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Professor of Mechanical Engineering

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EDUCATION

1969-1974	The University of Texas at Austin, Texas, USA, Computational Structural Mechanics, PhD.
1967-1969	The University of Texas at Austin, Texas, USA, Computational Structural Mechanics, MS.
1963-1967	Middle East Technical University, Ankara, Turkey, Civil Engineering, BS.

ACADEMIC POSITIONS

Mar 2010 – Present	Professor, Department of Mechanical Engineering, Atilim University, Turkey.
Apr 2003 – Mar 2010	Chancellor's Professor, Department of Mechanical Engineering, Indiana University-Purdue University Indianapolis (IUPUI), Indiana, USA.
May 1985 – Apr 2003	Professor, Department of Mechanical Engineering, Indiana University-Purdue University Indianapolis (IUPUI), Indiana, USA.
Nov 1979 – May 1985	Associate Professor, Department of Mechanical Engineering, Indiana University-Purdue University Indianapolis (IUPUI), Indiana, USA.
May 1979 – Nov 1979	Associate Professor, Department of Civil Engineering, Middle East Technical University (METU), Ankara, Turkey.
Sep 1974 – May 1979	Assistant Professor, Department of Civil Engineering, Middle East Technical University (METU), Ankara, Turkey.

ADMINISTRATIVE DUTIES

Nov 2018 – Present	Chair, Department of Automotive Engineering, Atilim University, Ankara, Turkey.
Sep 2017 – July 2018	Director of Research and Technology Transfer, Atilim University, Ankara, Turkey.
Mar 2010 – July 2017	Provost (Vice Rector), Atilim University, Ankara, Turkey.
Sep 2009 – Jan 2010	Associate Dean of Engineering and Technology, Indiana University-Purdue University Indianapolis (IUPUI), Indiana, USA.
Sep 2000 – Aug 2009	Chair, Department of Mechanical Engineering, Indiana University-Purdue University Indianapolis (IUPUI), Indiana, USA.
Sep 1976 – Nov 1979	Associate Chair, Department of Civil Engineering, Middle East Technical University, Ankara, Turkey.

HONORS&AWARDS

1	Center for Research and Learning Director's Award for Distinguished Mentor, IUPUI, 2007.
2	Fellow, American Society of Mechanical Engineers (ASME), 2004-Present.

3	Chancellor's Professor of Mechanical Engineering, IUPUI, 2003-2010.
4	Member, Alliance of Indiana University Distinguished and Titled Professors, 2003-2010 (http://alliance.iu.edu/members/past/index.phtml).
5	Dorris H. Merritt Outstanding Leadership Award, School of Engineering and Technology, IUPUI, 2002.
6	The School of Engineering and Technology Dean's Special Award for Distinguished Contributions to the School, IUPUI, 1999.
7	TERA Teaching Excellence Recognition Award, IUPUI, 1997.
8	Abe Max Distinguished Professor Award for Research, School of Engineering and Technology, 1993.
9	NATO Scholarship of The Scientific and Technical Research Council of Turkey (to study PhD at The University of Texas at Austin), 1971-1973.
10	Fulbright-Hays Scholarship of U.S. State Department (to study Master's at The University of Texas at Austin), 1967-1968.

RESEARCH INTERESTS

1	Computational Mechanics
2	Computational Fluid Dynamics
3	Computational Solid Dynamics
4	High Performance Parallel Computing
5	Finite Element and Finite Volume Methods
6	Multidisciplinary Topology Optimization

PROFESSIONAL SERVICE

1	Associate Editor, International Journal of Computational Fluid Dynamics
2	Technical Consultant, EDA Engineering and Design Ltd., 2004-Present
3	Technical Consultant, Technalysis, Inc., Indianapolis, IN, 1985-2010
4	Technical Consultant, Allison Transmission Company, Indianapolis, IN, 1983-1985

