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### 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.

### APPOINTMENTS

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

July 2012 – present      **Northeastern University, Professor**  
Department of Civil and Environmental Engineering  
Affiliated Appointment

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

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## AWARDS AND HONORS

Best Paper in Session, ASME, Information Storage & Processing Systems Division, 2014  
Soren Buus Outstanding Research Award, College of Engineering, NEU, 2013  
Best Paper in Session, ASME, Information Storage & Processing Systems Division, 2013  
Fellow, American Society of Mechanical Engineers, 2007  
Pi Tau Sigma, Outstanding Faculty Member, ME Department, NEU, 2007  
Nominated, Society of Automotive Engineers, Ralph Teetor Educator Award, 2004  
Martin W. Essigman Outstanding Teaching Award, College of Engineering, NEU, 2003  
Best Paper Award, ASME, Information Storage & Processing Systems Division, 1997  
Teaching and research assistantships, University of Rochester, 1989-1994  
Graduated in the Dean's Honor List, Middle East Technical University 1987  
Third place, Mathematics Competition, Scientific and Technical Research Council, Turkey, 1979

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## EDITORIAL BOARDS

Associate Editor, *Journal of Tribology, Transaction of the ASME*, 2014 – present.  
Review Board, *International Journal of Oral and Maxillofacial Implants*, 2011 – present.  
Associate Editor, *Journal of Advanced Mechanical Design, Systems and Manufacturing, JSME International*, 2006 – 2012.  
Editorial Board, *Biomedical Engineering*, ISRN, 2013 – present.  
Editorial Board, *Advances in Biomechanics and Applications*, 2013 – present.

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## PATENTS

**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.

### Invention disclosures

J. Evans, W. Haugh, M. Minerbi, A. Price, **S. Müftü**, “Personal Peanut Sheller,” US Patent application October 2015.

Q. Chen, M. Akcakaya, F.C. Meral, K. Tuncali, **S. Müftü**, “Model-Based Optimal Planning of Heating and Cooling Based Tumor Treatments,” Invention disclosure October 2016.

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## THESES

**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

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**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: Işer Turkyilmaz, Intech Publishing, pp. 163-190, 2011.

S. Irandoust, J. Lehrberg, V. Morgan and **S. Müftü** "Engineering Aspects of Bicon Implants," *The Bicon Short Implant*, ed. V. Morgan, 2017.

## IN REVIEW

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1. Z. Yang, **S. Müftü**, M. Upmanyu, "Interface-mediated thermo-mechanical effects during high velocity impact between monocrystalline surfaces," submitted for review *Philosophical Magazine*, September 2015.
2. Q. Chen, A. Alizadeh-Dehkarghani, W. Xie, X. Wang, V. Champagne, A. Gouldstone, J.-H. Lee, **S. Müftü**, "High Strain Rate Material Behavior and Adiabatic Material Instability in Impact of Micron-Scale Al-6061 Particles," *Journal of Thermal Spray Technology*, submitted for review March 17, 2017.

## PUBLICATIONS IN REFEREED JOURNALS

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1. B. Yildirim, H. Yang, A. Gouldstone, **S. Müftü**, "Rebound Mechanics of Micrometre-Scale, Spherical Particles in High Velocity Impacts," *Proceedings of the Royal Society of London*, A 473: 20160936, 2017.
2. W. Xie, A. Alizadeh-Dehkarghani, Q. Chen, V.K. Champagne, X. Wang, A. Nardi, S. Kooi, **S. Müftü**, J.-H. Lee, "Dynamics and extreme plasticity of metallic microparticles in supersonic collisions," *Scientific Reports*, doi:10.1038/s41598-017-05104-7, 2017.
3. T. Zhu, G. Li, **S. Müftü**, K.-T. Wan, "Revisiting the constrained blister test to measure thin film adhesion," *Journal of Applied Mechanics*, Vol. 84, No. 7, doi:10.1115/1.4036819, 2017.
4. T. Kaşıkçı, M.-C. Weng, A. Nayak, T. Goker, **S. Müftü**, "Contact Mechanics of a Thin, tensioned, translating tape with a grooved roller," *Journal of Tribology*, accepted April, 2017.
5. J. Aguirrebeitia, **S. Müftü**, M. Abasolo, J. Vallejo, "Removal force ratio in conical implant-abutment interfaces. Influence of preload, taper mismatch, wait time and presence of saliva." *Journal of Prosthetic Dentistry*, in print 2017.

