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## Sinan Müftü, Ph.D

Northeastern University  
Department of Mechanical and Industrial Engineering  
334 Snell Engineering Center  
Boston, MA 02115

Phone: (617) 373-4743  
Fax: (617) 373-2921  
s.muftu@neu.edu  
<http://www.coe.neu.edu/~smuftu>

### EDUCATION

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September 1989 – May 1994      **Ph.D., Mechanical Engineering**, University of Rochester, NY

September 1989 – May 1990      **M.S., Mechanical Engineering**, University of Rochester, NY

September 1987 – December 1989      **M.S., Mechanical Engineering**, Middle East Technical University

September 1983 – July 1987      **B.S., Mechanical Engineering**, Middle East Technical University  
Ankara, Turkey.

### WORK EXPERIENCE

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April 2011 – present      **Northeastern University, Professor**  
Department of Mechanical and Industrial Engineering

September 2000 – April 2011      **Northeastern University, Associate Professor**  
Department of Mechanical and Industrial Engineering

September 2007-September 2008      **Massachusetts Institute of Technology, Visiting Associate Professor**, Department of Civil and Environmental Engineering

January 1997 – August 2000      **Massachusetts Institute of Technology, Research Staff**  
Haystack Observatory, Westford, MA

January 1995 – December 1996      **Massachusetts Institute of Technology, Post-Doctoral Fellow**  
Haystack Observatory, Westford, MA

January 1995 – December 1996      **Pennsylvania State University, Post-Doctoral Fellow**  
Department of Mechanical Engineering, State College, PA

September 1989 – May 1994      **University of Rochester, Research Assistant**  
Department of Mechanical Engineering, Rochester, NY

May 1992 – October 1992      **3M, Summer Intern**, Data Cartridge Lab., St. Paul, MN

March 1988 – July 1989      **Middle East Technical University, Teaching Assistant**  
Department of Architecture, Ankara, Turkey

### AWARDS AND HONORS

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Fellow American Society of Mechanical Engineers, 2007  
Pi Tau Sigma, Outstanding Faculty Member, Mechanical Engineering Department, NEU, 2007  
Associate Editor, *Journal of Advanced Mechanical Design, Systems and Manufacturing, JSME International*, 2006-present  
Review Board, *Journal of Oral and Maxillofacial Implants*, 2011-present  
Nominated, Society of Automotive Engineers, Ralph Teetor Educator Award, 2004  
Received, Outstanding Teaching Award, College of Engineering, Northeastern University, 2003

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Received, Best Paper Award, ASME, Information Storage & Processing Systems Division, 1997  
Teaching and research assistantships, University of Rochester, 1989-1994  
Deans' Honor List, Middle East Technical University 1987  
Third place, Mathematics Competition, Scientific and Technical Research Council, Turkey, 1979

## **PATENTS**

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**S. Müftü** and H. Hinteregger "Contact Sheet Recording with a Negative Air Bearing," US Patent 6,118,626, September 2000.

**S. Müftü** and H. Hinteregger "Helical Scan Recording with a Self-Acting Neg. Air Bearing," US Patent 6,151,191, November 2000.

## **THESES**

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**S. Müftü**, "The Transient Foil Bearing Problem in Magnetic Recording", Ph.D. Thesis  
Department of Mechanical Engineering, University of Rochester, April 1994  
Advisor: Professor Richard C. Benson

**S. Müftü**, "Investigation of Stress History in Extrusion by the Finite Element Method," M.S. Thesis  
Department of Mechanical Engineering, METU, Ankara, Turkey, December 1989  
Advisor: Professor A. Erman Tekkaya

## **ENCYCLOPEDIA and BOOK CHAPTERS**

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**S. Müftü**, A. Müftü, "Biomechanics of Tooth and Jaw" Encyclopedia of Medical Devices and Instrumentation. Editor: J.G. Webster, John Wiley & Sons, NY, pp. 411-428, 2006.

S. Faegh, H.-Y. Chou and **S. Müftü**, "Load Transfer along the Bone-Implant Interface and its Effects on Bone Maintenance" *Dental Implants*, Editor: Ilser Turkyilmaz, Intech Publishing, pp. 163-190, 2011.

## **PAPERS IN REVIEW**

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1. B. Yildirim, **S. Müftü**, "Impact of High Velocity Particles onto a Rough Surface," *International Journal of Solids and Structures*, July 2011.
2. Chou, H-S, G. Romanos, A. Müftü, **S. Müftü**, "Peri-Implant Bone Remodeling Around a Fresh Extraction Socket: Predictions of Bone Maintenance by Finite Element Method", submitted to *International Journal of Oral and Maxillofacial Implants*, January 2011.

## **PUBLICATIONS IN REFEREED JOURNALS**

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1. J. Shi, **S. Müftü**, K.T. Wan, "Adhesion of a compliant cylindrical shell onto a rigid substrate," *Journal of Applied Mechanics*, accepted, June 2011.

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2. J. Shi, M. Robitaille, **S. Müftü**, K-T Wan, "Deformation of a Convex Hydrogel Shell by Parallel Plate and Central Compression," *Journal of Experimental Mechanics*, DOI 10.1007/s11340-011-9514-z, June 2011.
  3. J. Shi, **S. Müftü**, K-T Wan, "Adhesion of an Elastic Convex Shell onto a Rigid Plate," *Journal of Adhesion*, 87(6), pp. 579 - 594, 2011.
  4. B. Yildirim, **S. Müftü**, A. Gouldstone, "Modeling of High Velocity Impact of Spherical Particles," *Wear*, Vol. 270(9-10), pp. 703-713, 2011.
  5. E. Lopez, **S. Müftü**, "The fluid structure interactions between a tensioned web and an externally pressurized hollow drum," *Journal of Fluids and Structures*, Vol. 27, pp. 487-502, 2011.
  6. E. Lopez, **S. Müftü**, "Vibration of thin, tensioned, helically wrapped plates," *Journal of Sound and Vibration*, Vol. 330(4), pp. 685-702, 2011.
  7. M.A. Karnath, Q. Sheng, A.J. White, **S. Müftü**, "Frictional characteristics of ultra-thin polytetrafluoroethylene (PTFE) films deposited by hot filament- chemical vapor deposition (HFCVD)," *STLE Tribology Transactions*, 54, Vol. 36-43, 2011.
  8. H.-Y. Chou, D. Bozkaya, **S. Müftü**, "A comparative evaluation of implant length and diameter on peri-implant bone strain distribution" *Journal of Prosthetic Dentistry*, Vol. 104(5), pp. 293-300, 2010.
  9. S. Faegh, **S. Müftü**, "Load transfer along the bone-dental implant interface," *Journal of Biomechanics*, Vol. 43, pp. 1761-1770, 2010.
  10. D. Bozkaya, **S. Müftü**, "Effects of surface forces on material removal rate in chemical mechanical planarization," *Journal of the Electrochemical Society*, Vol. 157(3) H287-296, 2010.
  11. D. Bozkaya, **S. Müftü**, "A Material Removal Model for CMP based on the contact mechanics of pad, abrasives and wafer," *Journal of the Electrochemical Society*, Vol. 156(12), H890-902, 2009.
  12. S. Keten, J.F.R. Alvarez, **S. Müftü**, M. Buehler, "Nanomechanical characterization of the triple beta-helix domain in the cell puncture needle of bacteriophage T4 virus" *Cellular and Molecular Bioengineering*, Vol. 2(1), pp. 66-74, 2009.
  13. G. Calota, N. Maximova, K. Ziemer, **S. Müftü**, "Investigation of Chemical/Mechanical Polishing of Niobium," *STLE Tribology Transactions*, Vol 52(4), pp. 447-459, 2009.
  14. C.-L. Chen, E. Lopez, Y.-J. Jung, S. Selvarasah, **S. Müftü**, M. Dokmeci, "Mechanical and Electrical Evaluation of Parylene-C Encapsulated Carbon Nanotube Networks on a Flexible Substrate," *Applied Physics Letters*, vol. 93, 093109, 2008. (This paper was also selected for publication in the September 15<sup>th</sup>, 2008 issue of the *Virtual Journal of Nanoscale Science and Technology*).

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15. D. Bozkaya, **S. Müftü**, "The Effects of Interfacial Particles on the Contact of an Elastic Sphere with a Rigid Flat Surface," *ASME Journal of Tribology*, Vol. 130, 041401 (2008). (Top 10 Most Downloaded Articles from journal website -- August 2008)
  16. H.-Y. Chou, J. J. Jagodnik, **S. Müftü**, "Predictions of Bone Remodeling around Dental Implant Systems," *Journal of Biomechanics*, 41(6), pp. 1365-1373, 2008.
  17. M. Gaith and **S. Müftü**, "Lateral vibration of two axially translating beams interconnected by Winkler foundation," *Journal of Vibration and Acoustics, Trans. ASME*, Vol. 129, No.3, pp. 380-385, 2007. (Top 10 Most Downloaded Articles from journal website-- June 2007).
  18. **S. Müftü**, "Mechanics of a thin, tensioned-shell, wrapped helically around a turn-bar," *Journal of Fluids and Structures*, Vol. 23. No.5, pp. 767-785, 2007.
  19. A.O. Sergici, G.G. Adams, **S. Müftü**, "Adhesion in the contact of a spherical indenter with a layered elastic half-space," *Journal of the Mechanics and Physics of Solids*, Vol. 54, No. 9, 2006, pp. 1843-1861.
  20. P. J., Ryan, G.G. Adams, N. E. McGruer, **S. Müftü**, "Contact Scanning Mode AFM for Nanomechanical Testing," *Journal of Micromechanics and Microengineering* , Vol. 16, No. 5, 2006, pp. 1040-1046.
  21. G. Zen and **S. Müftü**, "Stability of an accelerating string subjected to frictional guiding forces," *Journal of Sound and Vibration*, Vol. 289, pp. 551-576, 2006.
  22. **S. Müftü**, (**Invited**) "Mechanics of Thin, Flexible, Translating Media and Their Interactions with Surrounding Air," *JSME International Journal* special issue "Frontier of Research and Development of Information Devices in the Pacific Rim," Vol. 48, No. 3, pp. 329-336, 2005.
  23. P. Holani and **S. Müftü**, (**Invited**) "An adaptive finite element strategy for analysis of air lubrication in the head-disk interface of a hard disk drive," *Revue Européenne des Élément Finis*, Vol. 14, No. 2-3, pp. 155-180, 2005.
  24. G.G. Adams and **S. Müftü**, "Improvements to a scale dependent model for contact friction," *Journal of Physics: D Applied Physics*, Vol. 38, pp. 1402-1409, 2005.
  25. Ö. T. Sari, G. G. Adams and **S. Müftü**, "Nano-Scale Effects in the Adherence, Sliding and Rolling of a Cylinder on a Substrate," *Journal of Applied Mechanics, Trans. ASME* Vol. 72, pp. 633-640, 2005.
  26. D. Bozkaya and **S. Müftü**, "Mechanics of the Taper Integrated Screwed-In (TIS) Abutments Used in Dental Implants," *Journal of Biomechanics*, Vol. 38, pp 87-97, 2005.
  27. D. Bozkaya, **S. Müftü**, A. Müftü, "Evaluation of Load Transfer Characteristics of Five Different Implants in Compact Bone at Different Load Levels by Finite Element Analysis," *The Journal of Prosthetic Dentistry*, Vol. 92/6 pp 523-530, 2004.
  28. D. Bozkaya and **S. Müftü**, "Efficiency Considerations for the Purely Tapered Interference Fit (TIF) Abutments Used in Dental Implants," *Journal of Biomechanical Engineering, Trans ASME*, Vol. 126, pp. 393-401, 2004.