JOURNAL PUBLICATIONS

1	H.U. Akay, E. Oktay, M. Manguoglu, A.A. Sivas, "Improved Parallel Preconditioners for Multidisciplinary Topology Optimizations," International Journal of Computational Fluid Dynamics, Vol. 30, pp. 333-336, 2016.
2	E. Oktay, H.U. Akay, O.T. Sehitoglu, "Three-Dimensional Structural Topology Optimization of Aerial Vehicles Under Aerodynamic Loads," <i>Computers and Fluids</i> , Vol. 92, pp. 225-232, 2014.
3	E. Oktay, H.U. Akay, and O. Merttopcuoglu, "Parallelized Structural Topology Optimization and CFD Coupling for Design of Aircraft Wing Structures," <i>Computers and Fluids</i> , Vol. 49, pp. 141-145, 2011.
4	J. Liu, H.U. Akay, A. Ecer, and R.U. Payli, "Flow Around Moving Bodies Using a Dynamic Unstructured Overset-grid Method," Int. J. Computational Fluid

	Dynamics, Vol. 24, N. 6, pp. 187-200, 2010.
5	N. Nayan, H.U. Akay, M.R. Walsh, W.V. Bell, G.L. Troyer, R.E. Dukes, and P. Mohan, "CFD Modeling of Pharmaceutical Isolators with Experimental Verification of Airflow," <i>PDA J. Pharmaceutical Science and Technology</i> , pp. 237-254, 2007.
6	J. Koh, A.T. Hsu, H.U. Akay, and M.F. Liou, "Analysis of Overall Heat Balance in Self-Heated Proton-Exchange-Membrane Fuel Cells for Temperature Predictions," <i>Journal of Power Sources</i> , No. 144, pp. 122-128, 2005.
7	M. Pikal, S. Chen, and H.U. Akay, "Glass Transition Models in Freeze Drying," <i>Pharmaceutical Development and Technology</i> , Vol. 10, No. 1, pp. 17-32, 2005.
8	R.M. Pidaparti, P.W. Longest, A.T. Hsu, and H.U. Akay, "Nanoscale Computational Analysis for an Idealized Bio-molecular Motor," <i>Bulletin of the Polish Academy of Sciences, Technical Sciences</i> , Vol. 53, No. 4, 2005.
9	E. Oktay, H.U. Akay, and A. Uzun, "A Parallelized 3D Unstructured Euler Solver for Unsteady Aerodynamics," <i>AIAA Journal of Aircraft</i> , Vol. 40, No. 2, pp. 348-354, 2003.
10	H.U. Akay, Y. Liu, and M. Rassaian, "Simplification of Finite Element Models for Thermal Fatigue Life Prediction of PBGA Packages," <i>ASME Journal of Electronic Packaging</i> , Vol. 125, pp. 347-353, 2003.
11	E. Yilmaz, M.S. Kavsoglu, H.U. Akay, and I.S. Akmandor, "Cell-vertex Based Parallel and Adaptive Explicit 3D Flow Solution on Unstructured Grids," <i>International Journal of Computational Fluid Dynamics</i> , Vol. 14, pp. 271-286, 2001.
12	Y.P. Chien, A. Ecer, H.U. Akay, S. Secer, and J.D. Chen, "Cost Estimation for Parallel CFD Using Variable Time-Stepping Algorithms," <i>International Journal of Computational Fluid Dynamics</i> , Vol. 15, pp. 183-195, 2001.
13	S. Kocak and H.U. Akay, "Parallel Schur Complement Method for Large-Scale Systems on Distributed Memory Computers," <i>Journal of Applied Mathematical Modeling</i> , Vol. 25, pp. 873-886, 2001.
14	Y.P. Chien, A. Ecer, H.U. Akay, S. Secer, and R. Blech, "Communication Cost Estimation for Parallel CFD Using Variable Time-Stepping Algorithms," <i>Computer Methods in Applied Mechanics and Engineering</i> , Vol. 19, pp. 1379-1389, 2000.
15	A. Ecer, N. Gopaldaswamy, H.U. Akay, and Y.P. Chien, "Digital Filtering Techniques for Parallel Computation of Explicit Schemes," <i>International Journal of Computational Fluid Dynamics</i> , Vol. 13, pp. 211-222, 2000.
16	H.U. Akay, A. Ecer, and K. Fekete, "A Semi-Explicit Parallel Solver for Viscous Incompressible Flows," <i>Computer Methods in Applied Mechanics and Engineering</i> , Vol. 151, pp. 1-12, 1998.
17	N. Gopaldaswamy, A. Ecer, H.U. Akay, and Y.P. Chien, "Efficient Parallel Communication Schemes for Explicit CFD Solvers," <i>AIAA Journal</i> , pp. 961-967, 1998.
18	H.U. Akay, N.H. Paydar, G. Glogas, and H. Zhang, "Viscoelastic Study of a Conductive Adhesive for Electronic Packages – Part 1: Experimental Determination of Material Properties," <i>International Journal of Microelectronic Packaging</i> , Vol. 1, pp. 217-224, 1998.
19	H.U. Akay, N.H. Paydar, G. Glogas, and H. Zhang, "Viscoelastic Study of a Conductive Adhesive for Electronic Packages – Part 2: Thermal Stress Analysis Using the Finite Element Method," <i>International Journal of Microelectronic Packaging</i> , Vol. 1, pp. 225- 233, 1998.
20	H.U. Akay, N.H. Paydar, A. Bilgic, "Fatigue Life Predictions for Thermally Loaded Solder Joints Using a Volume-Weighted Averaging Technique," <i>ASME</i>

