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EDUCATION

Ph.D., *Mechanical Engineering*, **The Ohio State University**, USA, 1998
Dissertation Title: "Investigation of High Speed Flat End Milling Process-Prediction of Chip Formation, Cutting Forces, Tool Stresses and Temperatures"
Advisor: Taylan Altan, Professor and Director of Engineering Research Center for Net Shape Manufacturing
M.S., *Mechanical Engineering*, **Dokuz Eylul University**, Izmir, Turkey, 1991
B.S., *Aeronautical Engineering*, **Istanbul Technical University**, Istanbul, Turkey, 1987

EXPERIENCE

Associate Professor (with tenure) Department of Industrial and Systems Engineering, Rutgers, The State University of New Jersey, Piscataway, New Jersey, 07/2008 – present
Affiliated Faculty Director Rutgers Institute for Advanced Materials, Devices & Nanotechnology, 01/2009-present
Assistant Professor Manufacturing & Automation Research Laboratory, 01/2003-present
Assistant Professor Department of Industrial and Systems Engineering, Rutgers, The State University of New Jersey, Piscataway, New Jersey, 01/2002 – 06/2008
Faculty Fellow NASA Glenn Research Center, Cleveland, Ohio, 05/1999 – 09/1999
Assistant Professor Department of Industrial and Manufacturing Engineering, Cleveland State University, Cleveland, Ohio, 09/1998 – 12/2001
Research Associate NSF funded Engineering Research Center for Net Shape Manufacturing, The Ohio State University, Columbus, Ohio, 03/1996 – 09/1998
Graduate Fellow Department of Mechanical Engineering, The Ohio State University, Columbus, Ohio, 01/1994 – 02/1996
Research Assistant Department of Mechanical Engineering, Dokuz Eylul University, Izmir, Turkey, 09/1987 – 12/1993
Engineer in Training Turkish Airlines Maintenance Center, Istanbul, Turkey, 06/1986 – 09/1986
Engineer in Training BMC Automotive and Truck Manufacturing Company, Izmir, Turkey, 06/1985 – 06/1985

AWARDS AND HONORS

2010 Most Cited Articles 2005-2010 The Journal of Materials Processing Technology, Elsevier
2010 Most Cited Articles (#1 & #3) 2005-2010 International Journal of Machine Tools & Manufacture, Elsevier
2010 NSF Summer Fellowship "Principles of and Advances in Laser Micro/Nano Manufacturing Processes"
2010 Associate Member, CIRP-International Academy for Production Engineering
2009 Top Reviewer of the Journal of Materials Processing Technology
2009 NSF-CIRP General Assembly Fellowship
2008 Rutgers University FASIP Award for Research, Teaching and Service
2008 Machine Tool Technologies Research Foundation Award
2007 Rutgers FASIP Award for Research, Teaching and Service
2007 Associate Professor Title (Docent) awarded by Turkish Higher Education Council

- 2006 Rutgers Research Council Grant Award
- 2006 Rutgers FASIP Award for Research, Teaching and Service
- 2006 Nomination to Fraunhofer Bessel Research Award
- 2005 Rutgers Research Council Grant Award
- 2005 Rutgers FASIP Award for Research, Teaching and Service
- 2005 Nomination to **Best NAMRI Paper Award** with Y. Karpat, E. Zeren
- 2005 **Best Paper Award** in the 8th CIRP International Workshop on Modeling of Machining Operations with E. Zeren
- 2002 New Jersey Space Grant Consortium Award, NASA
- 1999 Summer Faculty Fellowship, NASA Glenn Research Center, Ohio
- 1999 New Faculty/ Research Challenge Award, Cleveland State University
- 1994 Fellowship from Turkish Higher Education Council

BOOKS

- *Modern Manufacturing Processes*, Edited by M. Koc, **T. Özel** and P. Bartolo, John Wiley & Sons, in process, 2012.
- *Micro-Manufacturing: Design and Manufacturing of Micro-Products*, Edited by M. Koc and **T. Özel**, John Wiley & Sons, ISBN: 978-0-470-55644-3 June 2011, Hardback 400 pp.
- *Intelligent Machining: Modeling and Optimization of the Machining Processes and Systems*, Edited by **T. Özel** and J. P. Davim, ISTE-Wiley, ISBN: 9781848211292 April 2009, Hardback 288 pp.

BOOK CHAPTERS

- **T. Özel**, T. Thepsonthi "Mechanical micro-machining", Chapter 8, (235-274) in *Micromanufacturing: Micromanufacturing: Design and Manufacturing of Micro-Products* (Ed.) M. Koc, T. Özel, John Wiley & Sons, 2011 ISBN: 978-0-470-55644-3.
- B.Wu & **T. Özel**, "Micro-laser processing", Chapter 6, (159-196) in *Micromanufacturing: Micromanufacturing: Design and Manufacturing of Micro-Products* (Ed.) M. Koc, T. Özel, John Wiley & Sons, 2011 ISBN: 978-0-470-55644-3.
- M.Koc & **T. Özel**, "Fundamentals of micro-manufacturing", Chapter 1, (1-24) in *Micromanufacturing: Micromanufacturing: Design and Manufacturing of Micro-Products* (Ed.) M.Koc, T. Özel, John Wiley & Sons, 2011 ISBN: 978-0-470-55644-3.
- L.N. Lopez De Lacalle, J. De Ciurana & **T. Özel**, "Modern machining processes", Chapter 1, (1-61) in *Intelligent Machining: Modelling and optimization of the Machining Processes and Systems* (Ed.) T. Özel, J.P. Davim, ISTE-Wiley, London, 2009 ISBN: 978-1-84821-129-2.
- P.J. Arrazola & **T. Özel**, "Finite element modeling of machining processes", Chapter 3, (125-163) in *Intelligent Machining: Modelling and optimization of the Machining Processes and Systems* (Ed.) T. Özel, J.P. Davim, ISTE-Wiley, London, 2009 ISBN: 978-1-84821-129-2.
- **T. Özel**, "Single and Multi-objective optimization methods", Chapter 6, (245-267) in *Intelligent Machining: Modelling and optimization of the Machining Processes and Systems* (Ed.) T. Özel, J.P. Davim, ISTE-Wiley, London, 2009 ISBN: 978-1-84821-129-2.

JOURNAL SPECIAL ISSUES

- T. Tawakoli and T. Özel, "New Developments in Grinding and Ultra-Precision Technology," *International Journal of Mechatronics and Manufacturing Systems*, Vol. 4 - Issue 6 – 2011.
- L. N. López de Lacalle and T.Özel, "Advances in Multi-Axis Machining and Machine Tool Control," *International Journal of Mechatronics and Manufacturing Systems*, Vol. 4 - Issue 3/4 – 2011.
- J. Ciurana and T. Özel, "Manufacturing Processes and Systems," *International Journal of Mechatronics and Manufacturing Systems*, Vol. 3 - Issue 5/6 – 2010.
- T. Özel, "Micro-Manufacturing Processes and Applications," *Materials and Manufacturing Processes International Journal*, Vol. 25, Issue 5, 2010.

- L. Deshayes, A. Donmez and T. Özel, "Smart Machining Systems", *International Journal of Mechatronics and Manufacturing Systems*, Vol. 2, No.4, 2009.
- T. Özel, A. Sabanovic and E. Uyar "Robotics and Manufacturing Automation," *International Journal of Mechatronics and Manufacturing Systems*, Vol.2, No.3, 2009.
- T. Özel and J.P. Davim, "Intelligent Machining-Computational Methods and Optimisation", *International Journal of Materials and Product Technology*, Vol. 35, No:1/2, 2009.
- T. Özel and J. P. Davim, "Advances in Hard Turning," *International Journal of Machining and Machinability of Materials*, Vol.3, No.3, 2008.
- T. Özel, "Experimental and Numerical Methods for Nanomanufacturing Processes," *International Journal of Nanomanufacturing*, Vol.3, No.3, 2009.