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29. **S. Müftü** and J. J. Jagodnik, "Traction between a web and a smooth roller," *Trans ASME, Journal of Tribology*, Vol. 126, No. 1, pp. 177-184, 2004.
  30. D. Bozkaya and **S. Müftü**, "Mechanics of the tapered interference fit in dental implants," *Journal of Biomechanics*, Vol. 36, No. 11, pp. 1649-1658, November 2003.
  31. G. G. Adams, **S. Müftü** and N. Mohd Azhar, "A scale-dependent model for multi-asperity contact and friction," *Trans ASME, Journal of Tribology*, Vol. 125, pp. 700-708, 2003.
  32. **S. Müftü**, "Tape mechanics over a flat recording head under uniform pull-down pressure," *Microsystem Technologies*, Vol. 9, No.8, October, 2003, pp. 546-554.
  33. B.S. Rice, K.A. Cole and **S. Müftü**, "A Model for Determining the Asperity Engagement Height in Relation to Web Traction over Non-vented Rollers" *Journal of Tribology, Trans. ASME*, Vol. 124, pp. 584 - 594, 2002.
  34. **S. Müftü** and Donna Jean Kaiser, "Measurements and Theoretical Predictions of Head/Tape Spacing over a Flat Head," *Tribology International*, Vol. 33, pp. 415-430, 2000.
  35. H.F. Hinteregger and **S. Müftü**, "Flat-Heads for Contact Tape Recording: Performance Measurements at Different Wrap Angles, Tape Tension, Speed and Stiffness," *Journal of Information Storage and Processing Systems*, Vol. 2, pp. 75-82, 2000.
  36. **S. Müftü** and M.C. Altan, "Mechanics of a Porous Web Moving Over a Rigid Guide," *Journal of Tribology, Trans. ASME*, Vol. 122, pp. 418-426, 2000.
  37. **S. Müftü**, G.E. Hall, D.J. Kaiser, Alan E.E. Rogers and Maria-Isabel Carnasciali, "The Natural Contour of a Tape-Lapped Recording Head: A Theoretical and Experimental Investigation" *Journal of Information Storage and Processing Systems*, Vol. 1, pp. 287-298, 1999.
  38. **S. Müftü** and K.A. Cole, "The Fluid/Structure Interaction of a Thin Flexible Cylindrical Web Supported by an Air Cushion," *Journal of Fluids and Structures*, Vol. 13, pp. 681-708, 1999.
  39. **S. Müftü**, T.S. Lewis, K.A. Cole and R.C. Benson, "A Two Dimensional Model of the Fluid Dynamics of an Air Reverser," *Journal of Applied Mechanics, Trans. ASME*, Vol. 65, No. 1, pp. 171-177, March 1998.
  40. **S. Müftü** and H.F. Hinteregger, "The Self-Acting, Subambient Foil Bearing in High Speed, Contact Tape Recording with a Flat Head," *STLE Tribology Transactions*, Vol. 41, No. 1, pp. 19-26, 1998.
  41. H.F. Hinteregger and **S. Müftü**, "Contact Tape Recording with a Flat Head Contour," *IEEE Transactions on Magnetics*, pp. 3476-3478, September 1996.
  42. **S. Müftü** and R.C. Benson, "A Study on Width-Wise Variations in the Two Dimensional Foil Bearing Problem", *Journal of Tribology, Trans. ASME*, Vol. 118, No.2, pp. 407-414, 1996.
  43. **S. Müftü** and R.C. Benson, (**invited**) "VideoTape Behavior On Rotary Heads: Modeling and Results," *JAST Tribologists Journal*, December 1995 (in Japanese).

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44. **S. Müftü** and R.C. Benson, "A Numerical Solution to Transient Displacement of a Circumferentially Moving Cylindrical Shell", *Journal of Vibration and Acoustics, Trans. ASME*, Vol. 116, No. 4, pp. 567-572, 1994.
  45. **S. Müftü** and R.C. Benson, "A Numerical Simulation of Tape Dynamics in Helical-Scan Recording", *IEEE Transactions on Magnetics*, vol. 29, no. 6, November 1993, pp. 3927-2929.
  46. U. Gamer and **S. Müftü**, "On the Elastic-Plastic Shrink Fit with Supercritical Interference", *Zeitschrift fuer Angewandte Mathematik und Mechanik, ZAMM, Applied Mathematics and Mechanic*, Vol. 70, No. 11, 501-507, 1990.

## **PUBLICATIONS IN CONFERENCE PROCEEDINGS**

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1. B. Yildirim, **S. Müftü**, A. Gouldstone, "On cohesion of micron scale particles in high velocity impact with a metal substrate" Proceedings of the ASME/STLE 2011 International Joint Tribology Conference, Los Angeles, CA, IJTC2011-61084, October 23-26, 2011.
2. S. Patel, **S. Müftü**, "On polishing and erosion of aluminum substrates by a jet of alumina slurry" Proceedings of the ASME/STLE 2011 International Joint Tribology Conference, Los Angeles, CA, IJTC2011-61082, October 23-26, 2011.
3. B. Yildirim, **S. Müftü**, A. Gouldstone, "Observations on the Numerical Modeling of High Velocity Impact of Micron Scale Particles" US National Congress of Theoretical and Applied Mechanics, State College, PA, USNCTAM2010-1047, June 27-July2, 2010.
4. E. Lopez, **S. Müftü**, "The Fluid Structure Interactions Between a Tensioned Web and an Externally Pressurized Hollow Drum," US National Congress of Theoretical and Applied Mechanics, State College, PA, USNCTAM2010-921, June 27-July2, 2010.
5. H.Y. Chou, **S. Müftü**, "Bone Remodeling Around Dental Implant Systems," US National Congress of Theoretical and Applied Mechanics, State College, PA, USNCTAM2010-886, June 27-July2, 2010.
6. J. Shi, **S. Müftü**, K. Wan, "Adhesion Mechanics of a Compliant Cylinder," US National Congress of Theoretical and Applied Mechanics, State College, PA, USNCTAM2010-832, June 27-July2, 2010.
7. B. Yildirim, **S. Müftü**, A. Gouldstone "Effect of Impact Velocity and Angle on the Deformation Behavior of Micron Scale Particles," 14<sup>th</sup> *International Conference on Machine Design and Production*, June 29 – July 2, 2010, Guzelyurt, Northern Cyprus.
8. D. Bozkaya, **S. Müftü**, "Optimization of Material Removal Efficiency in Low Pressure CMP," *Proceedings MRS Spring Meeting*, San Fransisco, CA, April, 2009.
9. S. Faegh, **S. Müftü**, "Load transfer along the bone dental implant interface," *Proceedings of the ASME 2009 Summer Bioengineering Conference (SBC2009) June 17-21*, Lake Tahoe, CA, 2009.
10. E. Lopez, J. Masters, **S. Müftü**, "On the vibration helically wrapped webs" *Symposium on Mechanics of Slender Structures*, Baltimore, MD, July 23-25, 2008.

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11. D. Bozkaya, **S. Müftü**, “On the Effects of Surface Forces on the Contact of a Wafer and Abrasive Particles in CMP,” *Proceedings of the STLE/ASME International Joint Tribology Conference*, IJTC2008-71122, Miami, Florida, USA, October 20-22, 2008.
  12. D. Bozkaya, **S. Müftü**, “A Model For Optimizing Material Removal Rate In Low-Pressure Cmp: Effects Of Pad Porosity And Abrasive Concentration,” *Proceedings of the STLE/ASME International Joint Tribology Conference*, IJTC2008-71129, Miami, Florida, USA, October 20-22, 2008.
  13. A.M. Karnath, A.J. White, **S. Müftü**, “Frictional Characteristics Of Polytetrafluoroethylene (PTFE) Thin Films Deposited By Hot Filament – Chemical Vapor Deposition (HFCVD),” *Proceedings of the STLE/ASME International Joint Tribology Conference*, IJTC2008-71131, Miami, Florida, USA, Oct. 20-22, 2008.
  14. D. Bozkaya, **S. Müftü**, “Effects of the pad porosity on material removal rate for low-pressure CMP”, *Proceedings 2008 CMP-MIC*, Fremont, CA March 4-6, 2008.
  15. E. Lopez, J. Masters, **S. Müftü**, “Free vibration analysis of thin, tensioned, helically wrapped webs using Mindlin-Reissner finite element method,” *Proceedings of the Ninth International Conference on Web Handling*, Oklahoma State University, Stillwater, OK, USA, June 11-13, 2007.
  16. M. Gaith and **S. Müftü**, “The vibration of two axially translating media interconnected by an elastic foundation,” *Proceedings of the Ninth International Conference on Web Handling*, Oklahoma State University, Stillwater, OK, USA, June 11-13, 2007.
  17. C.-L. Chen, E. Lopez, M. R. Dokmeci, Y.-J. Jung, and **S. Müftü**, “Manufacturing and performance evaluation of carbon nanotube-parylene sandwich thin films,” *Proceedings of the Ninth International Conference on Web Handling*, Oklahoma State University, Stillwater, OK, USA, June 11-13, 2007.
  18. D. Bozkaya, **S. Müftü**, “Contact Model for a Pad Asperity and a Wafer Surface in the Presence of Abrasive Particles for Chemical Mechanical Polishing”, *Proceedings MRS Spring Meeting*, San Fransisco, CA April 9-13, 2007.
  19. Y.-J. Jung, L. Jaber-Ansari, X. Xiong, **S. Müftü**, A. Busnaina, S. Kar, C. Soldano, and P.-M. Ajayan, “Highly Organized Carbon Nanotube-PDMS Hybrid System for Multifunctional Flexible Devices,” *Proceedings of 2007 ASME International Design Engineering Technical Conference & Computer and Information Engineering Conference*, September 4-7, 2007, Las-Vegas, NV.
  20. C.-L. Chen, E. Lopez, P. Makaram, A. Busnaina, Y.-J. Jung, **S. Müftü**, and M. R. Dokmeci, “Fabrication and evaluation of Carbon Nanotube-Parylene functional composite films,” *Proceedings of the 14th International Conference on Solid-State Sensors, Actuators and Microsystems (Transducers '07)*, Lyon, France, June 10-14 2007.
  21. M. Gaith and **S. Müftü**, “The vibration of two axially translating strings interconnected by winkler elastic foundation,” *Proceedings of 2006 ASME International Mechanical Engineering Congress and Exposition* November 5-10, 2006 Chicago, Illinois IMECE2006-14067.

