , Yilmaz M.
JOURNAL OF THERMAL ENGINEERING, vol.4, pp.2371-2380, 2018 (Journal Indexed in ESCI)
- V. **FLOW BOILING HEAT TRANSFER IN A RECTANGULAR COPPER MICROCHANNEL**
Ozdemir M. R. , Mahmoud M. M. , Karayiannis T. G.
JOURNAL OF THERMAL ENGINEERING, vol.2, pp.761-773, 2016 (Journal Indexed in ESCI)

Refereed Congress / Symposium Publications in Proceedings

- I. **Effect of Calciner Burner Geometry on Combustion Efficiency**
ÖZDEMİR M. R.
2nd International Eurasian Conference on Science, Engineering and Technology (EurasianSciEnTech 2020), Gaziantep, Turkey, 7 - 09 October 2020
- II. **Exergy and Exergoeconomic Analysis of a Diesel Engine**
ÖZDEMİR M. R.
INTERNATIONAL 2nd CONFERENCE ON SUSTAINABLE ENERGY AND ENERGY CALCULATIONS (ICSEEC2020, Online Live Conference, Turkey, 4 - 06 September 2020)

- III. **Flow Boiling Pressure Drop Characteristics in a Rectangular Metallic Microchannel**
 ÖZDEMİR M. R. , Mahmoud M. M. , Karayiannis T. G.
 Proceedings of the 5th World Congress on Mechanical, Chemical, and Material Engineering (MCM'xx19), Portugal, 15 - 17 August 2019
- IV. **Flow boiling pressure drop characteristics in a rectangular metallic microchannel**
 Özdemir M. R. , Mahmoud M., Karayiannis T. G.
 Proceedings of the 5th World Congress on Mechanical, Chemical, and Material Engineering (MCM19), Lisbon, Portugal, 15 August 2019 - 17 March 2020, pp.1-10
- V. **The effects of piston bowl geometries of Direct Injection Diesel Engines on emission and combustion characteristics**
 ŞENER R., YANGAZ M. U. , ÖZDEMİR M. R.
 VI. European Conference on Renewable Energy Systems, İstanbul, Turkey, 25 - 27 June 2018
- VI. **The combustion characteristics and performance evaluation of hydrogen addition to various fuels in a premixed burner**
 ŞENER R., ÖZDEMİR M. R. , YANGAZ M. U.
 VI. European Conference on Renewable Energy Systems, İstanbul, Turkey, 25 - 27 June 2018
- VII. **EFFECTS OF THE DISTANCE AND DIAMETER OF THE COOKER FROM DOMESTIC BURNER WITH CRESCENT FLAME CHANNELS ON OPTIMAL TEMPERATURE DISTRIBUTION AND THERMAL EFFICIENCY**
 ŞENER R., ÖZDEMİR M. R. , YANGAZ M. U.
 3rd CONFERENCE ON ADVANCES IN MECHANICAL ENGINEERING ISTANBUL 2017 – ICAME2017, İstanbul, Turkey, 19 - 21 December 2017
- VIII. **PERFORMANCE AND EFFICIENCY COMPARISON OF SEVERAL DIFFERENT INTAKE DESIGNS FOR A FORMULA SAE RACE CAR**
 YANGAZ M. U. , ÖZDEMİR M. R. , ŞENER R.
 3rd CONFERENCE ON ADVANCES IN MECHANICAL ENGINEERING ISTANBUL 2017 –ICAME2017, İstanbul, Turkey, 19 - 21 December 2017
- IX. **APPLICATION OF PCM IN THERMAL ENGINEERING: A REVIEW**
 ÖZDEMİR M. R. , YANGAZ M. U. , ŞENER R.
 3rd CONFERENCE ON ADVANCES IN MECHANICAL ENGINEERING ISTANBUL 2017 –ICAME2017, İstanbul, Turkey, 19 - 21 December 2017
- X. **EFFECTS OF THE DISTANCE AND DIAMETER OF THE COOKER FROM DOMESTIC BURNER WITH CRESCENT FLAME CHANNELS ON OPTIMAL TEMPERATURE DISTRIBUTION AND THERMAL EFFICIENCY**
 ŞENER R., ÖZDEMİR M. R. , YANGAZ M. U.
 3rd CONFERENCE ON ADVANCES IN MECHANICAL ENGINEERING ISTANBUL 2017 –ICAME2017, İstanbul, Turkey, 19 - 21 December 2017
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 3rd CONFERENCE ON ADVANCES IN MECHANICAL ENGINEERING ISTANBUL 2017 –ICAME2017, İstanbul, Turkey, 19 - 21 December 2017
- XIII. **HEAT TRANSFER CHARACTERISTICS OF NANOFUIDS IN MICRO-SCALE: A REVIEW**
 ÖZDEMİR M. R. , ŞENER R., YANGAZ M. U.
 3rd CONFERENCE ON ADVANCES IN MECHANICAL ENGINEERING ISTANBUL 2017 –ICAME2017, İstanbul, Turkey, 19 - 21 December 2017
- XIV. **HEAT TRANSFER CHARACTERISTICS OF NANOFUIDS IN MICRO-SCALE: A REVIEW**

ÖZDEMİR M. R. , YANGAZ M. U. , ŞENER R.