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6. H. Yang, J. B. C. Engelen, W.A. Haberle, M. Lantz, **S. Müftü**, “Lateral Friction Behavior of a Thin, Tensioned Tape Wrapped over a Grooved-Roller: Experiments and Theory,” Submitted to *Journal of Tribology*, 139 (2), 021605, 2017.
  7. Q. Sheng, A. J. White, **S. Müftü**, “Indentation of Polytetrafluoroethylene (PTFE) Thin-Film: Simulations by Using Continuum Damage Mechanics,” *Tribology Transactions*, Vol 60, No.1 pp. 114-120, 2017.
  8. Q. Chen, F.C. Meral, **S. Müftü**, M. Akcakaya, K. Tuncali “Model-based Optimal Planning of Hepatic Radiofrequency Ablation.” *Mathematical Medicine and Biology*, in press 2016, doi: 10.1093/imammb/dqw011
  9. Q. Sheng, A. J. White, **S. Müftü**, “Interfacial Delamination of Thin-Film PTFE (Polytetrafluoroethylene) Coatings,” *The Journal of Adhesion*, DOI: 10.1080/00218464.2016.1170603, 2016.
  10. T. Kaşıkçı, and **S. Müftü**, “Wrap Pressure between a Flexible Web and a Circumferentially Grooved Cylindrical Guide, *Journal of Tribology, Trans ASME*, Vol. 138, p. 031101-1, 2016.
  11. Q. Sheng, A. J. White, **S. Müftü**, “An experimental study of friction and durability of a thin PTFE-film on rough aluminum substrates,” *Tribology Transactions*, Vol. 59, No. 4, pp 632-640, 2016.
  12. H. Yang, J. B. C. Engelen, A. Pantazi, W. Häberle, M. A. Lantz, **S. Müftü**, “Mechanics of Lateral Positioning of a Translating Tape due to Tilted Rollers: Theory and Experiments,” *International Journal of Solids and Structures*, Vol. 66, pp. 88-97, 2015.
  13. H.Y. Chou, D. Satpute, A. Müftü, S. Mukundan, **S. Müftü**, “Influence of Mastication and Edentulism on Mandibular Bone Density,” *Computer Methods in Biomechanics and Biomedical Engineering*, Vol. 18, No.3, pp. 269-281, 2015.
  14. Yildirim, H. Fukanuma, T. Ando, A. Gouldstone and **S. Müftü**, “A numerical investigation into cold spray bonding processes,” *Journal of Tribology, Trans. ASME*, Vol. 137, No. 1, pp. 935-942, 2015.
  15. L. Sallaway, Magee, S., Shi, J., Lehmann, O., Quivira, F., Tgavalekos, K., Brooks, D.H., **S. Müftü**, Meleis, W., Moore, R.H., Kopans, D., Wan, K.T., "Detecting Solid Masses in Phantom Breast Using Mechanical Indentation," *Experimental Mechanics*, Vol. 54, No. 6, pp. 935-942, 2014.
  16. T. Hu, S. Zhalehpour, A. Gouldstone, **S. Müftü**, T. Ando, “A Method for the Estimation of Interface Temperature in Ultrasonic Joining,” *Metallurgical and Materials Transactions A*, Vol. 45A, No.3, pp. 2545-2552, 2014.
  17. K., Michalakis, P. Calvani, **S. Müftü**, A. Pissiotis, and H. Hirayama, H., “The effect of different implant-abutment connection on screw joint stability”, *Journal of Oral Implantology*, Vol 40, No.2 pp. 146-152, 2014