REFEREED JOURNAL ARTICLES (over 600 citations in ISI Web of Science, h-index: 13)

(The underline indicates current/former students, visiting scholars supervised; * indicates corresponding author; IF denotes Journal Impact Factor in corresponding year)

- [J1] **T. Özel*** and D. Ulutan, "Prediction of Machining Induced Residual Stresses in Turning of Titanium and Nickel Based Alloys with Experiments and Finite Element Simulations," *CIRP Annals- Manufacturing Technology*, 2012, accepted, Vol. 61, No. 2.
- [J2] T. Thepsonthi and **T. Özel***, "Multi-Objective Process Optimization for Micro-end Milling of Ti-6Al- 4V Titanium Alloy" *International Journal of Advanced Manufacturing Technology*, in press, DOI: 10.1007/s00170-012-3980-z.
- [J3] **T. Özel***, T. Thepsonthi, D. Ulutan, B. Kaftanoğlu, "Experiments and Finite Element Simulations on Micro-Milling of Ti-6Al-4V Alloy with Uncoated and cBN coated Micro-Tools," *CIRP Annals- Manufacturing Technology*, 2011, Volume 60, pp. 85–88.
- [J4] D. Ulutan, M. Sima and **T. Özel***, Prediction of Machining Induced Surface Integrity using Elastic-Viscoplastic Simulations and Temperature-Dependent Flow Softening Material Models in Titanium and Nickel-based alloys, *Advanced Materials Research*, Vol. 223, pp. 401-410, 2011.
- [J5] **T. Özel**, I. Llanos, J. Soriano, P.J. Arrazola*, "3D Finite Element Modelling of Chip Formation Process for Machining Inconel 718: Comparison of FE Software Predictions," *Machining Science and Technology*, Vol. 15, No.1, pp. 21-46, 2011.
- [J6] D. Ulutan and **T. Özel***, "Machining Induced Surface Integrity in Titanium and Nickel Alloys: A Review," *International Journal of Machine Tools and Manufacture*, 2011, Volume 51, pp. 250-280. [IF: 1.956].
- [J7] M. Alberti, J. Ciurana*, C.A. Rodriguez, **T. Özel**, "Design of A Decision Support System for Machine Tool Selection Based on Machine Characteristics and Performance Tests," *Journal of Intelligent Manufacturing*, 2011, Volume 22, Issue 2, pp. 263-277. [IF:1.018].
- [J8] M. Sima and **T. Özel*** "Modified Material Constitutive Models for Serrated Chip Formation Simulations and Experimental Validation in Machining of Titanium Alloy Ti-6Al-4V," *International Journal of Machine Tools and Manufacture*, 2010, Volume 50, Issue 11, pp. 943-960. [IF: 1.956].
- [J9] E. Vázquez, J. Ciurana, C.A. Rodríguez, T. Thepsonthi, **T. Özel***, "Swarm Intelligent Selection and Optimization of Machining System Parameters for Micro-channel Fabrication in Medical Devices," *Materials and Manufacturing Processes*, 2011, Volume 26(3), pp. 403-414. [IF:0.706]
- [J10] **T. Özel***, M. Sima, A.K. Srivastava and B. Kaftanoglu, "Investigations on the Effects of Multi-Layered Coated Inserts in Machining Ti-6Al-4V Alloy with Experiments and Finite Element Simulations," *CIRP Annals- Manufacturing Technology*, Volume 59, Issue 1, 2010, pp. 77-82. [IF: 1.123]

- [J11] **T. Özel***, M. Sima and A.K. Srivastava, "Finite Element Simulation of High Speed Machining Ti-6Al-4V Alloy using Modified Material Models," *Transactions of the NAMRI/SME*, 2010, Vol. 38, pp. 49-56. [IF: N/A]
- [J12] P.J. Arrazola, **T. Özel***, "Investigations on the Effects of Friction Modeling in Finite Element Simulation of Machining," *International Journal of Mechanical Sciences*, 2010, Vol. 52, No.1, pp. 31-42. [IF: 0.950]
- [J13] **T. Özel***, "Computational Modelling of 3-D Turning with Variable Edge Design Tooling: Influence of Micro-Geometry on Forces, Stresses, Friction and Tool Wear," *Journal of Materials Processing Technology*, 2009, Volume 209, Issue 11, pp. 5167-5177. [IF: 1.143]
- [J14] **T. Özel*** and X. Liu, "Investigations on Mechanics Based Process Planning of Micro-End Milling in Machining Mold Cavities," *Materials and Manufacturing Processes*, 2009, Vol. 24, No.12, pp. 1274-1281. [IF:0.706]
- [J15] N. Pellicer, J. Ciurana, **T. Özel***, "Influence of Process Parameters and Electrode Geometry on Feature Micro-Accuracy in Electro Discharge Machining of Tool Steel," *Materials and Manufacturing Processes*, 2009, Vol. 24, No.12, pp. 1281-1289. [IF:0.706]
- [J16] J. Ciurana, G. Arias, **T. Özel***, "Neural Network Modeling and Particle Swarm Optimization of Process Parameters in Pulsed Laser Micro-Machining of Hardened AISI H13 Steel," *Materials and Manufacturing Processes*, 2009, Vol.24, No. 3, pp. 358-368. [IF:0.706]
- [J17] W-H. Lee and **T. Özel***, "An Experimental Method for Laser Micro-Machining of Spherical and Elliptical 3-D Objects", *International Journal of Nanomanufacturing*, 2009, Vol.3 No.3, pp. 264 – 278. [IF: N/A]
- [J18] **T. Özel***, A. E. Correia and J. P. Davim, "Neural Network Process Modelling for Turning of Steel Parts using Conventional and Wiper Inserts," *International Journal of Materials and Product Technology*, 2009, Vol 35, No: 1/2, pp. 246-258. [IF:0.206]
- [J19] **T. Özel***, Y. Karpat, and A. Srivastava "Hard Turning with Variable Micro-Geometry PcBN Tools," *CIRP Annals: Manufacturing Technology*, 2008, Vol. 57 pp. 73–76. [IF:0.779]
- [J20] Y. Karpat and **T. Özel***, "Mechanics of High Speed Cutting with Curvilinear Edge Tools," *International Journal of Machine Tools and Manufacture*, Vol. 48, 2008, pp. 195-208. [IF:1.120]
- [J21] Y. Karpat and **T. Özel***, "Analytical and Thermal Modeling of High-Speed Machining with Chamfered Tools," *ASME Journal of Manufacturing Science and Engineering*, Vol. 130, Issue 1, February 2008, pp.1-15. [IF:0.595]
- [J22] A. Dhanorker and **T. Özel***, "Meso/Micro Scale Milling for Micromanufacturing," *International Journal of Mechatronics and Manufacturing Systems*, Vol.1, No.1, 2008, pp. 23-43. [IF:N/A]
- [J23] P. Arrazola* and **T. Özel**, "Numerical modelling of 3-D hard turning using Arbitrary Eulerian Lagrangian finite element method," *International Journal of Machining and Machinability of Materials*, Vol.3, No.3, 2008, pp. 238-249. [IF: N/A]
- [J24] Y. Karpat and **T. Özel***, "Process Simulations for 3-D Turning using Uniform and Variable Micro-Geometry PcBN Tools," *International Journal of Machining and Machinability of Materials*, Vol.3, No.3, 2008, pp. 250-262. [IF: N/A]
- [J25] **T. Özel*** and E. Zeren, "Numerical Modeling of Meso-Scale Finish Machining with Finite Edge Radius Tools," *International Journal of Machining and Machinability of Materials*, Vol. 2, Nos. 3/4, 2007, pp.451-468. [IF: N/A]

- [J26] **T. Özel*** and E. Zeren, "Finite Element Modeling of The Influence of Edge Roundness on The Stress and Temperature Fields Induced by High Speed Machining," *International Journal of Advanced Manufacturing Technology*, Vol. 35, No.3-4, December 2007, pp. 255-267. [IF:0.378]
- [J27] Y. Karpat and **T. Özel***, "Multi-Objective Optimization for Turning Processes Using Neural Network Modeling and Dynamic-Neighborhood Particle Swarm Optimization," *International Journal of Advanced Manufacturing Technology*, Vol. 35, No.3-4, December 2007, pp. 234-247. [IF:0.378]
- [J28] **T. Özel*** and Y. Karpat, "Identification of Constitutive Material Model Parameters for High-Strain Rate Metal Cutting Conditions Using Evolutionary Computational Algorithms," *Materials and Manufacturing Processes*, Vol. 22, 2007, pp.659-667. [IF:0.612]
- [J29] Y. Karpat and **T. Özel***, "3-D FEA of Hard Turning: Investigation of PCBN Cutting Tool Micro- Geometry Effects," *Transactions of North American Manufacturing Research Institute/SME*, Vol. 35, 2007, pp. 9-16. [IF: N/A]
- [J30] **T. Özel***, Y. Karpat, L. Figueira and J. P. Davim, "Modelling of Surface Finish and Tool Flank Wear in Turning of AISI D2 Steel with Ceramic Wiper Inserts," *Journal of Materials Processing Technology*, Vol. 189, 2007, pp. 192-198. [IF:0.615]
- [J31] Y. Karpat and **T. Özel***, "An Integrated Analytical Thermal Model for Orthogonal Cutting with Chamfered Tools," *Transactions of North American Manufacturing Research Institute/SME*, Vol. 34, 2006, pp.9-16. [IF: N/A]
- [J32] Y. Karpat and **T. Özel***, "Swarm-Intelligent Neural Network System (SINNS) Based Multi-Objective Optimization of Hard Turning," *Transactions of North American Manufacturing Research Institute/SME*, Vol. 34, 2006, pp.611-625. [IF: N/A]
- [J33] Y. Karpat and **T. Özel***, "Predictive Analytical and Thermal Modeling of Orthogonal Cutting Process. Part II: Effect of Tool Flank Wear on Tool Forces, Stresses and Temperature Distributions," *ASME Journal of Manufacturing Science and Engineering*, Vol. 128, May 2006, pp 445-453. [IF:0.595]
- [J34] Y. Karpat and **T. Özel***, "Predictive Analytical and Thermal Modeling of Orthogonal Cutting Process. Part I: Predictions of Tool Forces, Stresses and Temperature Distributions," *ASME Journal of Manufacturing Science and Engineering*, Vol. 128, May 2006, pp. 435-444. [IF:0.595]
- [J35] **T. Özel***, "Influence of Friction Models on Finite Element Simulations of Machining," *International Journal of Machine Tools and Manufacture*, Vol. 46, Issue 5, 2006, pp. 518-530. [IF:1.120] Ranked 4th in Top 25 Articles of IJMTM by ScienceDirect.com in 2006.
- [J36] **T. Özel*** and E. Zeren, "A Methodology to Determine Work Material Flow Stress and Tool-Chip Interfacial Friction Properties by Using Analysis of Machining," *ASME Journal of Manufacturing Science and Engineering*, Vol. 128, February 2006, pp. 119-129. [IF: 0.595]
- [J37] **T. Özel***, "Precision Tracking Control of A Horizontal Arm Coordinate Measuring Machine in Presence of Dynamic Flexibilities," *International Journal of Advanced Manufacturing Technology*, Vol. 27, No. 9-10, February 2006, pp. 960 - 968. [IF:0.418]
- [J38] Y. Karpat, E.Zeren and **T. Özel***, "Workpiece Material Model Based Predictions for Machining Processes," *Transactions of North American Manufacturing Research Institute/SME*, Vol. 33, 2005, pp. 413-420. Nominated for Best NAMRI Paper Award in 2005. [IF: N/A]
- [J39] Y. Karpat and **T. Özel***, "Hard Turning Optimization Using Neural Network Modeling and Swarm Intelligence," *Transactions of North American Manufacturing Research Institute/SME*, Vol. 33, 2005, pp. 179-186. [IF: N/A]