	<i>Journal of Electronic Packaging</i> , Vol. 119, pp. 228-235, 1997.
21	N. Gopaldaswamy, H.U. Akay, A. Ecer, and Y.P. Chien, "Parallelization and Dynamic Load Balancing of NPARC Codes," <i>AIAA Journal</i> , Vol. 35, 1997, pp. 1806-1812.
22	W.J. Mascarenhas, H.U. Akay, and M.J. Pikal, "A Computational Model for Finite Element Analysis of the Freeze-Drying Process," <i>Computer Methods in Applied Mechanics and Engineering</i> , Vol. 148, 1997, pp. 105-124.
23	B.K. Karamete, H.U. Akay, T. Tokdemir, and M. Ger, "A Simple Unstructured Tetrahedral Mesh Generation Algorithm for Complex Geometries," <i>Mathematical and Computer Modeling</i> , Vol. 24, No. 10, 1996, pp. 97-102.
24	H.U. Akay and A. Ecer, "Parallel Computation of Unsteady Flows on Network of Workstations," <i>International Journal of Computational Fluid Dynamics</i> , Vol. 7, 1996, pp. 15-21.
25	H. Huang, O. Gurdogan, H.U. Akay, and W.W. Fincher, "Thermal Transport Phenomena in Metal Casting Simulations," <i>AFS Transactions</i> , Vol. 103, 1995, pp. 243-252.
26	T.R. Katona, N.H. Paydar, H.U. Akay, and W.E. Roberts, "Stress Analysis of Bone Modeling Response to Rat Molar Orthodontics," <i>Journal of Biomechanics</i> , Vol. 28, 1995, pp. 27-38.
27	Y.P. Chien, F. Carpenter, A. Ecer, and H.U. Akay, "Load Balancing for Parallel Computation of Fluid Dynamics Problems," <i>Computer Methods in Applied Mechanics and Engineering</i> , Vol. 120, 1995, pp. 119-130.
28	N. Paydar, Y. Tong, and H.U. Akay, "A Finite Element Study of Factors Affecting Fatigue Life of Solder Joints," <i>ASME Journal of Electronic Packaging</i> , Vol. 116, 1994, pp. 265-273.
29	L.G. Reifschneider and H.U. Akay, "Applications of a Fiber Orientation Prediction Algorithm for Compression Molded Parts with Multiple Charges," <i>Polymer Composites</i> , Vol. 15, No. 4, August 1994, pp. 261-269.
30	F. Ladeinde and H.U. Akay, "The Calculation of Scalar Transport During the Injection Molding of Thermoset Polymers," <i>Applied Mathematical Modeling</i> , Vol. 18, June 1994, pp. 347-357.
31	J. Chen, X. Lu, N. Paydar, H.U. Akay, and W.E. Roberts, "Mechanical Simulation of the Human Mandible with and without an Endosseous Implant," <i>Medical Engineering Physics</i> , Vol. 16, January 1994, pp. 53-61.
32	Y.P. Chien, A. Ecer, H.U. Akay, F. Carpenter, and R.A. Blech, "Dynamic Load Balancing on a Network of Workstations for Solving Computational Fluid Dynamics Problems," <i>Computer Methods in Applied Mechanics and Engineering</i> , Vol. 119, 1994, pp. 17-33.
33	M.P. Reddy, L.G. Reifschneider, J.N. Reddy, and H.U. Akay, "Accuracy and Convergence of Element-By-Element Iterative Solvers for Incompressible Fluid Flows Using Penalty Finite Element Model," <i>International Journal for Numerical Methods in Fluids</i> , Vol. 17, 1993, pp. 1019-1033.
34	A. Ecer, H.U. Akay, W.B. Kemle, H. Wang, D. Ercoskun, and E.J. Hall, "Parallel Computation of Fluid Dynamics Problems," <i>Computer Methods in Applied Mechanics and Engineering</i> , Vol. 112, 1994, pp. 91-108.
35	H.U. Akay, Y. Tong, and N. Paydar, "Thermal Fatigue Analysis of an SMT Solder Joint Using Nonlinear FEM Approach," <i>International Journal of Microcircuits and Electronic Packaging</i> , Vol. 16, 1993.
36	M.P. Reddy, J.N. Reddy, and H.U. Akay, "Penalty-Finite Element Analysis of Incompressible Flows Using Element-By-Element Solution Algorithms," <i>Computer Methods in Applied Mechanics and Engineering</i> , Vol. 100, 1992, pp. 169-205.

