

Assoc. Prof. CÜNEYT SERT

Personal Information

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Education Information

Doctorate, Texas A&M University, Makina Mühendisliği, United States Of America 1999 - 2003

Post Graduate, Middle East Technical University, Graduate School of Natural and Applied Sciences, Makine Mühendisliği (YI) (Tezli), Turkey 1996 - 1998

Under Graduate, Middle East Technical University, Faculty of Engineering, Makine Mühendisliği Bölümü, Turkey 1992 - 1996

Foreign Languages

English, C1 Advanced

Dissertations

Doctorate, Nonconforming Formulations with Spectral Element Methods, Texas A&M University, Makina Mühendisliği, 2003

Post Graduate, Development of a Three-Dimensional Object-Oriented Euler Solver using C++ Programming Language, Middle East Technical University, Graduate School of Natural and Applied Sciences, Makine Mühendisliği (YI) (Tezli), 1998

Research Areas

Mechanical Engineering, Energy, Fluid Mechanics, Engineering and Technology

Academic Titles / Tasks

Associate Professor, Middle East Technical University, Faculty of Engineering, Makina Müh., 2016 - Continues

Assistant Professor, Middle East Technical University, Faculty of Engineering, Makine Mühendisliği Bölümü, 2004 - 2016

Lecturer, Middle East Technical University, Faculty of Engineering, Makine Mühendisliği Bölümü, 2003 - 2004

Research Assistant, Middle East Technical University, Faculty of Engineering, Makine Mühendisliği Bölümü, 1996 - 1998

Advising Theses

Okutucu Özyurt H. T. , Sert C., Optimizing heat exchanger parameters of a Joule-Thomson cryogenic cooler to improve the cooling performance, Doctorate, M.BAKİ(Student), 2018

SERT C., YAZICIOĞLU Y., Large eddy simulation of pressure fluctuations insidestened blood vessels towards noninvasive diagnosis ofatherosclerosis, Doctorate, K.ÖZDEN(Student), 2018

SERT C., OKUTUCU ÖZYURT H. T. , Numerical and experimental investigation on laser damage threshold of highly

reflective multilayer thin films, Doctorate, M.OCAK(Student), 2016

AKSEL M. H. , SERT C., GPU accelerated high-order discontinuous galerkin level set methods for incompressible multiphase flows, Doctorate, A.KARAKUŞ(Student), 2015

SERT C., BARAN Ö. U. , Design of a grid fin aerodynamic control device for transonic flight regime, Post Graduate, E.DİKBAŞ(Student), 2015

SERT C., Performance prediction of darrieus type vertical axis wind turbines using numerical simulations, Post Graduate, F.SELÇUK(Student), 2014

SERT C., Parallel implementation of the finite element method on graphics processors for the solution of incompressible flows, Post Graduate, M.MURAT(Student), 2014

SERT C., Static aeroelastic analysis of a generic slender missile using a loosely coupled fluid structure interaction method, Post Graduate, M.AKGÜL(Student), 2012

SERT C., GÜVENÇ YAZICIOĞLU A., Experimental investigation of uninterrupted and interrupted microchannel heat sinks, Post Graduate, A.GÖZDE(Student), 2012

SERT C., YAZICIOĞLU Y., Investigation of fluid structure interaction in cardiovascular system from diagnostic and pathological perspective, Post Graduate, H.ENES(Student), 2012

SERT C., Incompressible flow simulations using least squares spectral element method on adaptively refined triangular grids, Post Graduate, O.AKDAĞ(Student), 2012

SERT C., Simulation of conjugate heat transfer problems using least squares finite element method, Post Graduate, M.UĞUR(Student), 2012

SERT C., Least-squares finite element solution of euler equations with adaptive mesh refinement, Post Graduate, H.YİĞİT(Student), 2012

SERT C., Analysis of single phase fluid flow and heat transfer in slip flow regime by parallel implementation of Lattice Boltzmann method on gpus, Post Graduate, S.BERAT(Student), 2012

SERT C., Utilization of neural networks for simulation of vehicle induced flow in tunnel systems, Doctorate, G.KOÇ(Student), 2012

SERT C., AKSEL M. H. , Experimental comparison of fluid and thermal characteristics of microchannel and metal foam heat sinks, Post Graduate, A.MUAZ(Student), 2011