- [J40] T. Özel* and Y. Karpat, "Predictive Modeling of Surface Roughness and Tool Wear in Hard Turning Using Regression and Neural Networks," *International Journal of Machine Tools and Manufacture*, Vol. 45, 2005, pp. 467-479. [IF:1.120] Ranked 1st in Top 25 Articles of IJMTM by ScienceDirect.com in 2005.
- [J41] T. Özel*, T.-K. Hsu and E. Zeren, "Effects of Cutting Edge Geometry, Workpiece Hardness, Feed Rate and Cutting Speed on Surface Roughness and Forces in Finish Turning of Hardened AISI H13 Steel," *International Journal of Advanced Manufacturing Technology*, Vol. 25, 2005, pp. 262-269. [IF:0.378]
- [J42] T. Özel* and E. Zeren, "Determination of Work Material Flow Stress and Friction For FEA of Machining Using Orthogonal Cutting Tests," *Journal of Materials Processing Technology*, Vol. 153-154C, 2004, pp. 1019-1025. [IF:0.816]
- [J43] T. Özel*, "Modeling of Hard Part Machining: Effect of Insert Edge Preparation for CBN Cutting Tools", *Journal of Materials Processing Technology*, Vol. 141, 2003, pp. 284-293. [IF:0.816]
- [J44] T. Özel* and A. Nadgir, "Prediction of Flank Wear by Using Back Propagation Neural Network Modeling When Cutting Hardened H-13 Steel with Chamfered and Honed CBN Tools," *International Journal of Machine Tools and Manufacture*, Vol. 42, 2002, pp. 287-297. [IF:1.120]
- [J45] T. Özel* and T. Altan, "Process Simulation using Finite Element Method- Prediction of Cutting Forces, Tool Stresses and Temperatures in High-Speed Flat End Milling," *International Journal of Machine Tools and Manufacture*, Vol. 40, 2000, pp. 713-738. [IF:1.120]
- [J46] T. Özel* and T. Altan, "Determination of Workpiece Flow Stress and Friction at The Chip-Tool Contact for High-Speed Cutting," *International Journal of Machine Tools and Manufacture*, Vol. 40, 2000, pp. 133-152. [IF:1.120]
- [J47] P. Fallböhmer, C.A. Rodriguez, T. Özel and T. Altan*, "High Speed Machining of Cast Iron and Alloy Steels for Die and Mold Manufacturing," *Journal of Materials Processing and Technology*, 2000, Vol. 98, pp. 104-115. [IF:0.592]
- [J48] T. Özel, M. Lucchi, C. Rodriguez and T. Altan, "Prediction of Chip Formation and Cutting Forces in Flat End Milling: Comparison of Process Simulations with Experiments," *Transactions of North American Manufacturing Research Institute/SME*, Vol. 26, 1998, pp. 231-236. [IF: N/A]

REFEREED CONFERENCE PROCEEDINGS

- [C1] T. Thepsonthi and T. Özel*, "Finite Element Modeling and Simulation of Micro-Milling," *Proceedings of the 40th North American Manufacturing Research Conference*, June 4-8, 2012, University of Notre Dame, Indiana.
- [C2] D. Teixidor, J. Ciurana, T. Thepsonthi and T. Özel*, "Nanosecond Pulsed Laser Micro-Machining of PMMA-based Microfluidic Channels," *Proceedings of the 40th North American Manufacturing Research Conference*, June 4-8, 2012, University of Notre Dame, Indiana.
- [C3] D. Ulutan and T. Özel*, "A Methodology to Determine Friction in Orthogonal Cutting with Application to Machining Titanium and Nickel Based Alloys," *Proceedings of 2012 ASME International Conference on Manufacturing Science and Engineering*, Paper No. MSEC2012-7275, June 4-8, 2012, University of Notre Dame, Indiana.
- [C4] T. Thepsonthi, N. Milesi and T. Özel*, "Design and Prototyping of Micro-Needle Arrays for Drug Delivery Using Customized Tool-Based Micro-Milling Process," *Proceedings of the The First International Conference on Design and Processes for Medical Devices*, May 2-4, 2012, Brescia, Italy.

- [C5] D. Teixidor, T. Thepsonthi, J. Ciurana and **T. Özel***, "Laser Micro-Machining of PMMA-based Micro-Channels for Microfluidics Applications," *Proceedings of the The First International Conference on Design and Processes for Medical Devices*, May 2-4, 2012, Brescia, Italy.
- [C6] A. Agirre, T. Thepsonthi and **T. Özel***, "Micro-Milling of Metallic Thin-Wall Features with Applications in Micro-Heat Sinks," *Proceedings of the 9th International Conference on High Speed Machining*, March 7-8, 2012, San Sebastian, Spain.
- [C7] T. Thepsonthi and **T. Özel***, "Statistically Based Process Optimization for Improved Surface Quality in Micro-end Milling of Ti-6Al- 4V Titanium Alloy," *Proceedings of the 39th North American Manufacturing Research Conference*, June 13-17, 2011, Oregon State University, Corvallis, Oregon.
- [C8] M. Sima, D. Ulutan, and **T. Özel***, "Effects of Tool Micro-Geometry and Coatings in Turning of Ti-6Al-4V Titanium Alloy," *Proceedings of the 39th North American Manufacturing Research Conference*, June 11-17, 2011, Oregon State University, Corvallis, Oregon.
- [C9] **T. Özel***, T. Thepsonthi, D. Ulutan, B. Kaftanoğlu, "Micro-Milling of Ti-6Al-4V Alloy with Uncoated and cBN coated Micro-Tools," *Proceedings of the 6th International Conference and Exhibition on Design and Production of Machines and Dies/Molds*, June 23-26, 2011, Ankara, Turkey.
- [C10] S. Farina, T. Thepsonthi, E. Ceretti*, **T. Özel**, "Determination of Specific Forces and Tool Deflections in Micro-milling of Ti-6Al-4V alloy using Finite Element Simulations and Analysis," *The 14th International ESAFORM Conference on Material Forming*, Belfast, United Kingdom, 27-29 April 2011, AIP Conf. Proc. 1353, 645-650, 2011, DOI:10.1063/1.3589588.
- [C11] D. Ulutan, M. Sima and **T. Özel***, "Prediction of Machining Induced Surface Integrity using Elastic-Viscoplastic Simulations and Temperature-Dependent Flow Softening Material Models in Titanium and Nickel-based alloys," *Proceedings of 13th CIRP International Conference on Modeling of Machining Operations*, May 12-13, 2011, Sintra, Portugal.
- [C12] T. Thepsonthi and **T. Özel***, "Sensor-Assisted Monitoring and Optimization of Process Parameters in Micro-end Milling of Ti-6Al- 4V Titanium Alloy," *Proceedings of The Fifth International Conference on Micromanufacturing (ICOMM/4M 2010)*, April 5-8, 2010 Madison, Wisconsin, USA, pp. 227-235.
- [C13] **T. Özel***, "Experimental and Finite Element Investigations on The Influence of Tool Edge Radius in Machining Nickel-Based Alloy," *CD Proceedings of 2009 ASME International Conference on Manufacturing Science and Engineering*, Paper No. 84362, October 5-7, 2009, Lafayette, Indiana, USA.
- [C14] **T. Özel*** and S.Yildiz, "A Framework for Establishing Energy Efficiency and Ecological Footprint Metrics for Sustainable Manufacturing of Products," *CD Proceedings of 2009 ASME International Conference on Manufacturing Science and Engineering*, Paper No. 84365, October 5-7, 2009, Lafayette, Indiana, USA.
- [C15] H. Cesur, B. Kaftanoglu*, **T. Özel***, "Machining Performance of CBN Coated Cutting Tools for Die/Mold Applications" *Proceedings of 5th International Conference and Exhibition on Design and Production of Machines and Dies/Molds*, June 18-21, 2009, Kusadasi, Turkey.
- [C16] J. Soriano, I. Llanos, **T. Özel***, P. J. Arrazola, "Comparison of 3D Finite Element Models for Chip Formation ," *Proceedings of 12th CIRP International Workshop on Modeling of Machining Operations*, May 7-8, 2009, San Sebastian, Spain, Vol. I, pp. 53-60. [**Nominated for Best Paper Award**]
- [C17] **T. Özel***, "Finite Element Simulation of Machining Nickel-Based Alloy in the Presence of Tool Flank Wear," *Proceedings of 12th CIRP International Workshop on Modeling of Machining Operations*, May 7-8, 2009, San Sebastian, Spain, Vol. I, pp. 37-44. [**Nominated for Best Paper Award**]

