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International Researcher IDs

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Publons / Web Of Science ResearcherID: S-4848-2016

ScopusID: 56197533400

Yoksis Researcher ID: 192701

Education Information

Doctorate, Drexel University, United States Of America 2009 - 2012

Postgraduate, İstanbul Technical University, Fen Bilimleri Enstitüsü, Makine Mühendisliği Anabilim Dalı, Turkey 2006 - 2008

Undergraduate, İstanbul Technical University, Makine Fakültesi, Makine Mühendisliği Bölümü, Turkey 2002 - 2006

Dissertations

Doctorate, Acoustically and electrokinetically driven transport in microfluidic devices, Drexel University, 2012

Postgraduate, Hareketli sıvı kolonunda kaynamanın incelenmesi, İstanbul Teknik Üniversitesi, Fen Bilimleri Enstitüsü, Makine Mühendisliği Anabilim Dalı, 2008

Research Areas

Mechanical Engineering, Energy, Thermodynamics, Engineering and Technology

Academic Titles / Tasks

Associate Professor, İstanbul Technical University, Makina, Makina Mühendisliği, 2023 - Continues

Lecturer PhD, İstanbul Technical University, Makina, Makina Mühendisliği, 2012 - 2023

Advising Theses

Sayar E., INVESTIGATION OF THE ORBITAL THERMAL BEHAVIOR OF SMALL SATELLITES IN LOW EARTH ORBIT, Postgraduate, G.ÇİÇEK(Student), 2023

Sayar E., Numerical study of implemented eco-friendly nanofluid in the pinfin-equipped heatsinks with novel C-shaped and V-shaped patterns, Postgraduate, F.NOJAVAN(Student), 2023

Sayar E., Investigation of air ionization and air plasma formation using the magnetoplasma technology, Postgraduate,

M.EREN(Student), 2023

Sayar E., Experimental investigation of heat transfer and pressure drop in a double tube heat exchanger with metal foam, Postgraduate, A.COŞKUN(Student), 2023

Sayar E., DEVELOPMENT AND EXPERIMENTAL INVESTIGATION OF FLEXIBLE THERMOFOIL HEATERS, Postgraduate, Y.BURAK(Student), 2022

Sayar E., Gözenekli ortamda monoetilen glikol için zorlanmış salınımlı akışın ve ısı geçişinin deneysel incelenmesi, Postgraduate, C.ERSÖZ(Student), 2019

Sayar E., Zorlanmış salınımlı dikey akışta gözenekli ortamın ısı geçişine etkisinin deneysel incelenmesi, Postgraduate, E.KEŞAF(Student), 2015

Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Fabrication and flow rate characterization of a DRIE process based valveless piezoelectric micropump**
Simsek S., Vahid E. A., Celik S., Sayar E., KOŞAR A.
JOURNAL OF MICROMECHANICS AND MICROENGINEERING, vol.32, no.6, 2022 (SCI-Expanded)
- II. **Wearable and Flexible Humidity Sensor Integrated to Disposable Diapers for Wetness Monitoring and Urinary Incontinence**
Tekçin M., Sayar E., Yalcin M. K., Bahadir S. K.
ELECTRONICS, vol.11, no.7, 2022 (SCI-Expanded)
- III. **Acoustical and thermal properties of different insulation layers for glass fibre/epoxy composites**
Sayar E., Uçar N., Karaca N., Onen A., Baydoğan M., Selver E., Kirbas C., Geygel B., UÇAR M.
INDIAN JOURNAL OF FIBRE & TEXTILE RESEARCH, vol.46, no.4, pp.354-360, 2021 (SCI-Expanded)
- IV. **Inkjet-Printed CNT/PEDOT:PSS Temperature Sensor on a Textile Substrate for Wearable Intelligent Systems**
Kuzubasoglu B. A., Sayar E., Kurşun Bahadir S.
IEEE SENSORS JOURNAL, vol.21, no.12, pp.13090-13097, 2021 (SCI-Expanded)
- V. **Wearable temperature sensor for human body temperature detection**
Kuzubasoglu B. A., Sayar E., Cochrane C., Koncar V., Kurşun Bahadir S.
JOURNAL OF MATERIALS SCIENCE-MATERIALS IN ELECTRONICS, vol.32, no.4, pp.4784-4797, 2021 (SCI-Expanded)
- VI. **Prediction of Heat Transfer in Reciprocating Antifreeze Flow Through a Porous Filter**
Sayar E.
HEAT TRANSFER ENGINEERING, vol.42, no.8, pp.655-669, 2021 (SCI-Expanded)
- VII. **Experimental development of a Nusselt correlation for forced reciprocating oscillated vertical annular glycerol flow through a porous domain**
Sayar E.
HEAT AND MASS TRANSFER, vol.53, no.7, pp.2351-2361, 2017 (SCI-Expanded)
- VIII. **Heat transfer from an oscillated vertical annular fluid column through a porous domain A thermodynamic analysis of the experimental results**
SAYAR E.
ISI BİLİMI VE TEKNİĞİ DERGİSİ/ JOURNAL OF THERMAL SCIENCE AND TECHNOLOGY, vol.37, no.2, pp.1-12, 2017 (SCI-Expanded)
- IX. **Nusselt correlation to predict heat transfer from an oscillated vertical annular fluid column through a porous domain**
Sayar E., Sari U.
HEAT AND MASS TRANSFER, vol.53, no.4, pp.1135-1142, 2017 (SCI-Expanded)
- X. **Bulk acoustic wave piezoelectric micropumps with stationary flow rectifiers: a three-dimensional structural/fluid dynamic investigation**
Sayar E., Farouk B.