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22. M. Gaith and **S. Müftü**, "Analytical and experimental natural frequencies of transverse vibration of sandwich beams interconnected by Winkler elastic foundation," *Proceedings of 2006 ASME International Mechanical Engineering Congress and Exposition* November 5-10, 2006 Chicago, Illinois, IMECE2006-14069.
  23. M. Gaith and **S. Müftü**, "Free vibration analysis of two axially translating strings interconnected by a continuous elastic foundation," *ASME/JSME Joint Conference on Micromechatronics for Information and Precision Equipment (MIPE 2006)* Santa Clara, CA, June 21-23, 2006.
  24. E. Lopez and **S. Müftü**, "Investigation of Fluid Mechanics of Slotted Air-Jets for Air Reverser Applications," *Proceeding of the Eight International Conference on Web Handling*, Oklahoma State University, Stillwater, OK, USA, June 5-8, 2005, IMECE2005-80377.
  25. **S. Müftü**, "The Mechanics of a Thin Web Wrapped Helically Around a Turn Bar," *Proceeding of the Eight International Conference on Web Handling*, Oklahoma State University, Stillwater, OK, USA, June 5-8, 2005.
  26. M. Gaith and **S. Müftü**, "Transverse Vibration of Two Axially Moving Beams Connected By an Elastic Foundation," *Proceedings of 2005 ASME International Mechanical Engineering Congress and Exposition* November 11-15, 2005 Orlando, Florida.
  27. **S. Müftü, (Invited)** "Mechanics of Thin, Flexible, Translating Media and Their Interactions with Surrounding Air," *Proceedings of the JSME, Information, Intelligence & Precision Equipment (IIP) 2005 Conference*, Tokyo, Japan, March 21-22, 2005.
  28. Ö.T. Sari, G. G. Adams and **S. Müftü**, "The sliding and rolling of a cylinder at the nano scale" *Proceedings of 2004 STLE/ASME Joint International Tribology Conference Long Beach, California USA, October 24-27, 2004, CD-ROM Proceedings TRIB200-64347*.
  29. G. G. Adams and **S. Müftü**, "Height Dependent Radii of Curvatures in a Contact and Friction Model," *Proceedings of 2004 STLE/ASME Joint International Tribology Conference Long Beach, California USA, October 24-27, 2004, CD-ROM Proceedings TRIB200-64349*.
  30. G. G. Adams and **S. Müftü**, "Asymmetric Asperity Height Distributions in a Scale-Dependent Model for Contact and Friction," *Proceedings of 2004 27<sup>th</sup> Annual Meeting of the Adhesion Society, February 15-18, 2004, Wilmington, NC*.
  31. G. Zen and **S. Müftü**, "Friction Induced Transverse Vibrations of an Accelerating String," *Proceedings of 2003 STLE/ASME Joint International Tribology Conference Ponte Vedra Beach, Florida USA, October 26-29, 2003*.
  32. J.J. Jagodnik and **S. Müftü**, "A Cylindrical Contact Model for Two Dimensional Multiasperity Profiles," *Proceedings of 2003 STLE/ASME Joint International Tribology Conference Ponte Vedra Beach, Florida USA, October 26-29, 2003*.
  33. G. G. Adams and **S. Müftü**, "Asymmetric Asperity Height Distributions in a Scale-Dependent Model for Contact and Friction," *Proceedings of 2003 STLE/ASME Joint International Tribology Conference Ponte Vedra Beach, Florida USA, October 26-29, 2003*.



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34. G. G. Adams, Ö.T. Sari, and **S. Müftü**, "Sliding and Rolling In Particle Adhesion On A Substrate" *Proceedings of the Annual Meeting of the Adhesion Society, February 23-26, 2003, Myrtle Beach, SC.*
  35. G. G. Adams, **S. Müftü** and N. Mohd Azhar, "Scale Dependence Of The Coefficient Of Friction," *Proceedings of the Annual Meeting of the Adhesion Society, February 23-26, 2003, Myrtle Beach, SC*
  36. G. G. Adams, **S. Müftü** and N. Mohd Azhar, "A nano-scale multi-asperity contact and friction model," *Proceedings of 2002 ASME/STLE Joint International Tribology Conference Cancun, Mexico, October 27-30, 2002.*
  37. G. G. Adams, **S. Müftü** and N. Mohd Azhar, "A nano-scale multi-asperity contact and friction model," *Proceedings of IMECE'02 2002 ASME International Mechanical Engineering Congress & Exposition New Orleans, Louisiana, November 17-22, 2002.*
  38. **S. Müftü**, "The mechanics of helically wrapped thin shell supported by an externally pressurized air cushion", *Proceedings of FSI, AE & FIV+N Symposium ASME Winter Annual Meeting 2002* (Peer reviewed).
  39. **S. Müftü**, (Invited) "Simulation of Moving Thin Materials," *Proceedings of the Symposium in Celebration of 100 Years of Mechanical Engineering at Brooklyn Polytechnic: Technology for the Next Century*, November 4-5, 1999.
  40. B.S. Rice, K.A. Cole and **S. Müftü**, "An Experimental and Theoretical Investigation of Web Traction Over a Non-Vented Roller," *Proceedings of the International Web Handling Conference 1999, Oklahoma State University, Stillwater, OK*, June 1999. (Peer reviewed).
  41. **S. Müftü** and K.A. Cole "Mechanics of a Flexible Web Floating over an Air Reverser," *Proceedings of the International Web Handling Conference 1999, Oklahoma State University, Stillwater, OK*, June 1999. (Peer reviewed).
  42. **S. Müftü** "Numerical Solution of the Equations Governing the Steady State of a Thin Cylindrical Web Supported by an Air Cushion," *Proceedings of the Symposium on Flow-Induced Vibration and Noise of Thin Materials, The Winter Annual Meeting of the ASME, Nashville, TN*, November 1999.
  43. **S. Müftü**, T.S. Lewis, and K.A. Cole, "A Numerical Solution of the Euler's Equations with Nonlinear Source Terms in Modeling the Fluid Dynamics of an Air Reverser," *Proceedings of the I.S.P.S., ASME International Congress and Exposition, Dallas, TX*, pp. 39-48, November 1997.
  44. **S. Müftü** and H.F. Hinteregger, "Flat Heads for High Speed Contact Tape Recording: Experiments and Modelling of Wear and Performance," *Proceedings of the I.S.P.S., ASME International Congress and Exposition, Atlanta, GA*, pp. 39-52, November 1996.
  45. **S. Müftü** and R.C. Benson, "Transient Study of the Two Dimensional Foil Bearing Problem," *Proceedings of the International Tribology Conference, Yokohama 1995*, pp. 959-964, JAST, 1996. (Peer reviewed).

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46. **S. Müftü** and R.C. Benson, "Modelling the Transport of Paper Webs Including the Paper Permeability Effects," *Proceedings of the I.S.P.S., ASME International Congress and Exposition, San Francisco, CA*, pp. 247-258, November 1995.

## RESEARCH REPORTS

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1. Chou, H.-Y., **Müftü, S.**, *Numerical Modeling of Bone Adaptation for Dental Implant Systems*, Final Report to Bicon Inc., August 31, 2011 (126 pages).
2. Yildirim, B., Gouldstone, A, **Müftü, S.**, *Modeling and Simulations of the Mechanics of Cold Spray Process*, Final Report to HC Starck, Inc. September 13, 2011, 185 pages.
3. **Müftü, S.**, Ziemer K., Calota, G. and Maximova, N. *Chemical Mechanical Polishing of Niobium*, Final Report to H. C. Starck, Department of Mechanical Engineering, Northeastern University, Boston, MA 02115, October 30, 2007, 91 pages.
4. Jagodnik, J., **Müftü, S.**, "Numerical Investigation of Bone Remodeling Around Dental Implants by Finite Element Analysis," Project progress report to Bicon, Department of Mechanical Engineering, Northeastern University, Boston, MA 02115, August 16, 2005, 37 pages.
5. Rossettos, J., **Müftü, S.**, "Experimental investigation of slip and strength characteristics of hybrid yarns," Final project report to Army Research Office, Contract No: 44367-EG, March 2003.
6. **Müftü, S.**, Bozkaya, D., *Report # 1: The FEA of the 3.5 mm Implant-Abutment-Bone System Under Central Occlusal Loads*, Project progress report to Bicon, Department of Mechanical Engineering, Northeastern University, Boston, MA 02115, 41 pages, February 2002.
7. **Müftü, S.**, Bozkaya, D., *Report # 2: Mechanics of the tapered interference fit in a 3.5 mm Bicon Implant*, Project progress report to Bicon, Department of Mechanical Engineering, Northeastern University, Boston, MA 02115, 41 pages, May 2002.
8. **Müftü, S.**, Bozkaya, D., *Report # 3.: Comparative Axisymmetric FEA of the Bicon, Ankylos, Astra, ITI Implant-Abutment Systems Under Non-Central Occlusal Loads*, Project progress report to Bicon, Department of Mechanical Engineering, Northeastern University, Boston, MA 02115, July 2002.
9. **Müftü, S.**, Bozkaya, D., *Report # 3.B: Comparative Axisymmetric FEA of the Bicon, Ankylos, Astra, ITI (4.1 and 4.8 mm) & Nobel Biocare Implant-Abutment Systems Under Non-Central Occlusal Loads*, Project progress report to Bicon, Department of Mechanical Engineering, Northeastern University, Boston, MA 02115, 30 pages, September 2002.

## CONFERENCE DIGESTS

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1. J. Shi, **S. Müftü**, K.-T. Wan, "Adhesion of Compliant Cylinders," *Adhesion Society Meeting*, Daytona Beach, FL, February 21-24, 2010.
2. H.Y. Chou, **S. Müftü**, "Bone Remodeling Due to Dental Implant Systems by Finite Element Analysis," abstract for the *American Association of Dental Research Meeting*, Washington, DC, March 3-6, 2010.

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3. J. Shi, **S. Müftü**, K.-T. Wan, “Adhesion Mechanics of a Cylinder and a Rigid Substrate,” abstract for the *MRS Fall Meeting*, Boston, MA, **November**, 2009.
  4. H.Y. Chou, **S. Müftü**, “Observations on Bone-Implant Contact Based on Analysis of Internal Bone Remodeling” abstract for the *Academy of Osseointegration 23<sup>rd</sup> Annual Meeting*, San Diego, CA, February 26-29, 2009.
  5. S. Faegh, **S. Müftü**, “Fundamental Mechanisms of Load Transfer along the Bone Implant Interface,” abstract for the *Academy of Osseointegration 23<sup>rd</sup> Annual Meeting*, San Diego, CA, February 26-29, 2009.
  6. **S. Müftü** and K. Ziemer “Chemical mechanical polishing for obtaining very smooth surfaces: An overview of technology and the case of Niobium” RF Superconducting Materials Workshop, Fermi National Accelerator Laboratory, Batavia, IL, May 23-24, 2007.
  7. Lopez, E. and **Müftü, S.**, “Free Vibration analysis of thin, tensioned, helically wrapped webs using Mindlin-Reissner finite element method,” Conference digest ASME Information Storage and Processing Systems Conference, Santa Clara, CA, 2007.
  8. D. Bozkaya, **S. Müftü**, “Contact Model for a Pad Asperity and a Wafer Surface in the Presence of Abrasive Particles for Chemical Mechanical Polishing”, *MRS Spring Meeting*, San Francisco, CA April 9-13, 2007.
  9. **S. Müftü**, H.Y. Chou., D. Bozkaya, “Biomechanical evaluation of A wide-diameter short dental implant for use in compromised bone quality regions”, abstract for the *Academy of Osseointegration 21<sup>st</sup> Annual Meeting*, March 8-10, 2007, San Antonio, TX.
  10. **S. Müftü**, H.Y. Chou., J. Jagodnik, “Effect of mechanotransduction in bone remodeling around dental implants”, abstract for the *Academy of Osseointegration 21<sup>st</sup> Annual Meeting*, March 8-10, 2007, San Antonio, TX.
  11. Lopez, E., Chen, C.-L., Jung, Y.J., Dokmeci M., and **Muftu S.**, “Manufacturing and Performance Evaluation of Organized Carbon Nanotube-Parylene Multi-Functional Active Thin-Films” *MRS Fall Meeting*, Boston, MA, Abstract No C3.18, 2006.
  12. H.Y. Chou, **S. Müftü**, D. Bozkaya, “Biomechanical evaluation of A wide-diameter short dental implant for use in compromised bone quality regions by finite element method”, *Proceedings of NanoBio2006, Frontiers in Biomedical Devices Conference* June 8-9, 2006, Irvine, California, USA, NanoBio2006, 18022.
  13. P.J. Ryan, G.G. Adams, N.E. McGruer, **S. Müftü**, “An AFM-based scanning method for mechanical testing of nanoscale cantilevers,” *Materials Research Society Fall 2005 Meeting*, CD-ROM-NN9.7, 2005.
  14. P.J. Ryan, G.G. Adams, N.E. McGruer, **S. Müftü**, “Bending of bridge structures due to residual stresses at an interface,” *Materials Research Society Fall 2005 Meeting*, CD-ROM-Y3.5, 2005.

