

Prof. MUSTAFA TUTAR

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Education Information

Doctorate, University of Hertfordshire, Aeronautical, Civil And Mechanical Engineering, United Kingdom 1995 - 1998
Undergraduate, Middle East Technical University, Faculty Of Engineering, Makine Mühendisliği Bölümü, Turkey 1987 - 1993

Research Areas

Energy, Thermodynamics

Academic Titles / Tasks

Professor, Ankara University, Mühendislik Fakültesi, Enerji Mühendisliği Bölümü, 2015 - Continues

Professor, Mondragon Goi Eskola Politeknikoa, Escuela Politeknikoa Superior, Dpto. De Mecanica Y Produccion Industrial, 2010 - 2015

Associate Professor, Mersin University, Faculty Of Engineering, Department Of Mechanical Engineering, 2005 - 2010

Assistant Professor, Mersin University, Faculty Of Engineering, Department Of Mechanical Engineering, 1999 - 2005

Academic and Administrative Experience

Ankara University, 2017 - Continues

Courses

Introduction to Sustainable Energy, Undergraduate, 2016 - 2017

Chassis and Aerodynamic Module, Postgraduate, 2011 - 2012, 2010 - 2011

Akışkanlar Mekaniği I, Undergraduate, 2009 - 2010, 2008 - 2009

Sayısal Akışkanlar Dinamiği , Postgraduate, 2008 - 2009

Türbülans Modellerine Giriş , Postgraduate, 2008 - 2009

Pumps and Compressors, Undergraduate, 2008 - 2009

Mühendislikte Endüstriyel Uygulamalar I, Undergraduate, 2008 - 2009

Sınır Katmanı Teorisi ve Modellenmesi , Postgraduate, 2008 - 2009

Akışkanlar Mekaniği II, Undergraduate, 2008 - 2009

Advising Theses

- TUTAR M., Development of Optimum Design Configuration of a Small-Scale Horizontal Axis Wind Turbine Using Winglets, Postgraduate, M.HAFİZ(Student), 2021
- TUTAR M., Analysis of the Influence of Physical Parameters, Geometric and Operating Variables on the Energy Efficiency of the Regenerator in the Stirling Cycle, Doctorate, C.SOL(Student), 2014
- TUTAR M., Plastik enjeksiyon işleminin üç boyutlu sayısal modellenmesi, Postgraduate, A.KARAKUŞ(Student), 2009
- TUTAR M., Bir grup bina arasındaki hava akımının nümerik olarak modellenmesi, Postgraduate, G.ÖĞÜZ(Student), 2002

Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Optimized CFD modelling and validation of radiation section of an industrial top-fired steam methane reforming furnace**
Tutar M., Ustun C. E., Campillo-Robles J. M., Fuente R., Cibrian S., Arzua I., Fernandez A., Lopez G. A.
COMPUTERS & CHEMICAL ENGINEERING, vol.155, 2021 (SCI-Expanded)
- II. **Computational modeling of axial rotation for the evolution of temperature in horizontal toroidal cans under pasteurization conditions**
Erdoğan F., Topcam H., Altın O., Karatas O., Sarghini F., Tokur B., Tutar M.
FOOD AND BIOPRODUCTS PROCESSING, vol.130, pp.106-120, 2021 (SCI-Expanded)
- III. **Effects of viscosity and agitation rate on temperature and flow field in cans during reciprocal agitation**
ERDOĞDU F., Tutar M., Sarghini F., Skipnes D.
JOURNAL OF FOOD ENGINEERING, vol.213, pp.76-88, 2017 (SCI-Expanded)
- IV. **Determining the optimal shaking rate of a reciprocal agitation sterilization system for liquid foods: A computational approach with experimental validation**
ERDOĞDU F., Tutar M., Oines S., Barreno I., Skipnes D.
FOOD AND BIOPRODUCTS PROCESSING, vol.100, pp.512-524, 2016 (SCI-Expanded)
- V. **Adaptive coatings based on polyaniline for direct 2D observation of diffusion processes in microfluidic systems**
Florea L., Martin-Mayor A., Mounir Bou-Ali M., Meagher K., Diamond D., Tutar M., Benito-Lopez F.
SENSORS AND ACTUATORS B-CHEMICAL, vol.231, pp.744-751, 2016 (SCI-Expanded)
- VI. **Experimental study on performance assessment of Savonius rotor type wave energy converter in an experimental wave flume**
Tutar M., Veci I.
IET RENEWABLE POWER GENERATION, vol.10, no.4, pp.541-550, 2016 (SCI-Expanded)
- VII. **Performance analysis of a horizontal axis 3-bladed Savonius type wave turbine in an experimental wave flume (EWF)**
Tutar M., Veci I.
RENEWABLE ENERGY, vol.86, pp.8-25, 2016 (SCI-Expanded)
- VIII. **LES study of grid-generated turbulent inflow conditions with moderate number of mesh cells at low Re numbers**
Torrano I., Martinez-Agirre M., Tutar M.
INTERNATIONAL JOURNAL OF COMPUTATIONAL FLUID DYNAMICS, vol.30, no.2, pp.141-154, 2016 (SCI-Expanded)
- IX. **Experimental wave flume study of Savonius-type multiple rotor arrays**
Tutar M., Veci I.
JOURNAL OF RENEWABLE AND SUSTAINABLE ENERGY, vol.7, no.6, 2015 (SCI-Expanded)
- X. **Numerical correlation for the pressure drop in Stirling engine heat exchangers**
Barreno I., Costa S. C., Cordon M., Tutar M., Urrutibeascoa I., Gomez X., Castillo G.
INTERNATIONAL JOURNAL OF THERMAL SCIENCES, vol.97, pp.68-81, 2015 (SCI-Expanded)
- XI. **Comparison of Experimental and RANS-Based Numerical Studies of the Decay of Grid-Generated**

Turbulence

Torrano I., Tutar M., Martinez-Agirre M., Rouquier A., Mordant N., Bourgoïn M.

JOURNAL OF FLUIDS ENGINEERING-TRANSACTIONS OF THE ASME, vol.137, no.6, 2015 (SCI-Expanded)

- XII. **The thermal non-equilibrium porous media modelling for CFD study of woven wire matrix of a Stirling regenerator**
Costa S. C., Barreno I., Tutar M., Esnaola J. A., Barrutia H.
ENERGY CONVERSION AND MANAGEMENT, vol.89, pp.473-483, 2015 (SCI-Expanded)
- XIII. **Numerical study of polymer melt flow in a three-dimensional sudden expansion: viscous dissipation effects**
Tutar M., KARAKUŞ A.
JOURNAL OF POLYMER ENGINEERING, vol.34, no.8, pp.755-764, 2014 (SCI-Expanded)
- XIV. **Experimental and numerical flow investigation of Stirling engine regenerator**
Costa S., Tutar M., Barreno I., Esnaola J., Barrutia H., Garcia D., Gonzalez M., Prieto J.
ENERGY, vol.72, pp.800-812, 2014 (SCI-Expanded)
- XV. **Numerical study of the heat transfer in wound woven wire matrix of a Stirling regenerator**
Costa S. C., Barrutia H., Ander Esnaola J., Tutar M.
ENERGY CONVERSION AND MANAGEMENT, vol.79, pp.255-264, 2014 (SCI-Expanded)
- XVI. **Effects of mesh refinement, time step size and numerical scheme on the computational modeling of temperature evolution during natural-convection heating**
Boz Z., ERDOĞDU F., Tutar M.
JOURNAL OF FOOD ENGINEERING, vol.123, pp.8-16, 2014 (SCI-Expanded)
- XVII. **Computational study of a small scale vertical axis wind turbine (VAWT): comparative performance of various turbulence models**
Aresti L., Tutar M., Chen Y., Calay R. K.
WIND AND STRUCTURES, vol.17, no.6, pp.647-670, 2013 (SCI-Expanded)
- XVIII. **A numerical study of solidification and viscous dissipation effects on polymer melt flow in plane channels**
Tutar M., KARAKUŞ A.
JOURNAL OF POLYMER ENGINEERING, vol.33, no.2, pp.95-110, 2013 (SCI-Expanded)
- XIX. **Numerical study of the pressure drop phenomena in wound woven wire matrix of a Stirling regenerator**
Costa S. C., Barrutia H., Ander Esnaola J., Tutar M.
ENERGY CONVERSION AND MANAGEMENT, vol.67, pp.57-65, 2013 (SCI-Expanded)
- XX. **Computational Modeling of the Effects of Viscous Dissipation on Polymer Melt Flow Behavior During Injection Molding Process in Plane Channels**
Tutar M., KARAKUŞ A.
JOURNAL OF MANUFACTURING SCIENCE AND ENGINEERING-TRANSACTIONS OF THE ASME, vol.135, no.1, 2013 (SCI-Expanded)
- XXI. **Numerical simulation for heat transfer and velocity field characteristics of two-phase flow systems in axially rotating horizontal cans**
Tutar M., ERDOĞDU F.
JOURNAL OF FOOD ENGINEERING, vol.111, no.2, pp.366-385, 2012 (SCI-Expanded)
- XXII. **A computational study for axial rotation effects on heat transfer in rotating cans containing liquid water, semi-fluid food system and headspace**
ERDOĞDU F., Tutar M.
INTERNATIONAL JOURNAL OF HEAT AND MASS TRANSFER, vol.55, no.13-14, pp.3774-3788, 2012 (SCI-Expanded)
- XXIII. **Computational modelling of inflow turbulence effects on transitional flow in a highly transonic linear turbine**
Tutar M., Sonmez U.
INTERNATIONAL JOURNAL OF NUMERICAL METHODS FOR HEAT & FLUID FLOW, vol.22, no.8, pp.1096-1119, 2012 (SCI-Expanded)