SERT C., Development of an incompressible, laminar flow solver based on least squares spectral element method with P-type adaptive refinement capabilities, Post Graduate, A.ÖZÇELİKKALE(Student), 2010

SERT C., Conduction based compact thermal modeling for thermal analysis of electronic components, Post Graduate, M.OCAK(Student), 2010

SERT C., AKSEL M. H. , Development of a multigrid accelerated Euler solver on adaptively refined two- and three-dimensional cartesian grids, Post Graduate, M.ÇAKMAK(Student), 2009

SERT C., Modeling and simulation of shaped charges, Post Graduate, E.GÜREL(Student), 2009

TARI İ., SERT C., CFD analysis of a notebook computer thermal management solution, Post Graduate, F.SEZA(Student), 2008

SERT C., AKSEL M. H. , Experimental investigation and numerical analysis of microchannel heatsinks for phased array radar cooling applications, Post Graduate, E.ALPSAN(Student), 2008

SERT C., A two dimensional euler flow solver on adaptive cartesian grids, Post Graduate, B.SİYAHHAN(Student), 2008

SERT C., KÜLAH H., Design and fabrication of a DNA electrophoresis chip based on MEMS technology, Post Graduate, S.SUKAS(Student), 2007

SERT C., Development of a pressure-based solver for both incompressible and compressible flows, Post Graduate, K.DENK(Student), 2007

SERT C., Development of an educational CFD software for two dimensional incompressible flows, Post Graduate, G.NAKİBOĞLU(Student), 2007

TARI İ., SERT C., Spectral (h-p) element methods approach to the solution of poisson and helmholtz equations using matlab, Post Graduate, T.MARAL(Student), 2006

SERT C., Parallel processing of three-dimensional navier-stokes equations for compressible flows, Post Graduate, T.ÇAĞRI(Student), 2005

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

- **Effect of stenosis shape on the sound emitted from a constricted blood vessel**
Ozden K., SERT C., YAZICIOĞLU Y.
MEDICAL & BIOLOGICAL ENGINEERING & COMPUTING, vol.58, pp.643-658, 2020 (Journal Indexed in SCI)
- **Numerical investigation of wall pressure fluctuations downstream of concentric and eccentric blunt stenosis models**
Ozden K., SERT C., YAZICIOĞLU Y.
PROCEEDINGS OF THE INSTITUTION OF MECHANICAL ENGINEERS PART H-JOURNAL OF ENGINEERING IN MEDICINE, vol.234, pp.48-60, 2020 (Journal Indexed in SCI)
- **Optimization of Joule-Thomson cryocooler heat exchanger using one-dimensional numerical modeling**
Baki M., Okutucu-Özyurt T., SERT C.
Cryogenics, vol.104, 2019 (Journal Indexed in SCI)
- **Use of artificial neural networks for the prediction of time-dependent air speed variation in metro stations**
KOC G., SERT C., Albayrak K.
PROCEEDINGS OF THE INSTITUTION OF MECHANICAL ENGINEERS PART F-JOURNAL OF RAIL AND RAPID TRANSIT, vol.232, pp.2186-2197, 2018 (Journal Indexed in SCI)
- **Simplified Numerical Approach for the Prediction of Aerodynamic Forces on Grid Fins**
DIKBAS E., Baran O. U. , SERT C.
JOURNAL OF SPACECRAFT AND ROCKETS, vol.55, pp.887-898, 2018 (Journal Indexed in SCI)
- **Effects of optical design modifications on thermal performance of a highly reflective HfO₂/SiO₂/TiO₂ three material coating**
OCAK M., Sert C., Okutucu-Ozyurt T.
HEAT AND MASS TRANSFER, vol.54, pp.377-384, 2018 (Journal Indexed in SCI)
- **An adaptive fully discontinuous Galerkin level set method for incompressible multiphase flows**
KARAKUS A., WARBURTON T., AKSEL M. H. , SERT C.
INTERNATIONAL JOURNAL OF NUMERICAL METHODS FOR HEAT & FLUID FLOW, vol.28, pp.1256-1278, 2018 (Journal Indexed in SCI)
- **Tracking free surface and estimating sloshing force using image processing**
Tosun U., AGHAZADEH R., SERT C., Ozer M. B.
EXPERIMENTAL THERMAL AND FLUID SCIENCE, vol.88, pp.423-433, 2017 (Journal Indexed in SCI)
- **A GPU accelerated level set reinitialization for an adaptive discontinuous Galerkin method**
KARAKUS A., WARBURTON T., AKSEL M. H. , SERT C.
COMPUTERS & MATHEMATICS WITH APPLICATIONS, vol.72, pp.755-767, 2016 (Journal Indexed in SCI)
- **A GPU-accelerated adaptive discontinuous Galerkin method for level set equation**
KARAKUS A., WARBURTON T., AKSEL M. H. , SERT C.
INTERNATIONAL JOURNAL OF COMPUTATIONAL FLUID DYNAMICS, vol.30, pp.56-68, 2016 (Journal Indexed in SCI)
- **Prediction of the maximum air velocities created by metro trains using an artificial neural network approach**
KOC G., SERT C., Albayrak K.
PROCEEDINGS OF THE INSTITUTION OF MECHANICAL ENGINEERS PART F-JOURNAL OF RAIL AND RAPID TRANSIT, vol.228, pp.759-767, 2014 (Journal Indexed in SCI)
- **Least-squares finite element solution of Euler equations with H-type mesh refinement and coarsening on triangular elements**
AKARGUN H. Y. , SERT C.
INTERNATIONAL JOURNAL OF NUMERICAL METHODS FOR HEAT & FLUID FLOW, vol.24, pp.1487-1503, 2014 (Journal Indexed in SCI)
- **Computational analysis of high frequency fluid-structure interactions in constricted flow**