- [C18] **T. Özel***, S. Yildiz, J. Ciurana, "Influence of Material Models on Serrated Chip Formation in Simulation of Machining Ti-6Al-4V Titanium Alloy," *Proceedings of 12th CIRP International Workshop on Modeling of Machining Operations*, May 7-8, 2009, San Sebastian, Spain, Vol. I, pp. 123-130.
- [C19] J. Ciurana, G. Arias, and **T. Özel***, "Modeling of process parameters influence on feature geometry in pulsed laser micro-machining of hardened steel", *Third International Conference on Micromanufacturing*, September 9-11, 2008, Carnegie-Mellon University, Pittsburg, PA, USA.
- [C20] **T. Özel*** and X. Liu, "Modeling Based Micro-Milling Process Planning For Machining Mold Cavities," *Proceedings of the CIRP 3rd Int. Conference on High Speed Cutting*, Dublin, Ireland, June 12-13, 2008.
- [C21] **T. Özel*** and F. Pfefferkorn, "Pulsed Laser Assisted Micromilling for Die/ Mold Manufacturing," *CD Proceedings of 2007 ASME International Conference on Manufacturing Science and Engineering*, Paper No. 31101, October 15-18, 2007, Atlanta, Georgia, USA.
- [C22] A. Dhanorker, X. Liu and **T. Özel***, "Micromilling Process Planning and Modeling for Micro Mold Manufacturing," *CD Proceedings of 2007 ASME International Conference on Manufacturing Science and Engineering*, Paper No. 31070, October 15-18, 2007, Atlanta, Georgia, USA.
- [C23] W.H. Lee and **T. Özel***, "Laser Micromachining of Spherical and Elliptical 3-D Objects using Hole Area Modulation Method," *CD Proceedings of 2007 ASME International Conference on Manufacturing Science and Engineering*, Paper No. 31068, October 15-18, 2007, Atlanta, Georgia, USA.
- [C24] **T. Özel***, X. Liu, A. Dhanorker, "Modelling and Simulation of Micro-Milling Process," *Proceedings of 4th International Conference and Exhibition on Design and Production of Machines and Dies/Molds*, June 21-23, 2007, Cesme, Turkey, pp. 167-174.
- [C25] Y. Karpat, **T. Özel***, J. Sockman and W. Shaffer, "Design and Analysis of Variable Micro-Geometry Tooling for Machining Using 3-D Process Simulations," *CD Proceedings of International Conference on Smart Machining Systems, National Institute of Standards and Technology*, March 13-15, 2007, Gaithersburg, Maryland, USA.
- [C26] A. Dhanorker and **T. Özel**, "An Experimental and Modeling Study on Meso/Micro End Milling Process," *CD Proceedings of 2006 ASME International Conference on Manufacturing Science and Engineering*, Paper No. 21127, October 8-11, 2006, Ypsilanti, Michigan, USA.
- [C27] Y. Karpat and **T. Özel***, "Identification of Friction Factors for Chamfered and Honed Tools Through Slip-line field Analysis," *CD Proceedings of 2006 ASME International Conference on Manufacturing Science and Engineering*, Paper No. 21058, October 8-11, 2006, Ypsilanti, Michigan, USA.
- [C28] **T. Özel*** and E. Zeren, "Finite Element Analysis of The Influence of Edge Roundness on The Stress and Temperature Fields Induced by High Speed Machining" *Proceedings of the CIRP 2nd Int. Conference on High Speed Cutting*, June 12-13, 2006, Vancouver, Canada.
- [C29] **T. Özel*** and E. Zeren, "Finite Element Modeling of Residual Stresses Induced by High Speed Machining with Round Edge Cutting Tools," *CD Proceedings of 2005 ASME International Mechanical Engineering Congress & Exposition*, Paper No.81046, November 5-11, 2005, Orlando, Florida, USA.
- [C30] Y. Karpat and **T. Özel***, "An Analytical-Thermal Modeling Approach for Predicting Forces, Stresses and Temperatures in Machining with Worn Tools," *CD Proceedings of 2005 ASME International Mechanical Engineering Congress & Exposition*, Paper No. 81035, November 5-11, 2005, Orlando, Florida, USA.
- [C31] **T. Özel*** and E. Zeren, "Finite Element Method Simulation of Machining of AISI 1045 Steel With A Round Edge Cutting Tool," *Proceedings of 8th CIRP International Workshop on Modeling of Machining Operations*, May 10-11, 2005, Chemnitz, Germany, pp. 533-542, [**Best Paper Award**].

- [C32] **T. Özel*** and **E. Zeren**, "A Methodology to Determine Work Material Flow Stress and Tool-Chip Interfacial Friction Properties by Using Analysis of Machining," *CD Proceedings of 2004 ASME International Mechanical Engineering Congress & Exposition*, Paper No. 59176, November 13-19, 2004, Anaheim, California, USA.
- [C33] **T. Özel*** and **Y. Karpat**, "Prediction of Surface Roughness and Tool Wear in Finish Dry Hard Turning Using Back Propagation Neural Networks," *CD Proceedings of the 17th International Conference on Production Research*, August 3-7, 2003, Blacksburg, Virginia, USA.
- [C34] **T. Özel*** and **E. Zeren**, "Determination of Work Material Flow Stress and Friction For FEA of Machining Using Orthogonal Cutting Tests," *Proceedings of International Conference on Advanced Materials & Processing Technologies*, Vol. 2, July 8-11, 2003, Dublin, Ireland, pp. 1378-1383.
- [C35] **T. Özel***, "Precision Tracking Control of A Horizontal Arm Coordinate Measuring Machine," *Proceedings of 2003 IEEE Conference on Control Applications*, June 23-25, 2003, Istanbul, Turkey, pp. 103-108.
- [C36] **T. Özel***, "Investigation of the Influence of Edge Preparation on CBN Cutting Tools when Machining Hardened AISI H-13 Tool Steel," *CD Proceedings of 2nd International Conference on Design and Production of Dies and Molds*, June 21-23, 2001, Kusadasi, Turkey.
- [C37] **M. Geiger** and **T. Özel***, "Development of Rapid Tooling for Injection Molding using Metal Filled Stereolithography (SLA) Cavity Inserts," *CD Proceedings of 2nd International Conference on Design and Production of Dies and Molds*, June 21-23, 2001, Kusadasi, Turkey.
- [C38] **A. Nadgir** and **T. Özel***, "Neural Network Modeling of Flank Wear for Tool Condition Monitoring in Orthogonal Cutting of Hardened Steels," *Proceedings of 4th International Conference on Engineering Design and Automation*, July 30-August 2, 2000, Orlando, Florida, USA, pp. 173-178.
- [C39] **T. Özel***, "Development of A Predictive Machining Simulator for Orthogonal Metal Cutting Process," *Proceedings of 4th International Conference on Engineering Design and Automation*, July 30-August 2, 2000, Orlando, Florida, USA, pp. 74-80.
- [C40] **T. Altan***, **P. Fallböhmer**, **C.A. Rodriguez** and **T. Özel**, "High Speed Cutting of Cast Iron and Alloy Steels-State of Research," *Proceedings of CIRP-VDI Conference on High-Performance Tools*, November 1998, VDI Berichte 1399, Düsseldorf, Germany, pp. 309-332.
- [C41] **T. Özel** and **T. Altan***, "Modeling of High Speed Machining Processes For Predicting Tool Forces, Stresses and Temperatures Using FEM Simulations," *Proceedings of the CIRP Workshop on Modeling of Machining Operations*, May 19, 1998, Atlanta, Georgia, USA, pp. 225-245.
- [C42] **T. Özel**, **M. Lucchi**, **C.A. Rodriguez** and **T. Altan***, "Prediction of Chip Formation and Cutting Forces in Flat End Milling: Comparison of Process Simulations with Experiments," *SME Technical Paper # MR98-250, NAMRC XXVI Conference*, Atlanta, Georgia, May 1998, pp. 1-6.
- [C43] **Y. Altintas*** and **T. Özel**, "Design and Operation Principles of CNC Machine Tools," *Engineer and Machinery*, in Turkish, 1993, Vol. 34, No. 407, pp. 18-30.
- [C44] **E. Uyar*** and **T. Özel**, "Trajectory Control and Accuracy Analysis in A Computer Controlled Model XY Table," *Proceedings of 7th IFAC-Information Control Problems in Manufacturing Technology*, 1992, Vol.1, pp. 230-234.
- [C45] **E. Uyar***, **T. Özel** and **B. Yardimoglu**, "Kinematic Analysis and Accuracy Investigation of A Computer Controlled Model Manipulator," *Proceedings of IEEE International Workshop on Intelligent Motion Control*, August 20-22, 1990, Bogazici University, Istanbul, Edited by O.Kaynak, IEEE Cat.No. 90TH0272-5, pp. 567-569.