- XXIV. **Velocity and Temperature Field Characteristics of Water and Air during Natural Convection Heating in Cans**
ERDOĞDU F., Tutar M.
JOURNAL OF FOOD SCIENCE, vol.76, no.1, 2011 (SCI-Expanded)
- XXV. **Computational Study of the Effect of Governing Parameters on a Polymer Injection Molding Process for Single-Cavity and Multicavity Mold Systems**
Tutar M., KARAKUŞ A.
JOURNAL OF MANUFACTURING SCIENCE AND ENGINEERING-TRANSACTIONS OF THE ASME, vol.132, no.1, 2010 (SCI-Expanded)
- XXVI. **THE COMPUTATIONAL MODELING OF TRANSITIONAL FLOW THROUGH A TRANSONIC LINEAR TURBINE: COMPARATIVE PERFORMANCE OF VARIOUS TURBULENCE MODELS**
Tutar M., Sonmez U.
NUMERICAL HEAT TRANSFER PART A-APPLICATIONS, vol.58, no.5, pp.403-427, 2010 (SCI-Expanded)
- XXVII. **3-D Computational Modelling of Process Condition Effects on Polymer Injection Molding**
Tutar M., KARAKUŞ A.
INTERNATIONAL POLYMER PROCESSING, vol.24, no.5, pp.384-398, 2009 (SCI-Expanded)
- XXVIII. **INJECTION MOLDING SIMULATION OF A COMPRESSIBLE POLYMER**
Tutar M., KARAKUŞ A.
JOURNAL OF POLYMER ENGINEERING, vol.29, no.6, pp.355-383, 2009 (SCI-Expanded)
- XXIX. **Computational modeling of airflow patterns and heat transfer prediction through stacked layers' products in a vented box during cooling**
Tutar M., ERDOĞDU F., Toka B.
INTERNATIONAL JOURNAL OF REFRIGERATION-REVUE INTERNATIONALE DU FROID, vol.32, no.2, pp.295-306, 2009 (SCI-Expanded)
- XXX. **Large eddy simulation of a square cylinder flow: Modelling of inflow turbulence**
Tutar M., Celik I.
WIND AND STRUCTURES, vol.10, no.6, pp.511-532, 2007 (SCI-Expanded)
- XXXI. **Modeling of effect of inflow turbulence data on large eddy simulation of circular cylinder flows**
Tutar M., Celik I., Yavuz I.
JOURNAL OF FLUIDS ENGINEERING-TRANSACTIONS OF THE ASME, vol.129, no.6, pp.780-790, 2007 (SCI-Expanded)
- XXXII. **Computational modeling of wind flow around a group of buildings**
Tutar M., Oguz G.
INTERNATIONAL JOURNAL OF COMPUTATIONAL FLUID DYNAMICS, vol.18, no.8, pp.651-670, 2004 (SCI-Expanded)
- XXXIII. **Numerical analysis of fluid flow and heat transfer characteristics in three-dimensional plate fin-and-tube heat exchangers**
Tutar M., Akkoca A.
NUMERICAL HEAT TRANSFER PART A-APPLICATIONS, vol.46, no.3, pp.301-321, 2004 (SCI-Expanded)
- XXXIV. **Large eddy simulation of wind flow around parallel buildings with varying configurations**
Tutar M., Oguz G.
FLUID DYNAMICS RESEARCH, vol.31, no.5-6, pp.289-315, 2002 (SCI-Expanded)
- XXXV. **Computational modelling of flow around a circular cylinder in sub-critical flow regime with various turbulence models**
Tutar M., Holdo A.
INTERNATIONAL JOURNAL FOR NUMERICAL METHODS IN FLUIDS, vol.35, no.7, pp.763-784, 2001 (SCI-Expanded)
- XXXVI. **Large eddy simulation of a smooth circular cylinder oscillating normal to a uniform flow**
Tutar M., Holdo A.
JOURNAL OF FLUIDS ENGINEERING-TRANSACTIONS OF THE ASME, vol.122, no.4, pp.694-702, 2000 (SCI-Expanded)
- XXXVII. **Application of differing forcing function models on simulated flow past an oscillating cylinder in a**