37	D.B. Burr, H.U. Akay, N. Paydar, and S. Mori, "Locally High Shear Stresses Are Associated With Stress Fracture Location," <i>Trans. Orthopedic Research Societies</i> , Vol. 17, 1992, pp. 17- 33.
38	W.E. Roberts, N. Paydar, and H.U. Akay, "Finite Element Analysis of Mechanically Induced Bone Formation in Rat Molar Periodontal Ligament," <i>ASGSB Bulletin</i> , 4:33, 1990.
39	H.U. Akay, A. Ecer, and P.G. Willhite, "Finite Element Solutions of Euler Equations for Lifting Airfoils," <i>AIAA Journal</i> , Vol. 24, No. 4, 1986, pp. 27-35.
40	H.U. Akay and A. Ecer, "Applications of a Finite Element Algorithm for the Solution of Steady Transonic Euler Equations," <i>AIAA Journal</i> , Vol. 21, 1983, pp. 1518-1524.
41	A. Ecer and H.U. Akay, "A Finite Element Formulation of Euler Equations for the Solution of Steady Transonic Flows," <i>AIAA Journal</i> , Vol. 21, 1983, pp. 343-350.
42	H.U. Akay and A. Ecer, "Finite Element Analysis of Transonic Flows in Highly Staggered Cascades," <i>AIAA Journal</i> , Vol. 20, 1982, pp. 410-416.
43	A. Ecer and H.U. Akay, "Investigation of Transonic Flow in a Cascade Using the Finite Element Method," <i>AIAA Journal</i> , Vol. 19, 1981, pp. 1174-1182.
44	H.U. Akay and A. Ecer, "Transonic Flow Computations in Cascades Using Finite Element Method," <i>ASME Journal of Engineering Power</i> , Vol. 103, 1981, pp. 657- 664.
45	H.U. Akay and A. Ecer, "Finite Element Analysis of Transonic Flows in Highly Staggered Cascades," <i>AIAA Journal</i> , Vol. 20, 1982, pp. 410-416.
46	E. Aydinlik and H.U. Akay, "Effect of Resilient Layer in a Removable Partial Denture Base on Stress Distribution of the Mandible," <i>The Journal of Prosthetic Dentistry</i> , Vol. 44, July 1980, pp. 17-20.
47	H.U. Akay, "An Investigation of First- and Second-Order Mixed Plate Bending Problems," <i>International Journal for Numerical Methods in Engineering</i> , Vol. 15, March 1980, pp. 351-360.
48	H.U. Akay, "Dynamic Large Deflection Analysis of Plates Using Mixed Finite Elements," <i>Computers and Structures</i> , Vol. 10, January 1980, pp. 1-11.
49	N. Akkas, H.U. Akay, and C. Yilmaz, "Applicability of General-Purpose Finite Element Computer Programs in Solid-Fluid Interaction Problems," <i>Computers and Structures</i> , Vol. 10, July 1979, pp. 773-783.
50	H.U. Akay, C.P. Johnson, and K.M. Will, "Lateral and Local Buckling of Beams and Frames," <i>ASCE Journal of Structural Division</i> , Vol. 103, September 1977, pp. 1821-1832.
51	A. Ertepinar and H.U. Akay, "Radial Oscillations of Nonhomogeneous Thick- \square Walled Cylindrical and Spherical Shells Subjected to Finite Deformations," <i>International Journal of Solids and Structures</i> , Vol. 12, 1976, pp. 131-138.
52	J.T. Oden, H.U. Akay, and C.P. Johnson, "The Effect of Higher Order Terms in Certain Finite Element Models," <i>AIAA Journal</i> , Vol. 11, November 1973, pp. 34-36.