FUNDED RESEARCH GRANTS

- EAGER: Pulsed Laser Assisted Exfoliation of Single Crystalline SiC Thin Layers for Cost Effective Micro-Device Fabrication, **National Science Foundation**, CMMI, Materials Processing and Manufacturing, \$130,000, 2011-2012, T. Özel, principal investigator, G. Celler (co-PI).
- Predictive Modeling and Optimization of Machining Induced Surface Integrity with Applications in Titanium and Nickel-Based Alloyed End Products, **National Science Foundation**, CMMI, Manufacturing Machines and Equipment, 07/01/2011-06/30/2014, \$388,345, Sole principal investigator.
- International Research Exchange For Biomedical Devices Design, Prototyping and Manufacturing, European **Commission Research Directorate-General**, FP7-PEOPLE-2009-IRSES, J. Ciurana- Univ. Girona, Spain (PI), E. Ceretti- Univ. Brescia, Italy (co-PI), P. Bartolo- Inst. Polytech. Leira (co-PI), C. Rodriguez- Tech Monterrey, Mexico (co-PI), J.V. Lopes De Silva CTIR, Brazil (co-PI), T. Özel (co-PI), 2009-2012.
- Research Experiences for Undergraduates: Improving Machinability of Titanium Alloys using Physics-based Simulation Modeling, **National Science Foundation**, CMMI, Manufacturing Machines and Equipment, 06/01/2009-06/30/2011, Sole principal investigator.
- Collaborative Research: Improving Machinability of Titanium Alloys using Physics-based Simulation Modeling, **National Science Foundation**, CMMI, Manufacturing Machines and Equipment, 07/01/2008-06/30/2011, Sole principal investigator.
- Investigations on the Influence of Machining-Induced Strain, Stress and Temperature Fields on White-Etch Layer Formation in IN-100 Super Alloy, **United Technologies Research Center**, 04/01/2007-12/31/2007, Sole principal investigator.
- Investigations on the Effects of Advanced Edge Design in PCBN cutting tools for Hard Turning, **Conicity Technologies - Weiler Corporation**, 04/01/2006-10/01/2006, Sole principal investigator.
- Instrumentation for Research on Innovative Micro Manufacturing Processes, **Rutgers University Research Council Grant Award**, 07/01/2005-05/01/2006, Sole principle investigator.
- Process Analytical Technology: Fusion of Analytical Technology and Automation Control, **Siemens Corporate Research, NJ**, 09/01/2004-08/31/2005, co-principal investigator, (PI, T. Altiook, Rutgers).
- Prediction and Validation of Surface Properties in High-Speed Machined Materials, **Rutgers University Research Council Grant Award**, 07/01/2004-05/01/2005, Sole principle investigator.
- Development of Workpiece Material and Friction Models for Simulation of Machining of Aerospace Alloys, **New Jersey Space Grant Consortium Award**, 09/01/2002-12/31/2003, Sole principal investigator.
- Research Start-up for Manufacturing Automation Laboratory, Rutgers, The State University of New Jersey, 01/02/2002-08/31/2003, principal investigator.
- Web-based Course Development on Advance Machining Processes, Ohio World Class Manufacturing Consortium, Ohio Learning Network, 12/15/2000-12/15/2001, co-principal investigator.
- Measurement of Forces and Simulation of Cutting in Metal Turning Process, The Access to Careers in Engineering Program, Cleveland State University, 06/01/2000-09/01/2000, Sole principal investigator.
- Measurement and Evaluation of Forces Developed During Cut-off Machining Process, Manchester Tool Company, 09/01/1999-12/31/1999, Sole principal investigator.

CONFERENCE PRESENTATIONS

- Experiments and Finite Element Simulations on Micro-Milling of Ti-6Al-4V Alloy with Uncoated and cBN coated Micro-Tools, 60th CIRP General Assembly, Budapest, Hungary, August 22-26, 2011.
- Statistically Based Process Optimization for Improved Surface Quality in Micro-end Milling of Ti-6Al-4V Titanium Alloy, The 39th North American Manufacturing Research Conference, June 13-17, 2011, Oregon State University, Corvallis, Oregon.
- Effects of Tool Micro-Geometry and Coatings in Turning of Ti-6Al-4V Titanium Alloy, The 39th North American Manufacturing Research Conference, June 13-17, 2011, Oregon State University, Corvallis, Oregon.
- Prediction of Machining Induced Surface Integrity using Elastic-Viscoplastic Simulations and Temperature-Dependent Flow Softening Material Models in Titanium and Nickel-based alloys, The 13th CIRP International Conference on Modeling of Machining Operations, May 12, 2011, Sintra, Portugal.
- Investigations on the Effects of Multi-Layered Coated Inserts in Machining Ti-6Al-4V Alloy with Experiments and Finite Element Simulations, 60th CIRP General Assembly, Pisa, Italy, August 23-27, 2010.
- Finite Element Simulation of High Speed Machining Ti-6Al-4V Alloy using Modified Material Models, Transactions of the NAMRI/SME, Thirty eight North American Manufacturing Research Conference, May 25-28, 2010, Queen's University, Kingston, Canada.
- Experimental and Finite Element Investigations on The Influence of Tool Edge Radius in Machining Nickel-Based Alloy, 2009 ASME International Conference on Manufacturing Science and Engineering, October 5, 2009, Lafayette, Indiana, USA.
- A Framework for Establishing Energy Efficiency and Ecological Footprint Metrics for Sustainable Manufacturing of Products, 2009 ASME International Conference on Manufacturing Science and Engineering, October 6, 2009, Lafayette, Indiana, USA.
- Finite Element Simulation of Machining Nickel-Based Alloy in the Presence of Tool Flank Wear, 12th CIRP International Workshop on Modeling of Machining Operations, May 7-8, 2009, San Sebastian, Spain, Vol. I, pp. 37-44.
- Influence of Material Models on Serrated Chip Formation in Simulation of Machining Ti-6Al-4V Titanium Alloy, 12th CIRP International Workshop on Modeling of Machining Operations, May 7-8, 2009, San Sebastian, Spain, Vol. I, pp. 123-130.
- Hard Turning with Variable Micro-Geometry PcBN Tools, 58th CIRP General Assembly, Manchester, U.K., August 24-26, 2008.
- Modeling Based Micro-Milling Process Planning For Machining Mold Cavities, CIRP 3rd Int. Conference on High Speed Cutting, Dublin, Ireland, June 12-13, 2008.
- Laser Micromachining of Spherical and Elliptical 3-D Objects using Hole Area Modulation Method, 2007 ASME International Conference on Manufacturing Science and Engineering, October 15-18, 2007, Atlanta, GA.
- Pulsed Laser Assisted Micromilling for Die/ Mold Manufacturing, 2007 ASME International Conference on Manufacturing Science and Engineering, October 15-18, 2007, Atlanta, GA.
- Micromilling Process Planning and Modeling for Micro Mold Manufacturing, 2007 ASME International Conference on Manufacturing Science and Engineering, October 15-18, 2007, Atlanta, GA.

- Modelling and Simulation of Micro-Milling Process, 4th International Conference and Exhibition on Design and Production of Machines and Dies/Molds, June 21-23, 2007, Cesme, Turkey.
- 3-D FEA of Hard Turning: Investigation of PCBN Cutting Tool Micro- Geometry Effects, Thirty fifth North American Manufacturing Research Conference, May 22-25, 2007, University of Michigan, Ann Arbor, Michigan.
- Design and Analysis of Variable Micro-Geometry Tooling for Machining Using 3-D Process Simulations, International Conference on Smart Machining Systems, National Institute of Standards and Technology, March 13-15, 2007, Gaithersburg, Maryland.
- An Experimental and Modeling Study on Meso/Micro End Milling Process, 2006 ASME International Conference on Manufacturing Science and Engineering, October 8-11, 2006, Ypsilanti, Michigan.
- An Integrated Analytical Thermal Model for Orthogonal Cutting with Chamfered Tools, Thirty fourth North American Manufacturing Research Conference, May 24-27, 2006, Marquette University, Milwaukee, Wisconsin.
- Finite Element Modeling of Stresses Induced by High Speed Machining with Round Edge Cutting Tools, 2005 ASME International Mechanical Engineering Congress & Exposition, Orlando, Florida, November 5-11, 2005.
- Workpiece Material Model Based Predictions for Machining Processes, Thirty third North American Manufacturing Research Conference, May 23-27, 2005, Columbia University, New York City, New York.
- Finite Element Method Simulation of Machining of AISI 1045 Steel With A Round Edge Cutting Tool, 8th CIRP International Workshop on Modeling of Machining Operations, Chemnitz, Germany, May 10-11, 2005, **[Best Paper Award]**.
- A Methodology to Determine Work Material Flow Stress and Tool-Chip Interfacial Friction Properties by Using Analysis of Machining, 2004 ASME International Mechanical Engineering Congress & Exposition, Anaheim, California, November 13-19, 2004.
- Prediction of Surface Roughness and Tool Wear in Finish Dry Hard Turning Using Back Propagation Neural Networks, 17th International Conference on Production Research (ICPR), August 3-7, 2003, Blacksburg, Virginia.
- Precision Tracking Control of A Horizontal Arm Coordinate Measuring Machine, 2003 IEEE Conference on Control Applications (CCA), June 23-25, 2003, Istanbul, Turkey.