uniform low Reynolds number flow

Tutar M., Holdo A.

INTERNATIONAL JOURNAL OF COMPUTATIONAL FLUID DYNAMICS, vol.11, no.3-4, pp.223-235, 1999 (SCI-Expanded)

Articles Published in Other Journals

- I. **Modelling of effect of inflow turbulence on large eddy simulation of bluff body flows**
Tutar M., Celik I., Yavuz I.
Mathematical and Computational Applications, vol.11, no.3, pp.225-234, 2006 (Scopus)
- II. **A numerical study of heat transfer and fluid flow in a plate fin- and- tube heat exchanger**
Tutar M., Akkoca A., Oztekin S.
American Society of Mechanical Engineers, Pressure Vessels and Piping Division (Publication) PVP, vol.431, pp.77-84, 2000 (Scopus)
- III. **The role of the wall function in Large Eddy Simulations of bluff body flows**
Wakes S., Holdo A., Tutar M.
Proceedings of the 1999 3rd ASME/JSME Joint Fluids Engineering Conference, FEDSM'99, San Francisco, California, USA, 18-23 July 1999 (CD-ROM), pp.1, 1999 (Scopus)

Refereed Congress / Symposium Publications in Proceedings

- I. **EFFECT OF LIQUID VISCOSITY ON THE TEMPERATURE EVOLUTION DURING AXIAL ROTATION OF TOROIDAL CANS: A COMPUTATIONAL FORCE ANALYSIS**
Erdoğdu F., Topcam H., Altin O., Karatas O., Sarghini F., Tutar M.
12th International Conference on Simulation and Modelling in the Food and Bio-Industry, FOODSIM 2022, Ghent, Belgium, 3 - 06 April 2022, pp.86-90
- II. **Computational Performance Analysis of a Rotary Type Tri-Rotor Air Compressor Undergoing a Polytropic Process**
Tutar M., Üstün C. E., Mutlu H.
19th Conference on Thermal Science and Engineering of Serbia, Nish, Serbia, 22 - 25 October 2019, vol.1, pp.609-621
- III. **Sustainability in the vegetable food supply chain -overview of the results of the project SUNNIVA**
Lovdal T., ERDOĞDU F., Droogenbroeck B. v., A Vagen V., Bartoszek A. B., Vos C. V., Hanssen G. A., Kaniszewski Z. K., Skipnes D., TUTAR M.
31st Effost International Conference, 13 - 16 November 2017
- IV. **A performance study of a horizontal-axis micro-turbine in a numerical wave flume**
Tutar M., Mendi M.
Conference on Sustainable Solutions for Energy and Environment (EENVIRO), Bucharest, Romania, 26 - 28 October 2016, vol.112, pp.83-91
- V. **Computational Determination of Viscosity and Agitation Rate Effects during Reciprocal Agitated Retort Processing**
Erdogdu F., TUTAR M., Oines S., Barreno I., Skipnes D., Lovdal T.
4th ISEKI Food Conference, 6 - 08 July 2016
- VI. **Optimization of a thermal p rocess with reciprocal agitation by computational modelling**
Skipnes D., ERDOĞDU F., Tutar M., Øines S., Barreno I., Løvdal T.
9th International Conference on Simulation and Modelling in the Food and Bio-Industry, FOODSIM 2016, Ghent, Belgium, 3 - 07 April 2016, pp.149-151
- VII. **Computational modelling of reciprocal agitation retort process for canned liquid foods**
Erdogdu F., Tutar M., Barreno I., Skipnese D., Oinese S., Lovdale T.