PROJECTS

1	"Addition of Structural and Thermal Design Capabilities to CAEeda Software," TUBITAK, TEYDEB, 04/2012 – 12/2014. Consultant for EDA Ltd.
2	"Development of an Aerodynamic and Structural Shape Optimization and Automation Software," TUBITAK, TEYDEB, 01/2015 – 06/2017. Consultant for EDA Ltd.
3	"Development of a Tanker Transportation Simulation Software," TUBITAK, TEYDEB, 09/2017 – 06/2020. Consultant for EDA Ltd.
4	"Development of an Incompressible Overset Mesh Interface for Unstructured Mesh Generator MESHeda," EDA Ltd, \$41,922, 10/2008 - 09/2009. Principal Investigator.
5	"Development of Computational Fluid Dynamics Models for Improving Performance of Pharmaceutical Isolators, Phases 1 and 2," Eli Lilly and Company, \$283,542, 04/2004 - 05/2008. Principal Investigator.
6	"Parallelization and Development of Solid-Fluid Interaction Models for Aeroelasticity," Aeronautical Engineering Department, Middle East Technical University, \$57,507, 8/1999 - 12/2002. Principal Investigator.
7	"Dynamic Load Balancing on Heterogeneous Systems," NASA Glenn Research Center, \$200,000, 9/1999 - 9/2000. Co-Investigator.
8	"Establishment of a Parallel Network of IBM RS/6000 Computers at the CFD Laboratory," IBM Corporation, \$152,730, 12/1998 - 12/1999, Co-Principal Investigator.
9	"Methods for Improving the Efficiency of Heterogeneous Parallel Computation of Internal Flows," NASA Lewis Research Center, \$240,000, 11/1997 - 10/1990. Co-Principal Investigator.
10	"Benchmarking of FEA Capabilities for Structural Analysis," \$59,000, 3/1998 - 3/1999, Raytheon Technical Services. Principal Investigator.
11	"Prediction of Fatigue Life of Solder Joints Under Thermal Loads," \$41,006, 5/1996 - 4/1997, United Technology/Carrier Electronics, Principal Investigator.
12	"Establishment of Distributed Computing," Dassault Aviation, France, \$20,730, 09/1996 - 02/1997. Co-principal Investigator.
13	"Prediction of Fatigue Life of Solder Joints Under Thermal Loads," Carrier Electronics, Huntington, IN, \$41,006, 05/1996 - 04/1997. Principal Investigator.
14	"Parallel CFD on Heterogeneous Workstations," Dassault Aviation, France, \$18,000, 1996. Co-Principal Investigator.
15	"Parallel Computation of Unsteady Flows on a Network of Workstations," NASA Lewis Research Center, Cleveland, Ohio, \$223,490, 03/1994 - 12/1996. Co-principal Investigator.
16	"Industry/University Cooperative Research Center for Advanced Electronics Interconnects," Cummins Electronics, \$10,000, 11/1/1994- 10/31/1996. Co-Principal Investigator.
17	"Industry/University Cooperative Research Center for Advanced Electronics Interconnects," Delco Electronics, Kokomo, IN, \$30,000, 11/1/94 - 10/31/96. Co-Principal Investigator.
18	"Industry/University Cooperative Research Center for Advanced Electronics Interconnects," Rockwell International, \$20,000, 11/1/1994 - 10/31/1996. Co-Principal Investigator.
19	"Conductive Epoxy Materials Research," US Naval Air Warfare Center, Indianapolis, IN, \$55,076, 9/1/94 - 9/13/95. Co-Principal Investigator.
20	"Lead Solder Alternatives," US Naval Air Warfare Center, Indianapolis, IN, \$8,000, 01/1994 - 1/1995. Co-Principal Investigator.