INVITED LECTURES, PRESENTATIONS AND SEMINARS

- **Invited Presentation**, Fabrication of 3D Polymeric Micro-Needle Arrays using Micro-milling, CIRP Collaborative Working Group on BioManufacturing Meeting, Paris, France, January 25, 2012.
- **Invited Seminar**, Modeling and Optimization of Micro-milling Processes for Titanium Alloys, MIE Seminar Series, Mechanical & Industrial Engineering, New Jersey Institute of Technology, Newark NJ, November 9, 2011.
- **Invited Presentation**, Micro-milling of Ti-6Al-4V alloy with cBN coated Micro-Tools: Influence of Machining Parameters on Process Performance and Surface Quality, CIRP Scientific Technical Committee (Cutting) Meeting, Paris, France, January 27, 2011.

- **Invited Lectures**, Lecture 1: Mechanical micro-machining & micro- milling, Lecture 2: Laser processing & micro-machining, Lecture 3: Surface engineering: biocompatibility, friction and coatings" European Commission - IREBID project meetings, University of Girona, Spain, June 28-July 2, 2010.
- **Invited Lectures**, Innovative Manufacturing Processes and Production Systems, University of Girona, Spain, January 12-15, 2010.
- **Invited Special Seminar**, Computational Manufacturing: Modeling and Optimization of Micro-machining Processes, Industrial Automation Institute, Spanish Council for Scientific Research (CSIC), May 6, 2009, Madrid, Spain.
- **Invited Lectures**, Innovative Manufacturing Processes and Production Systems," University of Girona, Spain, January 19-21, 2009.
- **Invited Plenary Lecture**, Computational modeling of machining processes, 4th International Industrial and Manufacturing Engineering and Welding Technology Congress and Meeting, November 5-7, 2008, Saltillo, Mexico.
- **Invited Lecture**, Surface Engineering for Medical Products: Friction, Coatings and Biocompatibility Issues, *ISPE New Jersey Chapter Day*, June 18, 2008, Somerset, New Jersey.
- **Invited Lectures**, Innovative Manufacturing Processes and Production Systems, Invited Lectures, University of Girona, Spain, January 17-18, 2008.
- **Invited Seminar**, Experimental Nanomanufacturing Processes, Chemistry Seminar Series, The William Patterson University of New Jersey, Wayne, New Jersey, USA, November 13, 2007.
- **Invited Special Seminar**, Advanced Machining Research at Rutgers, United Technologies Research Center, East Hartford, Connecticut, USA, February 9, 2007.
- **Invited Presentation**, Modeling and Predicting Temperature Fields in Micro-Geometry CBN Tools: Towards Variable Edge Micro-Geometry Tools, CIRP Working Group on Temperature Measurements in Manufacturing Processes, Paris, France, January 24, 2007.
- **Invited Presentation**, Finite Element Analysis of The Influence of Edge Roundness on The Stress and Temperature Fields Induced by High Speed Machining, CIRP 2nd Int. Conference on High Performance Cutting in University of British Columbia, Vancouver, Canada, June 12, 2006.
- **Invited Presentation**, Predictive Modeling of Machining AISI 1045 Steel: Comparisons with Experimentally Measured Temperature Fields, CIRP Working Group on Temperature Measurements in Manufacturing Processes, Paris, France, January 25, 2006.
- **Invited Seminar**, Innovative Machining Processes for Micromanufacturing and Modeling of Micro/Meso Scale Mechanical Cutting, Yeditepe University, Istanbul, Turkey, July 22, 2005.
- **Invited Seminar**, Finite Element Simulations of High Speed Machining with Round Edge Tools: Predictions of Temperature and Stress Fields, Mechanical Engineering Department Seminars, Izmir Institute of Technology, Izmir, Turkey, July 20, 2005.
- **Panel Discussions**, Review of U.S. Research in Micro-Manufacturing, WTEC Workshop, National Science Foundation, Arlington, Virginia, USA, August 12, 2004.
- **Invited Seminar**, High Speed Machining of Hardened Steels, Society of Manufacturing Engineers, Chapter 102 Meeting, Paterson, New Jersey, USA, February 24, 2003.

- **Invited Seminar**, Neural Network Modeling of Tool Wear for Hard Part Machining, Mechanical Engineering Seminar Series, Stevens Institute of Technology, Hoboken, New Jersey, USA, April 25, 2002.
- **Invited Special Seminar**, An Integrated Simulation and Experimental Approach for Hard Part Machining Systems, Izmir Institute of Technology, Izmir, Turkey, June 15, 2001.
- **Faculty Candidate Seminar** An Integrated Simulation and Experimental Approach for Hard Part Machining Systems, Industrial Engineering, Rutgers University, Piscataway, New Jersey, April 16, 2001.
- **Invited Special Seminar**, State of the Research in Finite Element Modeling of High Speed Machining, Istanbul Technical University, Istanbul, Turkey, June 10, 2000.
- **Invited Lecture**, High Speed Machining and Rapid Prototyping, NASA Ames Research Center, San Jose, California, USA, April 15, 2000.
- **Invited Lecture**, High Speed Machining and Rapid Prototyping, NASA Marshall Space and Flight Center, Huntsville, Alabama, USA, October 19, 1999.
- **Invited Lecture**, Emerging Manufacturing Technologies: Micromachining and Rapid Prototyping, NASA Glenn Research Center, Cleveland, Ohio, USA, June 21, 1999.
- **Invited Lecture**, Design for Manufacture, NASA Glenn Research Center, Manufacturing Engineering Division, Cleveland, Ohio, USA, December 3, 1998.

JOURNAL EDITORSHIP

- Editor in Chief, *International Journal of Mechatronics and Manufacturing Systems*, Inderscience Publishers, 2007-present.

JOURNAL EDITORIAL BOARDS

- Editorial Board Member, *International Journal of Nanomanufacturing*, Inderscience Publishers, 2007-present.
- Editorial Board Member, *International Journal of Machining and Machinability of Materials*, Inderscience Publishers, 2006-present.
- Editorial Board Member, *International Journal of Computational Materials Science and Surface Engineering (IJCMSSE)*, Inderscience Publishers, 2009-present.
- Editorial Board Member, *Polish Academy of Sciences Journal of Advances in Manufacturing Science and Technology*, 2009-present.

MEMBER OF ORGANIZING AND SCIENTIFIC COMMITTEES OF CONFERENCES

- Member of the Scientific Committee of the Fifth CIRP Conference on High Performance Cutting, June 4-7, 2012, Zurich, Switzerland, 2012.
- Member of the Scientific Committee of the Ninth International Conference on High Speed Machining, March 7-8, 2012, San Sebastian, Spain, 2012.
- Member of the Organizing Committee of the Seventh International Conference on Micromanufacturing, March 12-14, 2012, Northwestern University, Evanston, Illinois, USA.

- Member of the Organizing Committee of the First International Conference on Design and Processes for Medical Devices (PROMED), May 2-4, 2012, Brescia, Italy.
- Member of the Scientific Committee of the First CIRP Conference on Surface Integrity (CSI), January 30-February 1, 2012 - Bremen, Germany.
- Member of the Scientific Committee of the Fifth International Conference on Advanced Research in Virtual and Rapid Prototyping (VRAP 2011), September 28-October 1, 2011, Leiria, Portugal.
- Member of the International Advisory Board, International Conference on Computational Methods in Manufacturing, December 15-16, 2011, Indian Institute of Technology Guwahati, Guwahati, India.
- Member of the International Program Committee of the 6th International Conference and Exhibition on Design and Production of Machines and Dies/Molds, June 23-26, 2011, Ankara, Turkey.
- Member of the Scientific Committee of the 13th CIRP Conference on Modeling of Machining Operations, May 12-13, 2011, Sintra, Portugal.
- Member of the Scientific Committee, 5th Biomechanics Congress, September 23-25, 2010, Cesme, Izmir, Turkey.
- Member of the Organizing Committee of the Fifth International Conference on Micromanufacturing, April 5-7, 2010, Wisconsin, Madison, USA.
- Member of the International Program Committee of the 14th International Conference on Machine Design and Production, June 29- July 2, 2010, Northern Cyprus.
- Member of the Organizing Committee of the 4M2009 International Conference on Multi-Material MicroManufacturing, September 23-25, 2009, Forschungszentrum Karlsruhe, Germany.
- Member of the International Program Committee of the 5th International Conference and Exhibition on Design and Production of Machines and Dies/Molds, June 18-21, 2009, Kusadasi, Aydin, Turkey.
- Member of the Scientific Committee of the 12th CIRP Conference on Modeling of Machining Operations, May 7-8, 2009, San Sebastian, Spain.
- Member of the Scientific Committee of the 11th CIRP Conference on Modeling of Machining Operations, September 16-18, 2008, National Institute of Standards and Technology, Gaithersburg, Maryland, USA.
- Member of the Organizing Committee of the Third International Conference on Micromanufacturing, September 9-11, 2008, Carnegie-Mellon University, Pittsburg, Pennsylvania, USA.
- Member of the International Program Committee of the 13th International Conference on Machine Design and Production, September 3-5, 2008, Istanbul, Turkey.
- Member of the International Program Committee of the First International Conference on Sustainable Manufacturing, October 17-18, 2007, Montreal, Canada.
- Guest Reviewer in the Scientific Committee, Transactions of North American Manufacturing Research Institute / International Society of Manufacturing Engineers, 2006, 2007, 2008.
- Member of the International Program Committee of the 4th International Conference and Exhibition on Design and Production of Machines and Dies/Molds, June 21-23, 2007, Cesme, Turkey.