Salman H. E. , SERT C., YAZICIOĞLU Y.

COMPUTERS & STRUCTURES, vol.122, pp.145-154, 2013 (Journal Indexed in SCI)

● **Least-squares spectral element solution of incompressible Navier-Stokes equations with adaptive refinement**

Ozcelikkale A., SERT C.

JOURNAL OF COMPUTATIONAL PHYSICS, vol.231, pp.3755-3769, 2012 (Journal Indexed in SCI)

● **A parylene-based dual channel micro-electrophoresis system for rapid mutation detection via heteroduplex analysis**

SUKAS S., Erson A. E. , SERT C., KÜLAH H.

ELECTROPHORESIS, vol.29, pp.3752-3758, 2008 (Journal Indexed in SCI)

● **Numerical Study of the Aerodynamic Effects of Septoplasty and Partial Lateral Turbinectomy**

OZLUGEDIK S., NAKIBOGLU G., SERT C., Elhan A., TÖNÜK E., Akyar S., Tekdemir I.

LARYNGOSCOPE, vol.118, pp.330-334, 2008 (Journal Indexed in SCI)

● **Spectral element formulations on non-conforming grids: A comparative study of pointwise matching and integral projection methods**

Sert C., BESKOK A.

JOURNAL OF COMPUTATIONAL PHYSICS, vol.211, pp.300-325, 2006 (Journal Indexed in SCI)

● **Numerical simulation of reciprocating flow forced convection in two-dimensional channels**

Sert C., BESKOK A.

JOURNAL OF HEAT TRANSFER-TRANSACTIONS OF THE ASME, vol.125, pp.403-412, 2003 (Journal Indexed in SCI)

● **Oscillatory flow forced convection in micro heat spreaders**

Sert C., BESKOK A.

NUMERICAL HEAT TRANSFER PART A-APPLICATIONS, vol.42, pp.685-705, 2002 (Journal Indexed in SCI)

● **Shear layer instability and mixing in micro heat spreaders**

Sert C., BESKOK A.

JOURNAL OF HEAT TRANSFER-TRANSACTIONS OF THE ASME, vol.123, pp.621, 2001 (Journal Indexed in SCI)

Articles Published in Other Journals

● **Electrokinetically Driven Flows in Microchannels and Capillaries**

SERT C.

Mühendis ve Makina, vol.47, pp.111-123, 2006 (Other Refereed National Journals)

● **Object Oriented Multi Block Approach for the Solution of the Euler Equations**

SERT C., AKSEL M. H. , DENER C.

Modeling, Simulation & Control B, vol.73, pp.1-24, 2004 (Refereed Journals of Other Institutions)

Refereed Congress / Symposium Publications in Proceedings

● **Simulation of Laminar Flow inside Microchannels with Realistic Surface Roughness**

Akbaş B., Sert C.