29th Effost International Conference, Athens, Greece, 10 - 11 October 2015, vol.1, pp.388-395

- VIII. **Self Powered High Flow Capacity Polymeric Microfluidics**
Ruiz I., Veci I., Tijero M., Valero A., Etxebarria J., Berganzo J., Benito Lopez F., TUTAR M., Basabe Desmonts L.
19th Int. Conference on Miniaturized Systems for Chemistry and Life Sciences- MicroTas 2015, Seul, South Korea, 25 - 29 October 2015, pp.1359-1362
- IX. **A study of energy conversion efficiency of a savonius type wave energy converter system**
Tutar M., Erdem C.
1st International Congress on Energy Efficiency and Energy Related Materials, ENEFM 2013, Antalya, Turkey, 9 - 12 October 2013, vol.155, pp.287-293
- X. **Numerical characterization of pressure drop through a low speed wind tunnel: Some design aspects**
Torrano I., Martinez-Agirre M., Tutar M.
1st International Renewable and Sustainable Energy Conference (IRSEC), Ouarzazate, Morocco, 7 - 09 March 2013, pp.240-245
- XI. **COMPUTATIONAL MODELLING OF TWO-PHASE FLOW AROUND A SAVONIUS TYPE WAVE ENERGY CONVERTER IN A TWO-DIMENSIONAL NUMERICAL WAVE TANK**
Tutar M., Erdem C.
5th International Conference on Computational Methods in Marine Engineering, Hamburg, Germany, 29 - 31 May 2013, pp.622-633
- XII. **A study analysis for a self excited induction generator for a sea wave energy extraction application**
Buldu G., CANBOLAT H., Tutar M., Ali M. B.
11th International Conference on Electrical Power Quality and Utilisation, EPQU 2011, Lisbon, Portugal, 17 - 19 October 2011, pp.722-727
- XIII. **The design of a palette-type wave energy converter system supported by Buoys**
Buldu G., CANBOLAT H., Tutar M.
2011 10th International Conference on Environment and Electrical Engineering, IEEEIC.EU 2011, Rome, Italy, 8 - 11 May 2011
- XIV. **The role of inflow turbulence for large eddy simulation on modelling of bluff body flows**
Tutar M., Celik I., Yavuz I.
2004 ASME Heat Transfer/Fluids Engineering Summer Conference, HT/FED 2004, Charlotte, NC, United States Of America, 11 - 15 July 2004, vol.2 A, pp.451-460
- XV. **Large eddy simulation of single offshore riser oscillating normal and uniform flow: Comparison between two dimensional and three dimensional results**
Holdø A. E., Tutar M.
Emerging Technologies in Fluids, Structures, and Fluid/Structure Interactions - 1999 (The ASME Pressure Vessels and Piping Conference), Boston, MA, USA, 1 - 05 August 1999, vol.396, pp.333-341
- XVI. **Comparative performance of various two equation turbulence models and LES on simulated flow past a circular cylinder in subcritical flow regime**
Tutar M., Holdo A. E., Lewis A. P.
Proceedings of the 1998 ASME Fluids Engineering Division Summer Meeting, Washington, Kiribati, 21 - 25 June 1998
- XVII. **Application of differing forcing function models on the flow past an oscillating cylinder in a uniform low reynolds number flow**
Tutar M., Holdø A.
International Symposium on Advances in Computational Heat Transfer, CHT 1997, Çeşme, Turkey, 26 - 30 May 1997

Metrics

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