SYMPOSIUM/PANEL/TRACK/SESSION ORGANIZER

- Panel organizer on “University/Industry Collaborations in Global Environment”, The 40th North American Manufacturing Research Conference, July 7, 2012, University of Notre Dame, Indiana, USA.
- Symposium organizer on “Meso/Micro Manufacturing Equipment and Processes for Alternative Energy Devices” for the 2009 ASME Manufacturing Science & Engineering Conference, October 4-7, 2009, West Lafayette, Indiana, USA.
- Special session organizer on “Micromanufacturing Processes and Equipment” for the 13th International Conference on Machine Design and Production, September 3-5, 2008, Istanbul, Turkey.
- Symposium organizer on “Hybrid Macro/Meso/Micro Manufacturing Processes” for the 2007 ASME Manufacturing Science & Engineering Conference, October 15-17, 2007, Atlanta, Georgia, USA.
- Organizer for the session on “Manufacturing Processes I”, at the 10th Industrial Engineering Research Conference, May 16-18, 2004, Houston, Texas, USA.

SESSION CHAIR/CO-CHAIR AT CONFERENCES

- Session Chair, “1-9 Machining-2,” The 39th North American Manufacturing Research Conference, June 15, 2011, Oregon State University, Corvallis, Oregon.
- Session Chair, “Surface Integrity-1,” 13th CIRP Conference on Modeling of Machining Operations, May 12-13, 2011, Sintra, Spain.
- Session Chair, Finite Element Modeling I, 12th CIRP Conference on Modeling of Machining Operations, May 7-8, 2009, San Sebastian, Spain.
- Session Chair of 4-1 on “Micro/Nano Machining” 2007 ASME Manufacturing Science & Engineering Conference, October 15-17, 2007, Atlanta, Georgia, USA.
- Session Co-Chair 14-2 on “Development and Applications of Micro Manufacturing Equipment” 2007 ASME Manufacturing Science & Engineering Conference, October 15-17, 2007, Atlanta, Georgia, USA.
- Session Chair on “Cutting/Milling/Machining,” 4th International Conference and Exhibition on Design and Production of Machines and Dies/Molds, June 21-23, 2007, Cesme, Turkey.
- Session Chair of 4-1 on “Micro/Nano Machining” 2007 ASME Manufacturing Science & Engineering Conference, October 15-17, 2007, Atlanta, Georgia, USA.
- Session Co-Chair 14-2 on “Development and Applications of Micro Manufacturing Equipment” 2007 ASME Manufacturing Science & Engineering Conference, October 15-17, 2007, Atlanta, Georgia.
- Session Chair of 2-D "Processing Polymer and Bimetal Parts" at NAMRC 35, The Thirty-fifth North American Manufacturing Research Conference, May 22-25, 2007, University of Michigan, Ann Arbor, Michigan, USA.
- Session Chair of 2-D "Process Planning and Control" at NAMRC 34, The Thirty-fourth North American Manufacturing Research Conference, May 24-26, 2006, Marquette University, Milwaukee, Wisconsin, USA.
- Session Chair MED-2 “Surface Integrity and Product Performance of Meso/Micro/Nano-Scale Machining Hard/Brittle Materials” at 2005 ASME International Mechanical Engineering Congress & Exposition, November 5-11, 2006, Orlando, Florida, USA.

- Session Chair of 1-A "Machinability and Cutting Tools" at NAMRC 33, The Thirty-third North American Manufacturing Research Conference, May 24-27, 2005, Columbia University, New York City, New York, USA.
- Session Chair MED-11B "High Speed Machining-I" at 2004 ASME International Mechanical Engineering Congress & Exposition, November 13-19, 2004, Anaheim, California, USA.

PANELIST, REVIEWER AND REFEREE

- Member of Proposal Review Panels, National Science Foundation, Directorate for Engineering, Division of Design, Manufacture, and Industrial Innovation, Materials Processing and Manufacturing, Arlington, Virginia, USA.
- Member of Proposal Review Panels, National Science Foundation, Directorate for Engineering, Small Business Innovation Research Program, Arlington, Virginia, USA.
- Member of Proposal Review Panels, National Science Foundation, Directorate for Engineering, Division of Design, Manufacture, and Industrial Innovation, Manufacturing Machines and Equipment Program, Arlington, Virginia, USA.
- Ad Hoc Reviewer, Hungarian Science and Technology Council, 2011.
- Ad Hoc Reviewer, Lithuanian Agency for Science, Innovation and Technology, 2011.
- Ad Hoc Reviewer, U.S. Civilian Research and Development Foundation, Cooperative Grants Program.
- Ad Hoc Reviewer, Indo-US Science and Technology Forum at the Smithsonian Institution.
- Reviewer for the following Journals (over 300 papers since 1998):
 - ASME Journal of Computing and Information Science in Engineering, 2006-present.
 - ASME Journal of Manufacturing Science and Engineering, 1999-present.
 - Computers and Industrial Engineering, 2004-2008.
 - IEE Proceedings – Control Theory and Applications, 2003-present.
 - IEEE Transactions on Control Systems Technology, 2002-present.
 - IEEE Transactions on Robotics and Automation, 2003-present.
 - International Journal of Advanced Manufacturing Technology, 2003-present.
 - International Journal of Engineering Manufacture, 2005-present.
 - International Journal of Machine Tools and Manufacture, 1999-present.
 - International Journal of Mechanical Sciences, 2006-present.
 - International Journal of Production Economics, 2009-present.
 - International Journal of Production Research, 2006-present.
 - Journal of Materials Processing Technology, 1999-present.
 - Machining Science and Technology, 1999-present.
 - Materials and Manufacturing Processes, 2006-present.
 - Modelling and Simulation in Materials Science and Engineering, 2011-present.
 - Nanotechnology, 2011-present.
 - Proceedings of the Institution of Mechanical Engineers, Part B, Journal of Engineering Manufacture, 2006-present.
 - Robotics and Computer-Integrated Manufacturing, 2003-present.
 - Simulation Modelling Practice and Theory, 2010-present.
 - SME Journal of Manufacturing Processes, 1999-present.
 - SME Journal of Manufacturing Systems, 1999-present.
 - Tribology International, 2010-present.

- Reviewer for the following Conferences:
 - ASME International Conference on Manufacturing Science and Engineering, 2006-present
 - ASME International Mechanical Engineering Congress and Exposition, 2004-present.
 - CIRP Conference on Modeling of Machining Operations, 2005-present.
 - CIRP Conference on High Speed Machining, 2011-present.
 - CIRP Conference on High performance Cutting, 2011-present.
 - CIRP Conference of Surface Integrity, 2011-present.
 - ICOMM, International Conference on Micromanufacturing, 2008-present.
 - SME/NAMRI-North American Manufacturing Research Conference, 2006-present.
 - UMTIK, International Conference on Machine Design and Production, 2008-present.

COMMITTEE MEMBERSHIPS IN PROFESSIONAL SOCIETIES

- Member, Technical Committee on Manufacturing Processes, Manufacturing Engineering Division, American Society of Mechanical Engineers, 2006-present.
- Secretary, Senior Chapter New Jersey, Society of Manufacturing Engineers, 2005-present.
- Member, Technical Committee on BioEngineering, Society of Manufacturing Engineers, 2007-present.

GRADUATE STUDENTS SUPERVISED

Doctoral theses supervised as primary advisor

1. Durul Ulutan, current Ph.D. student (September 2009 - present), ISE, Rutgers, The State University of New Jersey, primary advisor, Tentative Ph.D. Topic "Physics-Based Modeling and Optimization of Surface Integrity Induced by Machining Processes", ongoing.
2. Thanongsak Thepsonthi, current Ph.D. student (June 2009 - present), ISE, Rutgers, The State University of New Jersey, primary advisor, Tentative Ph.D. Topic "Modeling and Optimization of Micro-Milling and Laser Processing Generated Functional Surfaces", ongoing.
3. Mohammed Damoon Sima, current Ph.D. student (January 2009 - present), ISE, Rutgers, The State University of New Jersey, primary advisor, Tentative Ph.D. Topic "Finite Element Simulation and Optimization of Machining Processes in Manufacturing Aerospace Alloys", ongoing.
4. Yigit Karpat, Ph.D. I.S.E., Dissertation, "Predictive Modeling and Optimization in Hard Turning: Investigations of Effects on Cutting Tool Micro Geometry," graduated in May 2007, Rutgers, The State University of New Jersey, primary advisor. -Recipient of Italian Machine Tool Technology award for North American Students and currently Assistant Professor at Department of Industrial Engineering of Bilkent University, Ankara, Turkey.