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15. A.O., Sergici, G.G. Adams, **S. Müftü**, "Adhesion in the Contact of a Spherical Indenter with a Layered Medium," Proceedings of WTC 2005, World Tribology Congress III, September 12-16, 2005, Washington, D.C., USA, CD-ROM **WTC2005-63382**.
  16. J.J. Jagodnik, S. **Müftü**, "A model for analyzing multi-asperity contact of thin sheets with real surfaces on both sides," Proceedings of WTC 2005, World Tribology Congress III, September 12-16, 2005, Washington, D.C., USA, CD-ROM **WTC2005-63862**.
  17. G. Zen, S. **Müftü**, "Stability of an Accelerating String Subjected to Frictional Guiding Forces," Proceedings of WTC2005, World Tribology Congress III, September 12-16, 2005, Washington, D.C., USA, CD-ROM **WTC2005-63863**.
  18. Holani, P. and **Müftü, S.**, "Head-Disk Interface Analysis Using Quadrilateral Adaptive Finite Elements", Conference digest ASME Information Storage and Processing Systems Conference, Santa Clara, CA, 2005.
  19. Zen, G. and **Müftü, S.**, "Stability of an Axially Accelerating String Subjected to Frictional Guiding-Forces", Conference digest ASME Information Storage and Processing Systems Conference, Santa Clara, CA, 2005.
  20. Jagodnik, J. and **Müftü, S.**, "A model for Analyzing Multiasperity Contact of Thin Sheets with Real Surfaces on Both Sides", Conference digest ASME Information Storage and Processing Systems Conference, Santa Clara, CA, 2005.
  21. **Müftü, S.** and Bozkaya, D., "Biomechanical Evaluation of a Wide Diameter Bicon Dental Implant in Various Bone Conditions," abstract at the Academy of Osseointegration 19<sup>th</sup> Annual Meeting, March 18-20, 2004, San Francisco, CA.
  22. **Müftü, S.** and Bozkaya, D., "Design Considerations for Taper Integrated Screwed-In Implant-Abutment Connections," abstract at the Academy of Osseointegration 19<sup>th</sup> Annual Meeting, March 18-20, 2004, San Francisco, CA.
  23. **S. Müftü**, "Traction between a web and a smooth roller," Joint JSME-ASME Conference on Micromechatronics for Information and Precision Equipment, June 15-18, 2003, Yokohama, Japan.
  24. **S. Müftü**, "Tape mechanics over a flat recording head," Joint JSME-ASME Conference on Micromechatronics for Information and Precision Equipment, June 15-18, 2003, Yokohama, Japan.
  25. Bozkaya, D., **Müftü, S.**, "Tapered Connection Mechanisms in Dental Implants," abstract for the Academy of Osseointegration 18<sup>th</sup> Annual Meeting, February 27-March 1, 2003, Boston MA.
  26. Bozkaya, D., **Müftü, S.** and Müftü, A., " Stress Distribution Characteristics of Various Implant Systems due to Non-central Occlusal Loads," abstract for the Academy of Osseointegration 18<sup>th</sup> Annual Meeting, February 27-March 1, 2003, Boston MA.
  27. Mohd-Azar, N., Adams, G. G., **Müftü, S.**, "A Multi-Asperity Friction Model Which Spans Length Scales From Nano-Contacts to Micro- and Macro-Contacts", Conference digest ASME Information Storage and Processing Systems Conference, Santa Clara, CA, 2002.

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28. Bozkaya, D. and **Müftü, S.** (2002) "The Effect of Bone Modulus on the Stress Distribution in a Dental Implant: A 3D Finite Element Analysis," Conference digest, BED-Vol. 53, 2002 Advances in Bioengineering, ASME 2002.

## **FUNDING HISTORY**

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1994-2000: \$136,000 (as PI) and \$420,000 (as co-PI)  
2000-pres.: \$1,317,937 (as PI) and \$805,978 (as co-PI)  
Total: \$1,453,957 (as PI) and \$1,225,978 (as co-PI)

### **At Northeastern University**

1. "Fundamentals of Bonding in Kinetic Consolidation Processes," A. Gouldstone (PI), S. Müftü and T. Ando, \$400,000, National Science Foundation, August 2011 – July 2014.
2. "Solid mechanics approach to Micro-organism Adhesion-Aggregation-Transportation," K.-T. Wan (PI), A. Gu, S. Müftü, \$50,000, Tier 1 Interdisciplinary Seed Project, Northeastern University, July 2011- July 2012.
3. "Forming an interdisciplinary team to investigate science of cold spray," S. Müftü (PI), D. Kaeli, M. Upmanyu, A. Gouldstone, \$50,000, Tier 1 Interdisciplinary Seed Project, Northeastern University, July 2011- July 2012.
4. "Theoretical and Experimental Investigation of Bonding in Cold Spray," S. Müftü (PI, 34%), A. Gouldstone (co-PI, 33%), T. Ando, (co-PI, 33%) \$145,246, Plasma Giken Kogyo Co., Ltd. Tokyo, Japan, July 2011- July 2013.
5. "Tape Path Mechanics," S. Müftü, \$50,000, International Storage Industry Consortium, INSIC, March 2011-March 2012.
6. "Numerical Modeling of Bone Adaptation for Dental Implant Systems," S. Müftü (PI), \$63,500, Bicon Inc., Boston, MA, 2010-2011.
7. "Tape Path Modeling," S. Müftü (PI), \$45,000, International Storage Industry Consortium, 2010-2011.
8. "Friction and Durability of Thin Polymer Coatings," S. Müftü (PI), \$9,420, GVD, Corp, Cambridge, MA, 2009-2010.
9. "Modeling and Simulations of the Mechanics of the Cold Spray Process," S. Müftü (PI, 75%), A. Gouldstone, \$226,290, H.C. Starck Inc., Newton, MA, 2008-2011.
10. "Method for Measurement of Coefficient of Friction for PTFE Coatings," S. Müftü (PI) \$7,850, GVD, Cambridge, MA, 2007-2008.
11. "Numerical Modeling of Bone Adaptation for Dental Implant Systems," S. Müftü (PI), \$197,447, Bicon Inc., Boston, MA, 2007-2010.
12. "Process Development Investigations of Chemical Mechanical Polishing of Niobium," S. Müftü (PI, 50%), K. Zeimer, 2007, H.C. Starck Inc., \$26,686.

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13. "Research & Scholarship Development Funding: Organized CNT-Parylene Multifunctional Active Thin-Films for Flexible Electronics Applications," S. Müftü (PI, 33%), Y. J. Jung, M. Dokmeci, \$25,000, NEU-Provost's office, 2006-2007.
  14. "Undergraduate research grant: Frictional properties of bio-implantable Titanium," S. Müftü, (PI), B. Davies, \$760, NEU-Provost's office, 2005.
  15. "NSEC: The New England Nanomanufacturing Center for Enabling Tools," A. Busnaina (PI), G. Adams, J. Isaacs, N. Israeloff, W. Kay, Y.-B. Kim, F. Lombardi, N. McGruer, S. Müftü, S. Sridhar, M. Tahoori, \$12,375,996, (my share \$295,000\*\*), NSF, 2004 -2009.
  16. "Eastman Kodak fellowship for graduate studies," S. Müftü (PI), \$41,737, Eastman Kodak Co., Rochester, NY, 2004 -2005.
  17. "Numerical Investigation of Bone Remodeling Around Dental Implants by Finite Element Analysis," S. Müftü (PI), \$175,000, Bicon, Inc., 2004 -2007.
  18. "Eastman Kodak fellowship for graduate studies," S. Müftü (PI), \$37,777, Eastman Kodak Co., 2003 -2004.
  19. "A report on controlling friction and wear of surfaces," S. Müftü (PI, 50%), J. Blucher, \$9,800, Delphi, Corp., 2003.
  20. "Analysis of stress distribution in osseointegrated dental implants (extension)," S. Müftü (PI), \$16,300, Bicon, Inc., 2003.
  21. "Eastman Kodak fellowship for graduate studies," S. Müftü (PI), \$37,777, Eastman Kodak Co., 2002 -2003.
  22. "Experimental investigation of slip and strength characteristics of hybrid yarns," J. Rossetto (PI), S. Müftü (50%), \$8,978, ARO, 2002.
  23. "Establishing an IUCRC center site for microcontamination control at Northeastern University," A. Busnaina(PI), G.Adams, J. Hopwood, N. Israeloff, S. Müftü, \$250,000. (my share \$50,000 or 20%) NSF, 2002 -2007.
  24. "Mechanics of a flexible web wrapped helically around a turnbar," S. Müftü (PI), \$21,000, Eastman Kodak Co., 2001-2002.
  25. "Analysis of stress distribution in osseointegrated dental implants," S. Müftü (PI), \$81,347, Bicon Inc. 2001-2003.
  26. "Establishing an IUCRC center site for microcontamination control at Northeastern University: a Planning Meeting Proposal," A. Busnaina(PI), G.Adams,, J. Hopwood, N. McGruer, S. Müftü, \$10,000, (my share 20%) NSF, 2001.
  27. Start-up funding, Department of Mechanical, Industrial and Manufacturing Engineering, S. Müftü, \$50,000, Northeastern University, 2000.

#### **At MIT Haystack Observatory**

28. "Modelling of fluid-solid coupling in air reversers used in web conveyance," S. Müftü (PI), \$15,000, Eastman Kodak Co., 1999.

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\*\* Calculated based on 4.5 months of summer salary for co-PI, five years of support for 1 graduate student, fringe and overhead.

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29. "Mathematical models of a paper sheet in the nip of two frictional rollers," S. Müftü (PI), \$25,000, Eastman Kodak Co., 1999.
  30. "Modeling and characterization of the head/tape interface in DLT tape drives," S. Müftü (PI), \$43,000, Quantum Corp., 1998.
  31. "Modelling of fluid-solid coupling in air reversers used in web conveyance," S. Müftü (PI), \$53,000, Eastman Kodak Co., 1997.
  32. "Tribology of an improved head-tape interface: Experiments and modeling to ensure contact and low wear," A. Rogers (PI), S. Müftü (coPI), H. Hinteregger, \$300,000, NSF, 1997-2000.