21	"Dynamic Load Balancing for Parallel Computations," NASA Lewis Research Center, Cleveland, Ohio, \$15,300, 1994. Co-Principal Investigator.
22	"A Computational Grid-Oriented Data Base for Parallel Computation of Turbomachinery Problems," NASA Lewis Research Center, \$223,880, 01/1991 - 01/1993. Co-Principal Investigator.
23	"Coupling of Unsteady Flows with Structural Deformations," Dassault Aviation, France, \$25,000, 1991 - 1993. Co-Principal investigator.
24	"Automated Finite Element Modeling of Circuit Card Assemblies," US Army Research Office, \$100,000, 07/1991 - 06/1993. Co-Principal Investigator.
25	"Parallel Computations on IBM 3090 Supercomputer," IBM Research Center, Kingston, New York, \$100,000, 01/1987 - 01/1993. Co-Principal Investigator.
26	"Numerical Simulation of Unsteady Compressible Euler Flows," Ministere de la Defense, France, \$25,000, 1990 - 1991. Co-Principal Investigator.
27	"A Block-Structured Finite Element Analysis of Wing-Nacelle Configurations," General Electric, Cincinnati, Ohio, \$65,000, 01/1987 - 01/1990. Co-Principal Investigator.
28	"Parallel Processing of Multi-Stage Turbomachinery," NASA Lewis Research Center, Cleveland, Ohio, \$134,000, 01/1988 - 01/1991. Co-Principal Investigator.
29	"Solution of Unsteady Euler Equations," Dassault Aviation, France, \$17,040, 01/1989 - 05/1990. Co-Principal Investigator.
30	"Analysis of Three-Dimensional Flows Through Blade Passages of Hydraulic Retarders and Torque Converters," Detroit Diesel Allison Division of GM, Indianapolis, IN, \$49,500, 1984 - 1985. Co-Principal Investigator.
31	"Finite Element Analysis of Flows Through Turbine Volute," Schwitzer Corporation, Indianapolis, IN, \$8,000, 01/1984 - 12/1984. Co-Principal Investigator.
32	"A Zonal Approach to the Design of Finite Element Grids for 3-D Transonic Flows with Complex Geometries," US Air Force, Office of Scientific Research, \$122,962, 09/1983 - 09/1986. Co-Investigator.
33	"Analysis of Three-Dimensional Transonic Potential Flows Using Optimum Grids," US Air Force, Office of Scientific Research, \$143,978, 09/1981 - 09/1983. Co-Investigator.
34	"Finite Element Analysis of Transonic Flow Through a Cascade of Airfoils Using a Self Adaptive Mesh," NASA Research Center, \$203,947, 01/1980 - 12/1983. Co-Principal Investigator.