Master's theses or projects supervised as primary advisor

1. Haiqing Gao, M.S. I.S.E., Master's Project, "Design Optimization and Prototyping of A Spinal Spacer Biomedical Implant," Graduated in May 2011, Rutgers, The State University of New Jersey, primary advisor.
2. Simone Farina, M.S. M.I.E., Master's Thesis, "Micro End Milling of Ti-6Al-4V: Forces and Tool's Deflections Analysis, Graduated in March 2011, University of Brescia (Università degli Studi di Brescia), Dept. of Mechanical & Industrial Engineering, co-advisor.
3. Atul Dhanorker, M.S. I.S.E., Master's Thesis, "An Experimental and Modeling Study on Meso and Micro Scale End Milling Processes for Micromanufacturing," graduated in May 2007, Rutgers, The State

University of New Jersey, primary advisor.

4. Erol Zeren, M.S. I.S.E., Master's Project, "Development of Workpiece Material and Friction Models for Simulation of Machining of Aerospace Alloys," graduated in May 2005, Rutgers, The State University of New Jersey, primary advisor.
5. Wen-Hui Lee, M.S. I.S.E., Master's Project, "A State-Of-The-Art in Pulsed Laser Micromachining Processes and Hole Area Modulated Machining of Micro lenses," graduated in May 2005, Rutgers, The State University of New Jersey, primary advisor.
6. Fazal Naikwadi, M.S. I.S.E., Master's Project, "Design and Analysis of Micromanipulator for Microfabrication," graduated in May 2005, Rutgers, The State University of New Jersey, primary advisor.
7. Dhiraj Oberoi, M.S. I.S.E., Master's Project, "CAD/CAM in Turning," graduated in May 2005, Rutgers, The State University of New Jersey, primary advisor.
8. Tsu-Kong Hsu, M.S. I.S.E., Master's Project, "Development of Interactive Web-Based Tools for Hard Turning Analysis: Cutting Forces, Surface Roughness and Tool Wear," graduated in May 2003, Rutgers, The State University of New Jersey, primary advisor.
9. Mark Geiger, M.S. I.M.E., Master's Project, "Development of Rapid Tooling for Injection Molding using Metal Filled Stereolithography Cavity Inserts," graduated in May 2001, Cleveland State University, Ohio, primary advisor.
10. Abhijit Nadgir, M.S. I.M.E., Master's Thesis, "Neural Network Modeling of Flank Wear for Tool Condition Monitoring in Orthogonal Cutting of Hardened Steels," graduated in Aug. 2000, Cleveland State University, Ohio, primary advisor.
11. Ronald Koenig, M.S. I.M.E., Master's Project, "Developmental Micro Mechanical Machining of Silicon Carbide Using Cubic Boron Nitride Cutting Tools," graduated in May 2000, Cleveland State University, Ohio, primary advisor.

Membership on theses committees

1. Kushendarsyah Saptaji, Ph.D. Thesis, "A Study of Micro-Machining Thin Workpieces," January 2012, School of Mechanical and Aerospace Engineering, Nanyang Technology University.
2. Prakash Rao, Ph.D. Thesis, "Characterization of The Flow Field and Shape of De-Fluidized Regions in The Wake of Large Submerged Objects in Small Particle Fluidized Beds," January 2012, Mechanical and Aerospace Engineering, December 2008, Rutgers, The State University of New Jersey, member of the Ph.D. Dissertation Committee.
3. Guillem Quintana Badosa, Ph.D. Thesis, "Stability Lobes Diagram Identification and Surface Roughness Monitoring in Milling Processes," December 2009, University of Girona, Spain, member of the Ph.D. Thesis Committee.
4. Deba Kumar Sarma, Ph.D. Thesis, "Experimental Study, Neural Network Modelling and Optimization of Environment-Friendly Air-Cooled and Dry Turning Processes," October 2009, Indian Institute of Technology, Guwahati, India, external evaluator of the Ph.D. Dissertation.
5. Zhanyu Sun, Ph.D. Dissertation, "Numerical Study of The Pressure-Driven Nitrogen Flows within Long Microchannels with The Application to Electronic Cooling", Mechanical and Aerospace Engineering, December 2008, Rutgers, The State University of New Jersey, member of the Ph.D. Dissertation

Committee.

6. Bekir Bartın, Ph.D. Dissertation, "Quality of Traveler Information in Traffic Networks", Civil and Environmental Engineering, October 2006, Rutgers, The State University of New Jersey, member of the Ph.D. Dissertation Committee.
7. Diógenes Feldhaus, Master's Thesis, "Compressor Early Life Reliability Modeling", Industrial and Systems Engineering, October 2003, Rutgers, The State University of New Jersey, member of thesis committee.

Visiting scholar supervision

1. Cristian Cappellini, IREBID Doctoral researcher, Dept. of Industrial Engineering at University of Brescia in Italy (November 1, 2011 – April 30, 2012).
2. Pedro Francisco Orozco Nieto, Manufacturing Systems Engineering, Instituto Tecnológico Y De Estudios Superiores De Monterrey in Mexico Visiting researcher, (October 1, 2011-March 30, 2012).
3. Carla Moura, IREBID Doctoral researcher, Polytechnic Institute of Leiria in Portugal, (October 25, 2011-January 25, 2012).
4. Elodie Pinto, IREBID Doctoral researcher, Polytechnic Institute of Leiria in Portugal, (October 25, 2011-January 25, 2012).
5. Joaquim De Ciurana, Ph.D., Visiting Professor, Industrial Engineering, University of Girona, Spain (between August 01-December 31, 2011).
6. Daniel Teixidor, IREBID Doctoral researcher, Dept. of Industrial Engineering at University of Girona in Spain, (March 10-August 30, 2011), "Laser milling process and laser micro-machining of polymeric and transparent materials for biomedical applications".
7. Nicola Milesi, IREBID Doctoral researcher, Dept. of Industrial Engineering at University of Brescia in Italy, (March 15-August 15, 2011) "Micro-milling process with applications in medical manufacturing, specifically 3D modeling of micro end-milling process using finite element models".
8. Ameia Aguirre, Visiting researcher, Ideko IK4 Technological Center in Spain, (March 15-June 15, 2011), "Micro-milling of thin wall structures for micro-heat sinking and micro-molding applications".
9. Simone Farina, IREBID Doctoral researcher, University of Brescia (Università degli Studi di Brescia), Dept. of Mechanical & Industrial Engineering, (April 2010-November 2010) "Micro-milling of titanium alloy for rapid fabrication of biomedical implants".
10. Joaquim De Ciurana, Ph.D., Visiting Professor, Industrial Engineering, University of Girona, Spain (between 04/2008-08/2008).
11. Xinyu Liu, Ph.D. Mechanical Engineering, University of Illinois, Urbana-Champaign, IL (between June 2006 and February 2007), currently an assistant professor in Department of Industrial Engineering, Lamar University, Texas.

Undergraduate student supervision

1. Mohamed Amin, BSIE, Rutgers (2011), supported by the NSF REU Program on "physics based-simulation modeling of machining titanium alloys".
2. Joel Lora, BSIE, Rutgers (2010), supported by the NSF REU Program on "physics based-simulation modeling of machining titanium alloys".
3. Joshua Greenhaus, BSIE, Rutgers (2010), supported by the NSF REU Program on "physics based-simulation modeling of machining titanium alloys".
4. Adam Miller, BSME, Rutgers (2008) supported by UTRC project on "investigations on the influence of machining-induced strain, stress and temperature fields on white-etch layer formation in IN-100 super alloy".
5. Mike Pandolfo, BSIE, Rutgers (2009) supported by UTRC project on "investigations on the influence of machining-induced strain, stress and temperature fields on white-etch layer formation in IN-100 super alloy".

SERVICE**Department of Industrial and Systems Engineering**

2010	Member, ISE Award Committee
2008-present	Advisor, ISE Class of 2012.
2008-present	Member, ISE Space and Tours Committee.
2008-present	Member, ISE Seminars Committee.
2002-2008	Member, ISE Undergraduate Committee.
2003-2008	Advisor, ISE Department Web-Site.
2003-present	Faculty Advisor to Society of Manufacturing Engineers, Student Chapter.
2003-present	Contributor, ISE Major's night.
2003-present	Contributor, ISE Department's Newsletter.
2002-present	Director, ISE Manufacturing Processes Laboratory.
2002-present	Director, ISE Automation Laboratory.
2002-present	Contributor, ISE Open House.
2004	Marshal, ISE Class of 2004, Commencement.
2002-2003	Co-director of Senior Design Projects.
2002-	Member, ISE Department's Seminar Organizing Committee.

School of Engineering

2007-2008	Contributor, Engineering's Engineers of The Future (EOF) Summer Program.
2004	Contributor, Engineering Discovery Day.
2003-2011	Member & Chair, SOE, Professional Engineering Committee.
2004-present	Member, SOE, Health and Safety Committee.
2002-present	Member, SOE, Seminars and Programs Committee.
2011-present	Member, Course of Study Committee.

University-wide Services

May 2007	Member, Rutgers University Move-in Planning Committee.
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MEMBERSHIP IN PROFESSIONAL SOCIETIES

Senior Member of American Society of Mechanical Engineers (ASME) • Senior Member of Society of Manufacturing Engineers (SME) • Scientific Committee Member of North American Manufacturing Research Institute (NAMRI) • Member of Turkish American Scientists and Scholars Association (TASSA) • Member of Institute of Electrical and Electronics Engineers (IEEE) • Member of International Federation of Automatic Control (IFAC) • Associate Member of CIRP-International Academy of Production Engineering