#### **At University of Rochester**

33. "The computer simulation of an air reverser," R. Benson (PI), S. Müftü (coPI), \$40,000, Eastman Kodak Co., 1996.
34. "Air bar stabilization of a high speed paper web," R. Benson (PI), S. Müftü, (coPI), \$40,000, TAPPI Foundation., 1995.
35. "Lateral dynamics of imperfect web," R. Benson (PI), S. Müftü (coPI), \$40,000, Eastman Kodak Co., 1995.

#### **Equipment Purchase with NEU Funds**

36. "Microtribotester, CETR," G. Adams, S. Müftü, \$51,048, Mechanical and Industrial Engineering Department, 2002.
37. "Atomic Force Microscope," Qesant, G. Adams, A. Busnaina, N. McGruer, S. Müftü, College of Engineering.

#### **Equipment Donation**

38. "Dektak 3ST Surface Profiler," S. Müftü, \$39,000, MIT Haystack Observatory, 2002.
39. "Advanced Imaging Flat Lap Station," S. Müftü, Quantum Corp., 2003.

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## PROFESSIONAL ACTIVITIES

### Executive Committee of the Information Storage and Processing Systems (ISPS) of the ASME:

- 2001-2002 Secretary
- 2002-2003 Division vice-chair
- 2003-2004 **Division chair**
- 2004-2005 Immediate past chair

### Conference Organization:

- Member, International Program Committee : 11<sup>th</sup> International Conference on Web Handling, Stillwater, OK, June 12-15, 2011
- Member, International Board : 1<sup>st</sup> International Conference on Roll-to-Roll Printed Electronics, May 1-2, 2008
- Member, Program Committee : JSME/ASME Conference on Micromechatronics for Information and Precision Equipment (MIPE), Santa Clara, CA, June 2006
- Co-Chair, Program Committee : JSME/ASME Conference on MIPE, Yokohama, Japan, June 16-18, 2003
- Conference Chair : 13<sup>th</sup> Annual ASME ISPS Division Conference, Santa Clara, CA, June 17-18, 2002

### Symposia Organization:

Co-organizer with K-T Wan, technical session, "Mechanics and Adhesion of Thin Membranes," Engineering Mechanics Institute Conference, Boston, MA 2011  
Organized, and (co-)chaired five technical sessions at the ASME ISPS conferences 1999 - 2005.

### University Wide:

- 2010 – pres. Member, Northeastern University Faculty Senate
- 2011 – 2012 Member, Administrator Evaluation Oversight Committee

### College of Engineering Committees:

- 2004 - 2005 COE Outstanding Teaching Awards Committee
- 2004 - 2007 COE Undergraduate Awards Committee
- 2011 – pres. COE Faculty Council

### Departmental Committees:

- 2000 – 2004 Chair, Colloquium Committee
- 2000 – 2007 Coop Integration Committee
- 2004 – 2007 MIE Department Awards Committee
- 2001, 2003, 2008 Faculty Search Committees
- 2007 - 2008 Chair, Faculty Search Committee
- 2010 – 2011 Member, MIE Chair Search Committee
- 2011 – 2012 Chair, Faculty Search Committee, Applied Mechanics
- 2011 – 2012 Chair, Academic Specialist Applied Mechanics Search Committee

### Reviewer for the Following Refereed Journals

- Annals of Biomechanical Engineering, Journal of Biomechanics, International Journal of Oral and Maxillofacial Implants, European Journal of Oral Sciences, Journal of Bionic Engineering
- Acta Mechanica, Journal of Applied Mechanics, AIAA Journal, Journal of Vibration and Acoustics, Journal of Sound and Vibration, Journal of Manufacturing Science and



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Technology, Journal of Tribology, Tribology Transactions, Journal of Information Storage and Processing Systems (Journal of Microsystem Technologies), Nanotechnology, International Journal of Solids and Structures, Mechanics Research Communications, Journal of Dynamic Systems and Control, Phil Transactions of the Royal Society A

- Journal of Adhesion, Applied Physics Letters, Comptes Rendus CHIMIE, Journal of the Electrochemical Society

**Other Article/Book Reviewing Activities**

- Reviewer for *The Finite Element Method in Engineering*, by S.S. Rao, 2010.
- Reviewer for US National Congress on Theoretical and Appl. Mech., State College, PA, June 2010.
- Reviewer for MRS Spring 2009 Conference Proceedings, San Fransisco, CA, March 2009.
- Reviewer for Fluid Induced Vibration Symposium, ASME, IMECE, New Orleans, LA, November 2002.
- Reviewer for *CRC Handbook of Modern Tribology*, (1999).

**Panelist/Reviewer**

NEU, PhD Dissertation Scholarship, 2010  
NSF, "CAREER Nano" Panel Review, November 2, 2004  
"South Carolina EPSCoR/IDeA Program," July 2005  
NSF, "DMR-Condensed Matter Physics," non-panel reviewer, February 2007.  
NSF, "CMMI-Nanomanufacturing," April 2007  
US-Israel Binational Science Foundation, March 2007  
UW-Milwaukee Research Growth Initiative, 2009

**MEMBERSHIP IN PROFESSIONAL SOCIETIES**

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American Society of Engineering Education	American Society of Mechanical Engineers
Materials Research Society (MRS)	Society for Industrial and Applied Mathematics

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## GRADUATE ADVISING

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### PhD Degrees

1. **Mohamed Gaith**, PhD October 2005, "Transverse Vibration of Two Continua Interconnected by an Elastic Foundation: Stationary and Axially Translating Cases"
2. **Dinçer Bozkaya**, PhD April, 2009, "Mechanics of the Pad-Abrasive-Wafer Contact in Chemical Mechanical Polishing"
3. **Ernesto Lopez**, PhD October 2009, "Vibrations and Fluid-Structure Interactions in Web Handling Systems"
4. **Hsuan-Yu Chou**, PhD 2011 (exp.), Bone remodeling induced by dental implant systems.
5. **Baran Yildirim**, PhD 2012 (exp.), Mechanistic modeling of material deposition by cold spraying of particles.
6. **Qian Sheng**, PhD, 2012 (exp.), Durability and visco-plastic contact of thin polymer films.
7. **Jiayi Shi**, PhD, 2012, (exp.), Mathematical modeling of cell aggregation (co-advisor with Prof. KT Wan).
8. **Tugce Kasikci**, PhD, 2014 (exp.), Tape path modeling.

### M.S. Degrees

1. **Praveen Holani**, MS September 2002, "Finite element analysis of the head disk interface in a hard disk drive using an adaptive mesh"
2. **Dinçer Bozkaya**, MS September 2003, "Comparative evaluation of dental implants using the finite element method"
3. **John J. Jagodnik**, MS September 2003, "A Model for Analyzing Multi-Asperity Contact of Finite Thickness Structures with Real Surfaces on Both Sides"
4. **Nazif Mohd Azar**, MS May 2003, "A nano-scale multi-asperity contact and friction model" (co-advisor with Prof. G. Adams, MIE)
5. **Ö. Taylan Sari**, MS September 2003, "Nano-Scale Effects in the Adherence, Sliding and Rolling of a Cylinder on a Substrate" (co-advisor with Prof. G. Adams, MIE)
6. **James Masters**, MS September 2004, "A finite element analysis of a thin, tensioned web wrapped about a cylinder using Mindlin-Reissner shell theory"
7. **Peter Ryan**, MS September 2004, "AFM applications for nano-mechanical testing" (co-advisor with Prof. G. Adams, MIE)
8. **Giampaolo Zen**, MS September 2004, "Friction induced vibrations of an axially accelerating continuum"
9. **Ernesto Lopez**, MS January 2005, "Numerical investigations of discharge coefficient for slot jets in a confined channel with a self generated cross-flow"
10. **Onur Sergici**, MS May 2005, "Adhesion in the contact of a rigid spherical indenter with a layered elastic half-space" (co-advisor with Prof. G. Adams, MIE)
11. **Kodwo Dadzie**, MS December 2005, "The Effect of Load and Speed Dependence on the Coefficient of Friction in Surface-To-Surface Sliding" (co-advisor with Prof. G. Adams, MIE)

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12. **Nipun Biswas**, MS July 2007 “An experimental setup for measurement of real contact area of a CMP pad.”
  13. **Hsuan-Yu Chou**, MS August 2007, “Effect of Mechanotransduction on Bone Remodeling Around Dental Implants.”
  14. **George Calota**, MS October 2007, “Chemical Mechanical Planarization: A three dimensional mathematical model and development of a process for polishing Niobium”
  15. **Alexander Karnath**, MS July, 2008, “Frictional Characteristics Of Thin Polytetrafluoroethylene Films Deposited On Glass By Hot Filament Chemical Vapor Deposition Method”
  16. **Natalia Maximova**, MS, April 2008, “Application of X-ray spectroscopy for development of Niobium CMP, photomodification of Silicon for the field release mass spectrometer, and analysis of the multifunctional oxide heterostructures,” (co-advisor with Prof. K. Ziemer, Chem E.)
  17. **Samira Faegh**, MS July 2009, “Mechanism of Load Transfer along the Bone-Dental Implant Interface”
  18. **Benjamin Davies**, M.S., 2010, (Gordon Fellow) Passive Planar Isolation Platform: Redesign Analysis and Implementation
  19. **Shreyansh Patel**, M.S., 2011 (exp.) Fluid Jet Polishing
  20. **Hankang Yang**, M.S., 2011 (exp.) Non-linear dynamics of a translating beam

#### **Member – Doctoral Committee**

1. **Ashkan Vaziri**, May 2004, “The effects of defects on the vibrational characteristics of various structural components”
2. **Haidong Liu**, 2007 “Theoretical and Computational Analyses of Flow-Induced Endothelial Surface Reorganization”
3. **Kaveh Bakhtari**, March 2006, “Numerical and experimental analysis of nano-element assembly, adhesion and removal”
4. **Xugang Xiong** April 2006, “Electric Field Assisted Directed Assembly Of Nanoparticles And Carbon Nanotubes Using Templates “
5. **Shan Hu**, May 2006, “Effect of Medium on Particle Removal”
6. **Yinghui Liu**, 2007, “Planetary Robotic Drilling Systems”
7. **Juan Carlos Aceros Rueda**, July 2008, MEMS testbed for accelerated testing of nanostructures
8. **Scott C. Corbet**, November, 2009, A Blood Compatibility Model for Polymeric Heart Valve Prostheses
9. **Nicholas Yang**, April, 2009, “The effect of frontal plane tibiofemoral angle on the contact stress and strain on the knee joint”
10. **Nima Saedi**, August 2009, “On the control of collagen fibril organization and morphology”
11. **Ali Marzban**, August 2010, “Low-strain fatigue behavior of large area sprayed thermal sprayed coatings.”

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12. **Peter J. Ryan**, April. 2011, The Carbon Nanotube-Substrate Interface: A Scanning Probe Microscopy Study of Interaction
  13. **Maricris Silva** April 2011, Observation of alveolar deformation using indentation and its application for quantifying the effects of inhaled gases on lung mechanics
  14. **Guangxu Li**, expected, Theoretical Study of Thin Film Adhesion and Graphene Adhesion Measurements, proposal made on July 2011.