3rd CONFERENCE ON ADVANCES IN MECHANICAL ENGINEERING ISTANBUL 2017 –ICAME2017, İstanbul, Turkey, 19 - 21 December 2017

- XV. **EXERGO-ECONOMIC ANALYSIS OF METALLIC RECTANGULAR MICROCHANNELS IN SINGLE-PHASE FLOW**
ÖZDEMİR M. R. , SOZBIR O. R. , YILMAZ M.
INTERNATIONAL CONFERENCE ON ENERGY AND THERMAL ENGINEERING: ISTANBUL 2017, İstanbul, Turkey, 25 - 28 April 2017
- XVI. **EXERGY ANALYSIS OF METALLIC RECTANGULAR MICROCHANNELS UNDER SINGLE-PHASE FLOW CONDITIONS**
ÖZDEMİR M. R. , SOZBIR O. R. , YILMAZ M.
INTERNATIONAL CONFERENCE ON ENERGY AND THERMAL ENGINEERING: ISTANBUL 2017, İstanbul, Turkey, 25 - 28 April 2017
- XVII. **SINGLE-PHASE AND TWO-PHASE PRESSURE DROP CHARACTERISTICS AND FLOW BOILING INSTABILITIES IN MICROCHANNELS: A CRITICAL REVIEW**
ÖZDEMİR M. R. , SOZBIR O. R.
INTERNATIONAL CONFERENCE ON ENERGY AND THERMAL ENGINEERING: ISTANBUL 2017, İstanbul, Turkey, 25 - 28 April 2017
- XVIII. **EFFECT OF ASPECT RATIO ON SINGLE PHASE FLOW IN MICROCHANNELS**
ÖZDEMİR M. R.
ENTECH '16 / IV. International Energy Technologies Conference, İstanbul, Turkey, 15 - 16 December 2016, vol.1
- XIX. **A REVIEW OF SINGLE AND TWO PHASE HEAT TRANSFER CHARACTERISTICS IN MICROCHANNELS**
ÖZDEMİR M. R.
ENTECH '16 / IV. International Energy Technologies Conference, İstanbul, Turkey, 15 - 16 December 2016, vol.1, pp.161-172
- XX. **FLOW BOILING HEAT TRANSFER IN A SHALLOW METALLIC MICROCHANNEL**
ÖZDEMİR M. R. , Mohamed M M., Tassos G K.
14th UK Heat Transfer Conference, Edinburgh, Saint Helena, 7 - 08 September 2015
- XXI. **FLOW BOILING HEAT TRANSFER IN A RECTANGULAR COPPER MICROCHANNEL**
ÖZDEMİR M. R. , Mohamed M. M. , Tassos G K.
International Conferences on Advances in Mechanical Engineering, İstanbul, Turkey, 13 - 15 May 2015
- XXII. **Single Phase and Two Phase Heat Transfer in Rectangular Microchannel**
ÖZDEMİR M. R. , Karayiannis T.
ResCon 2014, 1 - 03 October 2014
- XXIII. **Single Phase Flow Pressure Drop and Heat Transfer in a Rectangular Metallic Micro channel**
Sahar A. M. , ÖZDEMİR M. R. , Mahmoud M. M. , Wissink J., Karayiannis T.
4th Micro and Nano Flows Conference, MNF2014, 7 - 10 September 2014
- XXIV. **Single Phase and Two Phase Heat Fluid Flow and Heat Transfer in a Metallic Microchannel**
ÖZDEMİR M. R. , Karayiannis T.
ResCon2013, 4 - 06 October 2013
- XXV. **Exergy Analysis of Marmara University Engineering Faculty C Building**
ÖZDEMİR M. R. , Alkan Ş., KALE S., Vural E., ALPMAN E.
18. Ulusal İsi Bilimi ve Teknigi Kongresi, Turkey, 7 - 10 September 2011
- XXVI. **Numerical Simulation and Optimization of Solar Tower**
YÜKSELENTÜRK Y., KÖTEN H., ÖZDEMİR M. R. , BİNARK N. K. , YILMAZ M.
Tenth International Conference on Sustainable Energy Technologies, İstanbul, Turkey, 4 - 09 September 2011
- XXVII. **Boiling Instabilities in Microtubes**
Kaya A., ÖZDEMİR M. R. , KOŞAR A.
3rd Micro and Nano Flows Conference, 22 - 24 August 2011
- XXVIII. **Boiling Heat Transfer in Microtubes at High Flow Rates**
ÖZDEMİR M. R. , KOŞAR A.

ASME International Heat Transfer Conference, 8 - 13 August 2010

XXIX. **Experimental Study on Single Phase Flow in Microchannels at High Mass Flow Rates**

ÖZDEMİR M. R. , KOŞAR A.

ASME FEDSM2010-ICNMM2010, 1 - 05 August 2010

XXX. **Thermal Hydraulic Exergy And Exergy Economic Analysis Of Micro Heat Sinks At High Flow Rates**

ÖZDEMİR M. R. , KOŞAR A., Demir O., Özenel C., Bahçivan O.

ASME 2010 10th Biennial Conference on Engineering Systems Design and Analysis, 12 - 14 July 2010

XXXI. **Parametric Study On The Effect Of Endwalls On Fluid Flow in Micro Pin Fin Heatsinks**

ÖZDEMİR M. R. , Koz M., KOŞAR A.

The 5th WSEAS International Conference on APPLIED and THEORETICAL MECHANICS, 1 - 05 August 2009

XXXII. **Pressure Drop Across Micro Pin Heat Sinks Under Boiling Conditions**

KOŞAR A., ÖZDEMİR M. R. , KESKİNÖZ M.

ECI International Conference on Boiling Heat Transfer, 3 - 07 May 2009

Supported Projects

Özdemir M. R. , Özdemir A. Ş. , Aydın E., Süzük E., Yavuz İ., Project Supported by Higher Education Institutions, Robotik ve Kodlama Yardımıyla Mühendislik Odaklı Matematik Öğretmen Eğitimi Modülü Geliştirilmesi, 2017 - 2019

Koşar A., Yeşilyurt S., TUBITAK Project, Yüksek akışlarda kaynama kararsızlıkları, 2008 - 2011

Citations

Total Citations (WOS):132

h-index (WOS):6