ASME - JSME - KSME Joint Fluids Engineering Conference 2019, California, United States Of America, 28 July - 01 August 2019

● **Development of a Material Response Solver for Charring Ablative Materials**

Coşkun V., Sert C., Acar B.

9th Int. Conference on Recent Advances in Space Tech. 2019, İstanbul, Turkey, 11 - 14 June 2019

● **Numerical Investigation of Wall Pressure Fluctuations Downstream of Ideal and Realistic Stenosed Vessel Models**

Özden K., Sert C., Yazıcıoğlu Y.

15th Int. Symposium on Computer Methods in Biomechanics and Biomedical Engineering, Lisbon, Portugal, 26 - 29

March 2018

Kriyojenik bir Soğutucunun Alt Parçası Olan, Ters Akışlı, Reküperatif, Helisel Sarımlı Kılcal Boru Isı Değiştiricinin Sayısal Modelinin Oluşturulması

MURAT B., OKUTUCU ÖZYURT H. T. , SERT C.

21. Ulusal Isı Bilimi ve Tekniği Kongresi, Turkey, 13 - 16 September 2017

Investigation of Acoustic Radiation in Blunt and Elliptical Stenosed Vessels

ÖZDEN K., SERT C., YAZICIOĞLU Y.

23rd Congress of the European Society of Biomechanics, Sevilla, Spain, 2 - 05 July 2017

SIMULATION OF FLUID SLOSHING FOR DECREASING THE RESPONSE OF STRUCTURAL SYSTEMS

VURUSKAN I., SERT C., Ozer M. B.

12th ASME Biennial Conference on Engineering Systems Design and Analysis (ESDA2014), Copenhagen, Denmark, 25 - 27 June 2014

Experimental Investigation of Uninterrupted and Interrupted Microchannel Heat Sinks

SOYSAL A. G. U. , SERT C., Yazicioglu A. G.

19th International Workshop on Thermal Investigations of ICs and Systems (THERMINIC), Berlin, Germany, 25 - 27 September 2013, pp.147-150

Investigation of non-quarter wave design on multilayer optical thin film coatings from a heat transfer point of view

OCAK M., SERT C., Okutucu T. O.

45th Annual Laser Damage Symposium on Laser-Induced Damage in Optical Materials, Colorado, United States Of America, 22 - 25 September 2013, vol.8885

CFD ANALYSIS OF A NOTEBOOK COMPUTER THERMAL MANAGEMENT SOLUTION

YALCIN F. S. , Sert C., TARI İ.

ASME Heat Transfer Summer Conference, Florida, United States Of America, 10 - 14 August 2008, pp.805-811

Supported Projects

SERT C., KARPUZCU I. T. , Project Supported by Higher Education Institutions, SIKIŞTIRMA – GENİŞLETME RAMPASINDA OLUŞAN ŞOK DALGASI SINIR TABAKA ETKİLEŞİMLERİNİN BÜYÜK GİRDAP BENZETİMLERİ İLE İNCELENMESİ, 2018 - 2019

SERT C., YAZICIOĞLU Y., ÖZDEN K., Project Supported by Higher Education Institutions, Damarlardaki Daralmaların Oluşturduğu Akustik Yayılımın Büyük Girdap Benzetimleri ile İncelenmesi, 2017 - 2019

SERT C., YAZICIOĞLU Y., SALMAN H. E. , ÖZDEN K., Project Supported by Higher Education Institutions, Kan Damarlarındaki Daralma Seviyesi ve Şekillerinin Tanısal Amaçlı Olarak Kullanımının Sayısal Benzetimlerle İncelenmesi, 2014 - 2016

SERT C., Project Supported by Higher Education Institutions, Cuda Programlama Aracı Kullanılarak Grafik Kartlarında Paralel Çalışacak Hesaplamalı Akışkanlar Dinamiği Kodu Geliştirilmesi, 2012 - 2012

SERT C., Project Supported by Higher Education Institutions, Gpu Üzerinde Paralel Çalışacak Şekilde Sonlu Eleman Tabanlı Akış Çözücüsü Geliştirilmesi Ve Biyolojik Akış Benzetimleri İçin Kullanımı, 2009 - 2010

Citations

Total Citations (WOS):167

h-index (WOS):7