## UNDERGRADUATE ADVISING

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### Undergraduate Honors Thesis Supervised

**Paul Kendrick**, *June 2002*, "Exploration of tension profiles across a flying web"

### Undergraduate Student Awards

- |      |   |
|------|---|
| 2001 | Winner of the National Level <b>ASME Young Engineer's Student Paper Competition Award: "Abutment hammering tool for dental implants,"</b><br>J. O'Callaghan, Jr., T. Goddard, R. Birichi, J. Jagodnik, S. Westbrook, Proceeding of the 2001 ASME IMECE, Nov. 11-16, 2001, New York, NY, CDROM proceedings, IMECE2001/DE-25112. (Group advisor S. Müftü) |
| 2001 | Capstone Design Competition 1 <sup>st</sup> Place, MIME Department, Northeastern University:<br><b>"Abutment hammering tool for dental implants"</b><br>J. O'Callaghan, Jr., T. Goddard, R. Birichi, J. Jagodnik, S. Westbrook  |
| 2002 | Capstone Design Competition 2 <sup>nd</sup> Place, MIME Department, Northeastern University:<br><b>"Corner Adapting Motorcycle Headlight"</b><br>A. Fry, J. Hager, J. Kershaw, M. Olasin, M. Reeves,  |
| 2006 | Capstone Design Competition 1 <sup>st</sup> Place, MIE Department, Northeastern University:<br><b>"An Educational Clock Kit"</b><br>Eric Andersen, Meredith Monaco, Brian Petrarca, Erik Stefansson, Michael Swanwick   |
| 2009 | Capstone Design Competition 1 <sup>st</sup> Place, MIE Department, Northeastern University:<br><b>"Bionic Ankle-Phase-II"</b><br>Chris Stivers, Derek Shaw, Eric Meade, Steve LaChance, Tobias Leiner   |
| 2011 | Capstone Design Competition 1 <sup>st</sup> Place, MIE Department, Northeastern University:<br><b>"Actuated Biopsy Needle"</b><br>Andrew Hulton, Willard Ober, William Hunt, Greg Allen, Brittney Brailsford  |

### Undergraduate Student Research Projects

#### Undergraduate Students at NEU:

- |                       |                              |
|-----------------------|------------------------------|
| ○ Christine Laliberte | NEU, 2001                    |
| ○ Paul Kendrick       | NEU-Honors thesis, 2002-2003 |
| ○ Nick Holstein       | UPenn, 2003                  |
| ○ Heath Marvin        | NEU, 2004                    |
| ○ Benjamin Davies     | NEU, 2004-2005               |
| ○ Matteo Batista      | NEU, 2005-2006               |
| ○ Dan Esposito        | NEU, 2007                    |
| ○ K. Patrick Owen     | NEU, 2010                    |

- 
- Michel Beguin                      NEU, 2011
  - Neal Lancaster                      NEU, 2011
  - Sant Vangavolu                      NEU, 2011

**REU Students at MIT Haystack Observatory:**

- Evren Tümer                          CalTech
- Gary Hall                              University of Rochester
- Maria-Isabel Carnascialli        MIT
- Brad Okresik                         UIUC

**UROP Students at MIT:**

- Ken van Tilburgh                    MIT, 2008

**TEACHING**

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**Undergraduate level courses**

Quarter System

- Strength of Materials I (MIM1354, MIM1355)
- Design Studio I and II (MIM1501, MIM1502)

Semester System

- Mechanics of Materials (MIM U355)
- Design Studio I and II (MIMU701, MIMU702)

**Graduate level courses**

Quarter System

- Mechanics of Contact and Lubrication (MIM3915)

Semester System

- Finite Element Method (MTMG235, ME 5657)
- Plates and Shells (MTMG232)
- Mechanics of Contact and Lubrication (MTMG230, ME5656)

CourseNumber	Title	Quarter	# of Students
<b>2000-2001</b>			
MIM 1355	Strength of Materials I	2000F	8
MIM1501	Design Studio I	2001W	10
MIM1502	Design Studio II	2001Sp	10
<b>2001-2002</b>			
MIM 1355	Strength of Materials I	2001F	21
MIM 1501	Design Studio I	2001F	5
MIM 1501	Design Studio I	2002W	9
MIM 1502	Design Studio II	2002Sp	14
<b>2002-2003</b>			
MIM1354	Strength of Materials I	2002F	9
MIM1355	Strength of Materials I	2002F	10
MIM1501	Design Studio I	2003W	10
MIM3915	Mechanics of Contact and Lubrication	2003W	12
MIM1502	Design Studio I	2003Sp	10
			<b>Semester</b>

2003-2004			
MIM U355	Mechanics of Materials	2003F	53
MTMG235	Finite Element Analysis	2004Sp	20
2004-2005			
MIM U355	Mechanics of Materials	2004F	43
MIM U702	Design Studio-II	2004F	3
MTMG235	Finite Element Analysis	2005Sp	16
2005-2006			
MIM U701	Design Studio-I	2005Sum	10
MIM U702	Design Studio-II	2006S	10
MIM U355	Mechanics of Materials	2005F	66
MTM G230	Mechanics of Contact and Lubrication	2006S	13
2006-2007			
MIM U701	Design Studio-I	2006Sum	10
MIM U702	Design Studio-II	2007S	10
MIM U355	Mechanics of Materials	2006F	48
MIM U356	Mechanics of Materials Laboratory	2006F	46
MTMG235	Finite Element Analysis	2007S	25
2008-2009			
MIM U701	Design Studio-I	2008Sum	15
MTMG232	Mechanics of Plates and Shells	2008 F	10
MIM U702	Design Studio-II	2009S	15
MTMG235	Finite Element Analysis	2009S	35
2009-2010			
MIM U701	Design Studio-I	2009Sum	15
ME 5656	Mechanics of Contact and Lubrication	2009F	15
MIM U702	Design Studio-II	2009S	15
ME 5657	Finite Element Analysis	2009S	37
2010-2011			
MIM U701	Design Studio-I	2010Sum	15
ME 7232	Mechanics of Plates and Shells	2010F	11
MIM U702	Design Studio-II	2011S	15
ME 5657	Finite Element Analysis	2011S	27
2011-2012			
MIM U701	Design Studio-I	2011Sum	15
ME 5656	Mechanics of Contact and Lubrication	2011F	19

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## INVITED PRESENTATIONS

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### Upcoming presentations:

1. **S. Müftü**, "Effect of Substrate Hardness on Nano-scale Particle Contacts in Chemical Mechanical Planarization," Symposium on *Hardness across the Multi-scales of Structure and Loading Rate* symposium at the *Materials Science & Technology 2011 Conference* in Columbus Ohio, October 16-20, 2011. Organizers: R.W. Armstrong, DF. Bahr, N.N. Thadhani, S.M. Walley.

### Past presentations:

1. **S. Müftü** and **A. Rotenberg**, (Children's Hospital), "Concussion Warning System for Ski helmets" *Seventh Annual Sports Related Conference on Concussion & Spine Injury*, on May 27<sup>th</sup> 2011 at Harvard Medical School. (Dr. Rotenberg made the presentation)
2. **S. Müftü**, and B. Yildirim, "High Velocity Impact of Micron Scale Particles" invited presentation, *Particle Tribology Symposium*, International Joint Tribology Conference, October 20, 2010.
3. **S. Müftü**, "Modeling of Particle to Surface Interactions in Surface Engineering," University of Rhode Island, April 16, 2010.
4. **S. Müftü**, "Biomechanics of Dental Implants by Using the Finite Element Method," Tufts University, School of Dental Medicine, Postgraduate Prosthodontics Program, November 18, 2009.
5. **S. Müftü**, "A statistical approach to three-body contact of surfaces with entrapped particles", May 6, 2008, Department of Civil and Environmental Engineering, Massachusetts Institute of Technology
6. **S. Müftü**, "Mechanics of Thin, Flexible, Translating Media and in Air", May 2, 2008, 1<sup>st</sup> International Conference on Roll-to-Roll Printed Electronics, 2008, **invited speaker and member of international organizing committee**.
7. **S. Müftü**, "Mechanics of Thin, Flexible, Translating Media and Their Interactions with Surrounding Air", April 11, 2008, Department of Mechanical Engineering, University of Connecticut, Storrs, CT
8. **S. Müftü**, "Mechanics of Thin, Flexible, Translating Media and Their Interactions with Surrounding Air", November 4, 2005, Department of Mechanical & Industrial Engineering, Northeastern University
9. **S. Müftü**, "Mechanics of Thin, Flexible, Translating Media and Their Interactions with Surrounding Air", October 17, 2005, Department of Mechanical Engineering, Massachusetts Institute of Technology
10. **S. Müftü**, "Mechanics of Thin, Flexible, Translating Media and Their Interactions with Surrounding Air", October 14, 2005, Procter & Gamble, Cincinnati, OH.

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11. **S. Müftü**, "Finite Element Analysis of Various Implant Designs Including Bicon's  $6 \times 5.7$  mm Implant", Bicon World Symposium, Boston MA, September 8-10, 2005.
  12. **S. Müftü**, "Mechanics of Thin, Flexible, Translating Media and Their Interactions with Surrounding Air", March 22, 2005  
One of three invited speakers at the **International Workshop on Frontiers of R&D of Information Storage and Processing Systems in Pacific Rim Countries**, organized as part of *JSME-Information, Intelligence and Precision Equipment Section Conference*, 3/21-22, 2005, Tokyo Institute of Technology.
  13. **S. Müftü**, "Mechanics of Thin, Flexible, Translating Media and Their Interactions with Surrounding Air" University of Rhode Island, April 2004.
  14. **S. Müftü**, "A Nano-Scale Contact and Friction Model" and "Mechanics of Air Reversers," Eastman Kodak Company, Rochester, NY, January 2003.
  15. **S. Müftü**, "Mechanics of Thin Flexible, Translating Media and Their Interactions with Surrounding Air," Department of Mechanical and Aeronautics Engineering, Boston University, Boston, MA April 2002.
  16. **S. Müftü**, "Modelling of airflow in air reversers," Institute of Paper Science and Technology, Atlanta, GA, January 1997.
  17. **S. Müftü**, "Forced Vibrations in a Circumferentially Moving Cylindrical Shell," Department of Mechanical Eng., Boston University, Boston, MA, February 1996.
  18. **S. Müftü**, "Some Issues Related to the Mechanics of Web Transport," Department of Mechanical Eng., Northeastern University, Boston, MA, December 1995.
  19. **S. Müftü**, "Self lubricated air bars in web transport," Paper and Pulp Industry of Canada, Montreal, Canada, November 1993.
  20. **S. Müftü**, "On numerical methods to simulate dynamics of helical scan recording," 3M, St. Paul, MN, January 1993.

#### **OTHER CONFERENCE AND EDUCATION RELATED PRESENTATIONS**

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(Presenter is underlined)

1. S. Müftü, "Tape Path Mechanics: Model Development," Research Review, IBM, Tucson, AZ, May 10-12, 2010.
2. B. Yildirim, **S. Müftü**, A. Gouldstone "Effect of Impact Velocity and Angle on the Deformation Behavior of Micron Scale Particles," 14<sup>th</sup> *International Conference on Machine Design and Production*, June 29 – July 2, 2010, Guzelyurt, Northern Cyprus.
3. J. Shi, S. Müftü, K.-T. Wan, C. Majidi, "Adhesion of Compliant Cylinders," *Adhesion Society Meeting*, Daytona Beach, FL, February 21-24, 2010.
4. J. Shi, **S. Müftü**, K.-T. Wan, "Adhesion Mechanics of a Compliant Cylinder," *U.S. National Congress of Theoretical and Applied Mechanics*, State College, PA, June 27 – July 2, 2010.