- MICROFLUIDICS AND NANOFUIDICS, vol.18, no.3, pp.433-445, 2015 (SCI-Expanded)
- XI. **Electroosmotic Augmentation in Flexural Plate Micropumps**
Sayar E., Farouk B.
JOURNAL OF MICROELECTROMECHANICAL SYSTEMS, vol.22, no.2, pp.372-385, 2013 (SCI-Expanded)
- XII. **Multifield analysis of a piezoelectric valveless micropump: effects of actuation frequency and electric potential**
Sayar E., Farouk B.
SMART MATERIALS AND STRUCTURES, vol.21, no.7, 2012 (SCI-Expanded)
- XIII. **Acoustically generated flows in microchannel flexural plate wave sensors: Effects of compressibility**
Sayar E., Farouk B.
SENSORS AND ACTUATORS A-PHYSICAL, vol.171, no.2, pp.317-323, 2011 (SCI-Expanded)

Articles Published in Other Journals

- I. **Bina enerji kullanımının bir boyutlu dinamik ısıl modellenmesi ve örnekler uygulanması**
SAYAR E.
Tesisat Mühendisliği, vol.27, no.174, pp.59-74, 2019 (Peer-Reviewed Journal)
- II. **Toplu taşıma sistemlerinde iklimlendirme ve iç hava kalitesi**
SAYAR E.
Tesisat Mühendisliği, vol.27, no.174, pp.75-83, 2019 (Peer-Reviewed Journal)
- III. **Bina enerji Tüketiminin Isıl Modellenmesi**
KOÇ İ., SAYAR E., PARMAKSIZOĞLU İ. C.
Tesisat Mühendisliği, vol.25, no.163, pp.84-92, 2018 (Peer-Reviewed Journal)

Books & Book Chapters

- I. **Isı Taşınımına Giriş (Tüm bölümün tek çevirmeni olarak)**
ALTUNTOP N., HORUZ İ., ÜNAL A., ÖZALP A. A., SAYAR E., ARSLANTÜRK C., DALOĞLU A. C., YILDIZ S., İNCE İ. T.
in: ISI TRANSFERİ - Heat Transfer (toplam 9 çevirmenden biri olarak), Prof.Dr. İlhami Horoz, Editor, NOBEL
Akademik Yayıncılık, Ankara, pp.277-325, 2014