CONFERENCE PRESENTATIONS (RECENT)

1	Erdal Oktay, Anil Arpacı, Onur T. Sehitoglu, and Hasan U. Akay, 'A Parallel Aerostructural Shape Optimization Platform for Airplane Wings,' 31 st Int. Conference on Parallel Computational Fluid Dynamics, Antalya-Turkey, May 14-17, 2019.
2	Saleh K. Abuhanieh and Hasan U. Akay, 'Parallel CFD Modeling of Cold Flow in Gas Circuit Breakers,' 31 st Int. Conference on Parallel Computational Fluid Dynamics, Antalya-Turkey, May 14-17, 2019.
3	Seghaer H. Edeeb, Hasan U. Akay, and Serkan Ozden, 'Experiences with Parallel Ice Accretion Simulations of Airplane Wings Using OpenFOAM,' 31 st Int. Conference on Parallel Computational Fluid Dynamics, Antalya-Turkey, May 14-17, 2019.
4	Hasan U. Akay, Niyazi Senol, Ahmet Eraslan, 'Parallel Solution of Flow Topology Optimization Problems on OpenFoam Platform, 30 th Int. Conference on Parallel Computational Fluid Dynamics, Indianapolis, Indiana, USA, May 14-17, 2018.
5	H.U. Akay, E. Oktay, M. Manguoglu, A.A. Sivas, "Improved Parallel

	Preconditioners for Multiphysics Topology Optimizations," 27 th International Conference on Parallel Computational Fluid Dynamics,' Montreal, Canada, pp 174-176, May 17-20, 2015.
6	'Development of Integrated Engineering Analysis and Design Tools from Solid Modeling to Design Optimization', Parallel Computational Fluid Dynamics Conference, National Supercomputing Center, Changsha, Hunan, China, May 20-24, 2013 (invited talk).
7	E. Oktay and H.U. Akay, "Structural Topology Optimization Under Aerodynamic Loads Using PETSc as a Parallel Solver," Parallel CFD 2012, Atlanta, GA, USA, May 20-24, 2012.
8	E. Oktay, H.U. Akay, O. Merttopcuoglu, C. Sener, "Parallelized Structural Topology Optimization and CFD Coupling for Design of Aircraft Structures," Parallel CFD 2010, Taiwan, May 17-21, 2010.
9	H.U. Akay, R. Payli, J. Liu, and Akin Ecer, "An Overset Unstructured Grid Method for Parallel Solvers," <i>Parallel CFD 2009</i> , NASA Ames Research Center, Moffett Field, CA, May 18-22, 2009.
10	E. Oktay, O. Merttopcuoglu, C. Sener, A. Ketenci, and H.U. Akay, "Parallel Shape Optimization of a Missile on a Grid Infrastructure," <i>Parallel CFD 2008</i> , Edited by D. Tromeur-Dervout, et al., Springer- Verlag, pp. 51-60, 2010.
11	E. Yilmaz, R.U. Payli, H.U. Akay, A. Ecer, and J. Liu, "Scalability Considerations of a Parallel Flow Solver on Large Scale Computing Systems," <i>Parallel CFD 2008</i> , Edited by D. Tromeur-Dervout, et al., Springer-Verlag, pp. 321-330, 2010.
12	S. Chien, G. Makinabakan, A. Ecer, and H.U. Akay, "Dynamic Load Balancing on Windows Based Multi-core PCs," <i>Parallel CFD 2008</i> , Edited by D. Tromeur-Dervout, et al., Springer-Verlag, pp. 339-346, 2010.