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5. H.Y. Chou, **S. Müftü**, “Bone Remodeling Around Dental Implant Systems,” *U.S. National Congress of Theoretical and Applied Mechanics*, State College, PA, June 27 – July 2, 2010.
  6. E. Lopez, **S. Müftü**, “The Fluid Structure Interactions Between a Tensioned Web and an Externally Pressurized Hollow Drum,” *U.S. National Congress of Theoretical and Applied Mechanics*, State College, PA, June 27 – July 2, 2010.
  7. B. Yildirim, **S. Müftü**, A. Gouldstone “Observations on the Numerical Modeling of High Velocity Impact of Micron Scale Particles,” *U.S. National Congress of Theoretical and Applied Mechanics*, State College, PA, June 27 – July 2, 2010.
  8. G. Calota, N. Maximova, K. S. Ziemer, and **S. Müftü**, “Chemical-Mechanical Polishing of Niobium Wafers,” abstract for the *MRS Spring Meeting*, San Francisco, CA, April, 2009.
  9. D. Bozkaya, **S. Müftü**, “Optimization of Material Removal Efficiency in Low Pressure CMP,” *Proceedings MRS Spring Meeting*, San Francisco, CA, April, 2009.
  10. E.Lopez, **S. Müftü**, “On the vibration of helically wrapped webs,” *Mechanics of Slender Structures Symposium*, July 23, 2008, UMBC, Baltimore, MD.
  11. C.-L. Chen, E. Lopez, M. R. Dokmeci, Y.-J. Jung, and **S. Müftü**, “Manufacturing and performance evaluation of carbon nanotube-parylene sandwich thin films,” May 1, 2008, 1<sup>st</sup> International Conference on Roll-to-Roll Printed Electronics, 2008.
  12. D. Bozkaya, **S. Müftü**, “On the Effects of Surface Forces on the Contact of a Wafer and Abrasive Particles in CMP,” *Proceedings of the STLE/ASME International Joint Tribology Conference*, IJTC2008-71122, Miami, Florida, USA, October 20-22, 2008.
  13. D. Bozkaya, **S. Müftü**, “A Model For Optimizing Material Removal Rate In Low-Pressure Cmp: Effects Of Pad Porosity And Abrasive Concentration,” *Proceedings of the STLE/ASME International Joint Tribology Conference*, IJTC2008-71129, Miami, Florida, USA, October 20-22, 2008.
  14. A.M. Karnath, A.J. White, **S. Müftü**, “Frictional Characteristics Of Polytetrafluoroethylene (PTFE) Thin Films Deposited By Hot Filament – Chemical Vapor Deposition (HFCVD),” *Proceedings of the STLE/ASME International Joint Tribology Conference*, IJTC2008-71131, Miami, Florida, USA, Oct. 20-22, 2008.
  15. D. Bozkaya, **S. Müftü**, “Effects of the pad porosity on material removal rate for low-pressure CMP,” *Proceedings 2008 CMP-MIC*, Fremont, CA March 4-6, 2008.
  16. **S. Müftü**, “Biomechanics of Dental Implants,” presentation given as part of the continuing education course for general dentists at Bicon, LLC, Boston, MA, February 20, 2008.
  17. **S. Müftü**, “Mechanical Engineering,” Presentation given to O’Brian High School (Boston, MA) AP Physics Students as part of the STEM Program at NEU, February 13, 2008.
  18. E. Lopez, J. Masters, **S. Müftü**, “Free vibration analysis of thin, tensioned, helically wrapped webs using Mindlin-Reissner finite element method,” *Proceedings of the Ninth International Conference on Web Handling*, Oklahoma State University, Stillwater, OK, USA, June 11-13, 2007.

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19. M. Gaith and **S. Müftü**, “The vibration of two axially translating media interconnected by an elastic foundation,” *Proceedings of the Ninth International Conference on Web Handling*, Oklahoma State University, Stillwater, OK, USA, June 11-13, 2007.
  20. C.-L. Chen, E. Lopez, M. R. Dokmeci, Y.-J. Jung, and **S. Müftü**, “Manufacturing and performance evaluation of carbon nanotube-parylene sandwich thin films,” *Proceedings of the Ninth International Conference on Web Handling*, Oklahoma State University, Stillwater, OK, USA, June 11-13, 2007.
  21. D. Bozkaya, **S. Müftü**, “Contact Model for a Pad Asperity and a Wafer Surface in the Presence of Abrasive Particles for Chemical Mechanical Polishing”, *Proceedings MRS Spring Meeting*, San Fransisco, CA April 9-13, 2007.
  22. Y.-J. Jung, L. Jaber-Ansari, X. Xiong, **S. Müftü**, A. Busnaina, S. Kar, C. Soldano, and P.-M. Ajayan, “Highly Organized Carbon Nanotube-PDMS Hybrid System for Multifunctional Flexible Devices,” *Proceedings of 2007 ASME International Design Engineering Technical Conference & Computer and Information Engineering Conference*, September 4-7, 2007, Las-Vegas, NV.
  23. G. Calota, N. Maximova, K. Ziemer and **S. Müftü**, “Chemical mechanical polishing for obtaining very smooth surfaces: An overview of technology and the case of Niobium” RF Superconducting Materials Workshop, Fermi National Accelerator Laboratory, Batavia, IL, May 23-24, 2007.
  24. Lopez, E. and **Müftü, S.**, “Free Vibration analysis of thin, tensioned, helically wrapped webs using Mindlin-Reissner finite element method,” Conference digest ASME Information Storage and Processing Systems Conference, Santa Clara, CA, June 2007.
  25. M. Gaith and **S. Müftü**, “The vibration of two axially translating strings interconnected by winkler elastic foundation,” *Proceedings of 2006 ASME International Mechanical Engineering Congress and Exposition* November 5-10, 2006 Chicago, Illinois IMECE2006-14067.
  26. M. Gaith and **S. Müftü**, “Analytical and experimental natural frequencies of transverse vibration of sandwich beams interconnected by Winkler elastic foundation,” *Proceedings of 2006 ASME International Mechanical Engineering Congress and Exposition* November 5-10, 2006 Chicago, Illinois, IMECE2006-14069.
  27. M. Gaith and **S. Müftü**, “Free vibration analysis of two axially translating strings interconnected by a continuous elastic foundation,” *ASME/JSME Joint Conference on Micromechanics for Information and Precision Equipment (MIPE 2006)* Santa Clara, CA, June 21-23, 2006.
  28. P.J. Ryan, G.G. Adams, N.E. McGruer, **S. Müftü**, “An AFM-based scanning method for mechanical testing of nanoscale cantilevers,” *Materials Research Society Fall 2005 Meeting*, CD-ROM-NN9.7, 2005.
  29. P.J. Ryan, G.G. Adams, N.E. McGruer, **S. Müftü**, “Bending of bridge structures due to residual stresses at an interface,” *Materials Research Society Fall 2005 Meeting*, CD-ROM-Y3.5, 2005.

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30. A.O., Sergici, G.G. Adams, S. **Müftü**, "Adhesion in the Contact of a Spherical Indenter with a Layered Medium," Proceedings of WTC 2005, World Tribology Congress III, September 12-16, 2005, Washington, D.C., USA, CD-ROM **WTC2005-63382**.
  31. P. Holani and S. Müftü, "Head-Disk Interface Analysis Using Quadrilateral Adaptive Finite Elements", Conference digest ASME Information Storage and Processing Systems Conference, Santa Clara, CA, 2005.
  32. G. Zen and S. Müftü, "Stability of an Axially Accelerating String Subjected to Frictional Guiding-Forces", Conference digest ASME Information Storage and Processing Systems Conference, Santa Clara, CA, 2005.
  33. J. Jagodnik and S. Müftü, "A model for Analyzing Multiasperity Contact of Thin Sheets with Real Surfaces on Both Sides", Conference digest ASME Information Storage and Processing Systems Conference, Santa Clara, CA, 2005.
  34. E. Lopez and S. Müftü, "Investigation of Fluid Mechanics of Slotted Air-Jets for Air Reverser Applications," Proceeding of the Eight International Conference on Web Handling, Oklahoma State University, Stillwater, OK, USA, June 5-8, 2005.
  35. S. Müftü, "The Mechanics of a Thin Web Wrapped Helically Around a Turn Bar," Proceeding of the Eight International Conference on Web Handling, Oklahoma State University, Stillwater, OK, USA, June 5-8, 2005.
  36. M. Gaith and S. Müftü, "Transverse Vibration of Two Axially Moving Beams Connected By An Elastic Foundation," Proceedings of 2005 ASME International Mechanical Engineering Congress and Exposition November 11-15, 2005 Orlando, Florida.
  37. G. G. Adams and S. Müftü, "Asymmetric Asperity Height Distributions in a Scale-Dependent Model for Contact and Friction," *27<sup>th</sup> Annual Meeting of the Adhesion Society, February 15-18, 2004, Wilmington, NC.*
  38. G. Zen and S. Müftü, "Friction Induced Transverse Vibrations of an Accelerating String," *STLE/ASME Joint International Tribology Conference Ponte Vedra Beach, Florida USA, October 26-29, 2003.*
  39. J.J. Jagodnik and S. Müftü, "A Cylindrical Contact Model for Two Dimensional Multiasperity Profiles," *STLE/ASME Joint International Tribology Conference Ponte Vedra Beach, Florida USA, October 26-29, 2003.*
  40. G. G. Adams and S. Müftü, "Asymmetric Asperity Height Distributions in a Scale-Dependent Model for Contact and Friction," *STLE/ASME Joint International Tribology Conference Ponte Vedra Beach, Florida USA, October 26-29, 2003.*
  41. G. G. Adams, Ö.T. Sari, and S. Müftü, "Sliding and Rolling In Particle Adhesion On A Substrate" *Annual Meeting of the Adhesion Society, Myrtle Beach, SC, February 23-26, 2003.*
  42. G. G. Adams, S. Müftü and N. Mohd Azhar, "Scale Dependence Of The Coefficient Of Friction," *Annual Meeting of the Adhesion Society, Myrtle Beach, SC, February 23-26, 2003.*