Refereed Congress / Symposium Publications in Proceedings

- I. **NANOLİF Katkılı Nonwoven Kumaşların Yalıtım Özellikleri**
Karaca N., Özkan Hacıogulları S., Günal S. R., Geygel B., SAYAR E., ÖNEN H. A., SOLAK N., UÇAR M., Kırbas C., UÇAR N.
İTÜ Ulusal Tekstil Kongresi II. AR-GE Günü, Turkey, 2 - 03 April 2020
- II. **Thermal Insulation Properties of Glass Fiber Epoxy Composite with Stonewool Fiber, Nanofiber Web, Silica Aerogel Layers**
Günal S. R., SAYAR E., Geygel B., Özkan Hacıogulları S., Karaca N., UÇAR M., SELVER E., SOLAK N., BAYDOĞAN M.,
ÖNEN H. A., et al.
6. International Fiber and Polymer Research Symposium, 24 - 25 January 2020, vol.1, pp.67-69
- III. **BİNA ENERJİ TÜKETİMİNİN DİNAMİK YAKLAŞIMLA ISİL MODELLENMESİ**
SAYAR E., PARMAKSIZOĞLU İ. C.
ULIBTK'17 21. Ulusal Isı Bilimi ve Tekniği Kongresi, Çorum, Turkey, 13 - 16 September 2017
- IV. **Bina enerji tüketiminin ısıl modellenmesi**
KOÇ İ., SAYAR E., PARMAKSIZOĞLU İ. C.
13. Ulusal Tesisat Mühendisliği Kongresi, İzmir, Turkey, 19 - 22 April 2017, pp.1989-1999
- V. **EXPERIMENTAL INVESTIGATION OF THE TOTAL MELTING TIME AT VARIOUS HEAT FLUXES IN AN**

- ANNULAR CYLINDRICAL CONCENTRIC PHASE CHANGE MATERIAL**
ALTINOLUK T., Talabazar F. R., SAYAR E.
INTERNATIONAL CONFERENCE ON ENERGY AND THERMAL ENGINEERING, 25 - 28 April 2017
- VI. BİNA ENERJİ TÜKETİMİNİN ISIL MODELLENMESİ**
KOÇ İ., SAYAR E., PARMAKSIZOĞLU İ. C.
13. ULUSAL TESİSAT MÜHENDİSLİĞİ KONGRESİ, İzmir, Turkey, 19 - 22 April 2017
- VII. BOILING HEAT TRANSFER FROM AN OSCILLATED WATER COLUMN THROUGH A POROUS DOMAIN: A SIMPLIFIED THERMODYNAMIC ANALYSIS**
Sayar E.
ASME International Mechanical Engineering Congress and Exposition (IMECE2016), Arizona, United States Of America, 11 - 17 November 2016
- VIII. ON THE HYDRODYNAMIC ANALYSIS AND HEAT TRANSFER INVESTIGATION OF FORCED OSCILLATED VERTICAL ANNULAR FLUID COLUMN**
Sayar E.
ASME International Mechanical Engineering Congress and Exposition (IMECE2016), Arizona, United States Of America, 11 - 17 November 2016
- IX. EFFECTS OF THE STRUCTURAL LAYER MATERIAL AND ITS THICKNESS ON POSITIVE DISPLACEMENT PIEZOELECTRIC MICROPUMP PERFORMANCE**
Sayar E., Farouk B.
ASME International Mechanical Engineering Congress and Exposition (IMECE2015), Texas, United States Of America, 13 - 19 November 2015
- X. A Computational Study on The Effect of Electrical Input Signal Characteristics In A Bulk Acoustic Wave Piezoelectric Valveless Micropumps**
SAYAR E., Farouk B.
IEESE 7, 7th International Ege Energy Symposium and Exhibition, 18 - 20 June 2014
- XI. Analysis of The Fluid Flow and Material Deformation In A Bulk Acoustic Wave Piezoelectric Micropump Effects of Structural Damping Parameters**
SAYAR E., Farouk B.
IEESE 7, 7th International Ege Energy Symposium and Exhibition, 18 - 20 June 2014
- XII. SENSITIVITY TO PUMPING BACK PRESSURE IN A BULK ACOUSTIC WAVE PIEZOELECTRIC POSITIVE DISPLACEMENT MICROPUMP**
SAYAR E., Farouk B.
Proceeding of Proceedings of CONV-14: International Symposium on Convective Heat and Mass Transfer. June 8 - 13, 2014, Kusadasi, Turkey, Antalya, Turkey, 13 - 19 June 2014
- XIII. A COMPUTATIONAL STUDY ON TRANSDUCER MATERIAL SELECTION IN BULK ACOUSTIC WAVE PIEZOELECTRIC VALVELESS MICROPUMPS**
SAYAR E., Farouk B.
Proceeding of Proceedings of CONV-14: International Symposium on Convective Heat and Mass Transfer. June 8 - 13, 2014, Kusadasi, Turkey, Antalya, Turkey, 13 - 19 June 2014
- XIV. DYNAMIC ANALYSIS OF BULK ACOUSTIC WAVE PIEZOELECTRIC MICROPUMPS: EFFECTS OF INLET-OUTLET PORT ANGLES AND OVERALL PUMP SIZE**
Sayar E., Farouk B.
ASME International Mechanical Engineering Congress and Exposition (IMECE2013), California, United States Of America, 15 - 21 November 2013
- XV. DYNAMIC ANALYSIS OF PIEZOELECTRIC VALVELESS MICROPUMPS: EFFECTS OF PIEZOELECTRIC TRANSDUCER MATERIAL**
Sayar E., Farouk B.
ASME International Mechanical Engineering Congress and Exposition (IMECE2013), California, United States Of America, 15 - 21 November 2013
- XVI. Three Dimensional Dynamic Analysis of a Piezoelectric Valveless Micropump Effects of Working Fluid**