CITATIONS

Sum of times cited without self-citations (ISI Web of Science):	453
H-index (ISI Web of Science):	13

COURSES GIVEN AT ATILIM UNIVERSITY

1	AE 307 Fluid Mechanics I
2	ME 302 Fluid Mechanics II
3	ME 437 Introduction to Computational Fluid Dynamics

THESES SUPERVISED

1	Saleh Abu Hanieh, PhD, Thesis: "Magnetohydrodynamic Simulation Models for Circuit Breakers Using OpenFoam," Atilim University, In Progress.
2	Sogair Edeeb, PhD, Thesis: "Simulation of Icing on Aircraft Wings Using OpenFoam," Atilim University, February 2019.
3	Niyazi Şenol, MSME, Thesis : "Topology Optimization of Thermal Fluid Problems Using OpenFoam," METU, February 2019. Co-advisor.
4	Jingxin Liu, PhD, Thesis: " <i>Simulating Unsteady Flow of Moving Flow and Control Valves by an Unstructured Overset Grid Method</i> ," December 2008.
5	Cai Shen, MSME, Thesis: " <i>CFD Models for Flow and Mass Transfer of Hydrogenperoxide in Pharmaceutical Isolators</i> ," December 2008.

6	Cem Ersungur, MSME, Thesis: <i>"Kinetic Monte Carlo Molecular Simulations for Fuel Cell Applications and Surface Reactions,"</i> August 2007.
7	Amit Baddi, MSME, Thesis: <i>"Parallel Computations of Solid-Fluid Interactions Problems,"</i> December 2005.
8	Xiaoyin He, MSME, Thesis: <i>"Parallel Computations of Solid-Fluid Interactions Using Arbitrary Lagrangian-Eulerian and Relative Coordinate Formulations,"</i> IUPUI, May 2004.
9	Zhenyin Li, MSME, Thesis: <i>"Parallel Computations of 3D Unsteady Compressible Euler Equations with Structural Coupling,"</i> IUPUI, August 2002.
10	Yan Liu, MSME, Thesis: <i>"Simplified 2D/3D Models for Fatigue Life Prediction of BGA Solder Joints of Electronic Packages,"</i> IUPUI, August 2001.
11	Christoffer Bronnenberg, MSME, Thesis: <i>"An Unstructured Grid Partitioning Program For Parallel Computational Fluid Dynamics,"</i> IUPUI, August 1999.
12	Ali Uzun, MSME, Thesis: <i>"Parallel Computations of Unsteady Euler Equations on Dynamically Deforming Unstructured Grids,"</i> IUPUI, August 1999.
13	Jamie Workman, MSME, Thesis: <i>"3D Unstructured Grids for Unsteady Compressible Flows,"</i> IUPUI, August 1999.
14	Gunasekaran Kaliappan, MSME, Thesis: <i>"A Comparative Evaluation of Fatigue Life Prediction Methods for Solder Joint Assemblies,"</i> IUPUI, May 1999.
15	Hongyan Zhang, MSME, Thesis: <i>"Combined Heat Transfer and Thermal Stress Analysis of Power Resistor Assemblies for Fatigue Life Predictions,"</i> IUPUI, May 1998.
16	Karoly Fekete, MSE, Thesis: <i>"A Domain Decomposition Based Parallel Solver for Incompressible Navier-Stokes Equations Using the Finite Element Method,"</i> IUPUI, August 1997.
17	Ahmet B. Acikmese, MSME, Thesis: <i>"Parallel Computations of Unsteady Compressible Viscous Flows Using the Finite Element Method,"</i> IUPUI, May 1996.
18	Geoffrey L. Glogas, MSME, Thesis: <i>"Experimental Study of Viscoelastic Properties of a Conductive Adhesive for Electronic Packaging,"</i> IUPUI, May 1996.
19	Altug Bilgic, MSME, Thesis: <i>"Fatigue Life Prediction Methods for Thermally Loaded Solder Joints Using the Finite Element Method,"</i> IUPUI, May 1996.
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21	Yuehua Chen, MSME, Thesis: <i>"Parallel Solution of Unsteady Compressible Euler Equations Using the Finite Element Method,"</i> IUPUI, August 1995.
22	Ozan Selcuk, MSME, Thesis: <i>"Parallel Solution of Coupled Unsteady Compressible Flow and Aeroelasticity Equations,"</i> IUPUI, August 1994.
23	William B. Kemle, MSME, Thesis: <i>"Parallel Implementation of a Three-Dimensional Unsteady Potential Finite Element Flow Solver,"</i> May 1993.
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