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43. G. G. Adams, **S. Müftü** and N. Mohd Azhar, "A Multi-Asperity Friction Model Which Spans Length Scales From Nano-Contacts to Micro- and Macro-Contacts," ASME Information Storage and Processing Systems Conference, Santa Clara, CA, June 2002.
  44. G. G. Adams, **S. Müftü** and N. Mohd Azhar, "A nano-scale multi-asperity contact and friction model," ASME/STLE Joint International Tribology Conference Cancun, Mexico, October 27-30, 2002.
  45. **D. Bozkaya** and **S. Müftü** , "The Effect of Bone Modulus on the Stress Distribution in a Dental Implant: A 3D Finite Element Analysis," ASME, IMECE'02 2002, BED, International Mechanical Engineering Congress & Exposition New Orleans, Louisiana, November 17-22, 2002.
  46. **S. Müftü**, "The mechanics of helically wrapped thin shell supported by an externally pressurized air cushion," ASME, IMECE'02 2002, FSI, AE & FIV+N Symposium International Mechanical Engineering Congress & Exposition New Orleans, Louisiana, November 17-22, 2002.
  47. **S. Müftü**, "Fluid-Structure Interactions in Flexible Web Handling," Symposium in Honor of Marvin Goldstein, Department of Mechanical, Industrial and Manufacturing Engineering, Northeastern University, March 2002.
  48. **S. Müftü**, "Tape traction over rollers and posts," ASME Information Storage and Processing Systems Conference, Santa Clara, CA, June 2001.
  49. **S. Müftü**, "Measurements and Theoretical Predictions of Head/Tape Spacing over a Flat-head," National Storage Industry Consortium Meeting, Monterey, CA, June 2001.
  50. **S. Müftü**, "Measurements and Theoretical Predictions of Head/Tape Spacing over a Flat-head," International Tribology Conference, Nagasaki, Japan, November 2001.
  51. **S. Müftü**, D.J. Kaiser, "Measurements and Theoretical Predictions of Head/Tape Spacing over a Flat-head," Tribology of Information Storage Devices Conference, Santa Clara University, CA, December 1999.
  52. **S. Müftü**, " The Mechanics of a Flexible Web Floating over and Air Reverser ," The International Web Handling Conference, OSU, Stillwater, OK, June 1999.
  53. **S. Müftü**, "The Mechanics of a Flexible Web Floating over an Air Reverser ," ASME International Congress and Exposition, Nashville, TN, November, 1999.
  54. **S. Müftü**, "Contouring and Related Issues in Tape Recording Heads/The Interface of a Flat Head and a Flexible Tape," Center for Magnetic Recording Research, UCSD, La Jolla, CA, March 1999.
  55. **S. Müftü**, "Head Wear in Tape Recorders," ASME International Congress and Exposition, Dallas, TX, October 1998.
  56. **S. Müftü**, "The Mechanics of a Thin Flexible Web and Forced Air over a Cylindrical Drum" ASME International Congress and Exposition, Dallas, TX, October 1998.

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57. **S. Müftü**, "Modelling of airflow in air reversers," ASME International Congress and Exposition, Dallas, TX, November 1997.
  58. **S. Müftü**, "Modelling of airflow in air reversers," SIAM Annual Meeting, Stanford University, Palo Alto, CA, July 1997.
  59. **S. Müftü**, "Modelling of airflow in air reversers," Center for Magnetic Recording Research, UCSD, La Jolla, CA, March 1997.
  60. **S. Müftü**, "Flat Heads for High-Speed, Contact Tape recording: Experimental Evaluation and Theoretical Analysis," ASME International Congress and Exposition, Atlanta, GA, November 1996.
  61. **S. Müftü**, "Contact Tape Recording with a Flat Head Contour," Center for Magnetic Recording Research, UCSD, La Jolla, CA, March 1996.
  62. **S. Müftü**, "The Transient Effects in Two-Dimensional Foil Bearing Problem in Magnetic Recording," International Tribology Conference, Yokohama, Japan, October 1995.
  63. **S. Müftü**, "Modelling the Transport of Paper Webs Including the Paper Permeability Effects," ASME International Congress and Exposition, San Francisco CA, March 1995.
  64. **S. Müftü**, "A Model for the Mixed Lubrication in the Start-up of the Magnetic Tapes," ASME, Winter Annual Meeting, Chicago, IL, November 1994.
  65. **S. Müftü**, "A transient solution for the finite width foil bearing problem," ASME, Winter Annual Meeting, New Orleans, LA, December 1993.
  66. **S. Müftü**, "Transient effects in magnetic tape transport," Eastman Kodak Co., Rochester, NY, August 1993.
  67. **S. Müftü** and **R.C. Benson** "Fully coupled transient solution of the foil bearing problem" Matsushita Electronics Corp, and Hitachi, Japan, August 1993.
  68. **S. Müftü** and R.C. Benson, "Numerical simulation of tape dynamics in helical scan recording," IEEE Intermagnetics Conference, Stockholm, Sweden, April 1993.
  69. **S. Müftü**, "Numerical simulation of transient waves in tapes," Center for Magnetic Recording Research, UCSD, La Jolla, CA, March 1993.
  70. **S. Müftü**, "Numerical simulation of transient waves in tapes," ASME Winter Annual Meeting, Los Angeles, CA, November 1992.

#### **POSTER PRESENTATIONS IN CONFERENCES**

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(Presenter is underlined)

1. **H.Y. Chou**, **S. Müftü**, "Bone Remodeling Due to Dental Implant Systems by Finite Element Analysis," *American Association of Dental Research Meeting*, Washington, DC, March 3-6, 2010.

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2. J. Shi, **S. Müftü**, K.-T. Wan, “Adhesion Mechanics of a Cylinder and a Rigid Substrate,” *MRS Fall Meeting*, Boston, MA, **November**, 2009.
  3. H.Y. Chou, **S. Müftü**, “Observations on Bone-Implant Contact Based on Analysis of Internal Bone Remodeling” abstract for the *Academy of Osseointegration 23<sup>rd</sup> Annual Meeting*, San Diego, CA, February 26-29, 2009.
  4. S. Faegh, **S. Müftü**, “Fundamental Mechanisms of Load Transfer along the Bone Implant Interface,” abstract for the *Academy of Osseointegration 23<sup>rd</sup> Annual Meeting*, San Diego, CA, February 26-29, 2009.
  5. S. Faegh, **S. Müftü**, “Load transfer along the bone dental implant interface,” *Proceedings of the ASME 2009 Summer Bioengineering Conference (SBC2009) June 17-21*, Lake Tahoe, CA, 2009.
  6. C.-L. Chen, E. Lopez, P. Makaram, A. Busnaina, Y.-J. Jung, **S. Müftü**, and M. R. Dokmeci, “Fabrication and evaluation of Carbon Nanotube-Parylene functional composite films,” *Proceedings of the 14th International Conference on Solid-State Sensors, Actuators and Microsystems (Transducers '07)*, Lyon, France, June 10-14 2007.
  7. C.-L. Chen, E. Lopez, P. Makaram, A. Busnaina, Y.-J. Jung, **S. Müftü**, and M. R. Dokmeci, “Fabrication and evaluation of Carbon Nanotube-Parylene functional composite films,” *NEU Research Expo*, Northeastern University, Boston MA, March 2007.
  8. **S. Müftü**, H.Y. Chou, D. Bozkaya, “Biomechanical evaluation of A wide–diameter short dental implant for use in compromised bone quality regions”, abstract for the *Academy of Osseointegration 21<sup>st</sup> Annual Meeting*, March 8-10, 2007, San Antonio, TX.
  9. **S. Müftü**, H.Y. Chou,, J. Jagodnik, “Effect of mechanotransduction in bone remodeling around dental implants”, abstract for the *Academy of Osseointegration 21<sup>st</sup> Annual Meeting*, March 8-10, 2007, San Antonio, TX.
  10. G. Calota, **S. Müftü**, “Role of Chemical Mechanical Polishing in Microfabrication of Embedded Nanowires: Modeling and Experiments,” NSF-NSEC-Site Visit, UNH, June 2007.
  11. H.Y. Chou, **S. Müftü**, D. Bozkaya, “Biomechanical evaluation of a wide–diameter short dental implant for use in compromised bone quality regions by finite element method”, *Proceedings of NanoBio2006, Frontiers in Biomedical Devices Conference* June 8-9, 2006, Irvine, California, USA, NanoBio2006, 18022.
  12. E. Lopez, C.-L. Chen, Y. J. Jung, M. Dokmeci and **S. Müftü**, “Manufacturing and Performance Evaluation of Organized Carbon Nanotube-Parylene Multi-Functional Active Thin-Films” *MRS Fall Meeting*, 2006.
  13. J.J. Jagodnik, **S. Müftü**, “A model for analyzing multi-asperity contact of thin sheets with real surfaces on both sides,” *Proceedings of WTC 2005, World Tribology Congress III*, September 12-16, 2005, Washington, D.C., USA, CD-ROM **WTC2005-63862**.
  14. G. Zen, **S. Müftü**, “Stability of an Accelerating String Subjected to Frictional Guiding Forces,” *Proceedings of WTC2005, World Tribology Congress III*, September 12-16, 2005, Washington, D.C., USA, CD-ROM **WTC2005-63863**.

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15. S. Müftü, and Bozkaya, D., "Biomechanical Evaluation of a Wide Diameter Bicon Dental Implant in Various Bone Conditions," Academy of Osseointegration 19<sup>th</sup> Annual Meeting, March 18-20, 2004, San Francisco, CA.
  16. S. Müftü, and Bozkaya, D., "Design Considerations for Taper Integrated Screwed-In Implant-Abutment Connections," Academy of Osseointegration 19<sup>th</sup> Annual Meeting, March 18-20, 2004, San Francisco, CA
  17. Bozkaya, D., Müftü, S., "Tapered Connection Mechanisms in Dental Implants," abstract submitted to the Academy of Osseointegration 18<sup>th</sup> Annual Meeting, February 27-March 1, 2003, Boston MA.
  18. Bozkaya, D., Müftü, S. and Müftü, A., " Stress Distribution Characteristics of Various Implant Systems due to Non-central Occlusal Loads," abstract submitted to the Academy of Osseointegration 18<sup>th</sup> Annual Meeting, February 27-March 1, 2003, Boston MA.
  19. G. G. Adams, S. Müftü and N. Mohd Azhar, "A nano-scale multi-asperity contact and friction model," ASME, International Mechanical Engineering Congress & Exposition New Orleans, Louisiana, November 17-22, 2002.
  20. H.F. Hinteregger and S. Müftü " Tests of Flat, Thin-Film, Magnetoresistive Head Arrays for VLBI Tape Recorders," The Magnetic Recording Conference, IEEE (TMRC) 1998, Boulder, CO., August 1998.
  21. H.F. Hinteregger and S. Müftü, "Contact Tape Recording with a Flat Head Contour," IEEE International Magnetics Conf., Seattle WA, March 1996.

#### **POSTER PRESENTATIONS AT NORTHEASTERN UNIVERSITY**

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(Presenter is underlined)

22. H.Y. Chou, S. Müftü, "Observations on Bone-Implant Contact Based on Analysis of Internal Bone Remodeling" Northeastern University Research Expo, San, March 2009.
23. S. Faegh, S. Müftü, "Mechanisms of Load Transfer along Bone Dental Implant Interface," Northeastern University Research Expo, San, March 2009.
24. J. Shi, S. Müftü, K.-T. Wan, "Modeling Mechanical Contact between a Membranous Vesicle and Rigid Substrate," Northeastern University Research Expo, San, March 2009.
25. A. Karnath, S. Müftü, "Friction Measurements as Process Monitor Metric of Polytetrafluoroethylene (PTFE) Thin Films Deposited by cold-CVD," Northeastern University Research Expo, San, March 2008.
26. H.Y. Chou, S. Müftü, "Prediction of Bone Remodeling Around Dental Implant Systems" Northeastern University Research Expo, San, March 2008.
27. E. Lopez, S. Müftü, "Free Vibration Analysis of a Thin, Tensioned, Helically Wrapped Webs" Northeastern University Research Expo, San, March 2008.

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28. H.Y. Chou, **S. Müftü**, “Biomechanical Evaluation of Wide-Diameter Short Dental Implants for Use in Compromised Bone Quality Regions by Finite Element Method” Northeastern University Research Expo, San, March 2006.