- SAYAR E., Farouk B.
- Volume 8: Mechanics of Solids, Structures and Fluids, Houston, Texas, USA, 9 - 11 November 2012
- XVII. **Acoustically Generated Flows in Flexural Plate Wave Sensors: a Multifield Analysis**
- SAYAR E., Farouk B.
- 4th Annual Meeting of the American Physical Society'xxs Division of Fluid Dynamics (DFD), Baltimore, Maryland, United States Of America, 20 - 22 October 2011
- XVIII. **Multifield Analysis of a Piezoelectric Valveless Micropump**
- SAYAR E., Farouk B.
- Volume 8: Mechanics of Solids, Structures and Fluids; Vibration, Acoustics and Wave Propagation, Denver, Colorado, USA, 1 - 03 January 2011
- XIX. **Modeling of Acoustically Augmented Electroosmotic Flows in Microchannels**
- SAYAR E., Farouk B.
- Volume 10: Micro and Nano Systems, Vancouver, British Columbia, Canada, 1 - 03 January 2010

Supported Projects

- Sayar E., Project Supported by Higher Education Institutions, Gözenekli ortamın kendinden veya zorlanmış salınımlı akış/havuz kaynamasına etkisinin deneysel incelenmesi, 2016 - 2021
- Sayar E., Project Supported by Higher Education Institutions, Piezoelektrik Malzemenin Yarattığı Titreşimlerin Doğal Taşınımında Sıcaklık Dağılımına Etkisinin İncelenmesi, 2015 - 2021
- Sayar E., Project Supported by Higher Education Institutions, Boiling Heat Transfer From an Oscillated Water Column Through a Porous Domain: A Simplified Thermodynamic Analysis, 2016 - 2018
- Sayar E., Project Supported by Higher Education Institutions, EFFECTS OF THE STRUCTURAL LAYER MATERIAL AND ITS THICKNESS ON POSITIVE DISPLACEMENT PIEZOELECTRIC MICROPUMP PERFORMANCE, 2015 - 2018
- Sayar E., Project Supported by Higher Education Institutions, Dynamic analysis of bulk acoustic wave piezoelectric micropumps effects of intel outlet port angles and overall pump size, 2013 - 2018
- Sayar E., Project Supported by Other Private Institutions, Enerji verimliliği için ısı yalitimına yönelik aerojel ve nanokompozit malzeme içerikli kaplamaların geliştirilmesi projesine dış hizmet temini, 2015 - 2016
- Sayar E., Project Supported by Higher Education Institutions, Gözenekli ortam oluşturularak hareketli bir sıvı kolonunda kaynamanın deneysel incelenmesi, 2014 - 2015
- Sayar E., Project Supported by Higher Education Institutions, Piezoelektrik Mikropompanın Elektromekanik Özelliklerine Sıcaklığın Etkisi, 2014 - 2015

Metrics

- Publication: 37
- Citation (WoS): 72
- Citation (Scopus): 203
- H-Index (WoS): 5
- H-Index (Scopus): 7