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18. J. Aguirrebeitia, **S. Müftü**, M. Abasolo, J. Vallejo, “Experimental study of the removal force in conical implant-abutment interfaces,” *Journal of Prosthetic Dentistry*, Vol. 111, No. 4, pp. 293-300, 2014.
  19. H.Y. Chou, **S. Müftü**, “Simulation of Peri-Implant Bone Healing Due to Immediate Loading in Dental Implant Treatments,” *Journal of Biomechanics*, Vol. 46, No. 5, pp. 871-878, 2013.
  20. J. Shi, **S. Müftü**, A.Z. Gu, K.T. Wan, “Adhesion of a Cylindrical Shell in the Presence of DLVO Surface Potential,” *Journal of Applied Mechanics*, Vol. 80, 061007, November 2013.
  21. 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”, *International Journal of Oral and Maxillofacial Implants*, 27(4):e39-48, 2012.
  22. J. Shi, **S. Müftü**, K.T. Wan, “Adhesion of a compliant cylindrical shell onto a rigid substrate,” *Journal of Applied Mechanics*, Vol. 79, 041015, 2012.
  23. B. Yildirim, **S. Müftü**, “Impact of High Velocity Particles onto a Rough Surface,” *International Journal of Solids and Structures*, Vol. 49, pp. 1375-1386, 2012.
  24. 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*, 52 [5] 539-549, DOI 10.1007/s11340-011-9514-z, 2012.
  25. 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.
  26. B. Yildirim, **S. Müftü**, A. Gouldstone, “Modeling of High Velocity Impact of Spherical Particles,” *Wear*, Vol. 270(9-10), pp. 703-713, 2011.
  27. 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.
  28. E. Lopez, **S. Müftü**, “Vibration of thin, tensioned, helically wrapped plates,” *Journal of Sound and Vibration*, Vol. 330(4), pp. 685-702, 2011.
  29. 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.
  30. H.-Y. Chou, D. Bozkaya, **S. Müftü**, “Combined effects of implant insertion depth and alveolar bone quality on periimplant bone strain induced by a wide-diameter, short implant and a narrow-diameter, long implant” *Journal of Prosthetic Dentistry*, Vol. 104(5), pp. 293-300, 2010.
  31. S. Faegh, **S. Müftü**, “Load transfer along the bone-dental implant interface,” *Journal of Biomechanics*, Vol. 43, pp. 1761-1770, 2010.

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32. 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.
  33. 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.
  34. 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.
  35. 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.
  36. 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*).
  37. 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)
  38. 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.
  39. 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).
  40. **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.
  41. 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.
  42. 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.
  43. 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.
  44. **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.

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45. 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 Éléments Finis*, Vol. 14, No. 2-3, pp. 155-180, 2005.
  46. 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.
  47. 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.
  48. 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.
  49. 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.
  50. 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.
  51. **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.
  52. 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.
  53. 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.
  54. **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.
  55. 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.
  56. **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.
  57. 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.
  58. **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.
  59. **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

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Investigation" *Journal of Information Storage and Processing Systems*, Vol. 1, pp. 287-298, 1999.

60. **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.
61. **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.
62. **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.
63. H.F. Hinteregger and **S. Müftü**, "Contact Tape Recording with a Flat Head Contour," *IEEE Transactions on Magnetics*, pp. 3476-3478, September 1996.
64. **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.
65. **S. Müftü** and R.C. Benson, (**invited**) "Video Tape Behavior on Rotary Heads: Modeling and Results," *JAST Tribologists Journal*, December 1995 (in Japanese).
66. **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.
67. **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.
68. U. Gamer and **S. Müftü**, "On the Elastic-Plastic Shrink Fit with Supercritical Interference", *Zeitschrift fuer Angewandte Mathematik und Mechanik, ZAMM, Applied Mathematics and Mechanics*, Vol. 70, No. 11, 501-507, 1990.

## **PUBLICATIONS IN CONFERENCE PROCEEDINGS**

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1. K. Zhang, T. Zhu, Y. Huang, L.R. Arriaga, D. Weitz, K.T. Wan, **S. Müftü**, "Measurements of Membrane Stiffness of Giant Unilamellar Vesicles (GUV)s by Atomic Force Microscopy in Presence of Surface Adhesion," Proceedings of the 40th Annual Meeting, The Adhesion Society February 26-March 1, 2017, St. Petersburg, FL
2. **S. Müftü**, T. Kasikci, H. Yang, "Effects of Grooved Roller Design on Lateral Tape Motion in Data Tape Drives," Proceedings of the Asia-Pacific Magnetic Recording Conference 2016, 13 – 15 July, 2016, Yonsei University.
3. T. Kasikci, H. Yang, E.K. Kim, C. Janssen, **S. Müftü**, "Mechanics of Tape Contact with Circumferentially Grooved Cylindrical Rollers: Experiments and Modelling," Proceedings of the 26<sup>th</sup> Annual Conference on Information Storage and Processing Systems ISPS2016 June 20-21, 2016, Santa Clara, California, USA, ISPS2016-9581.



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4. Q. Chen, **S. Müftü**, F.C. Meral, K. Tuncali, M. Akcakaya, "Pre-treatment Planning for Hepatic Radiofrequency Ablation," IEEE Signal Processing in Medicine and Biology Symposium, December 12, 2015, Temple University, Philadelphia, Pennsylvania.
  5. S. Irandoust, **S. Müftü**, "Computer Simulation of Dental implant Treatments: Long-Term Behavior" Northeast Bioengineering Conference, Troy, NY, April 17-19, 2015
  6. T. Kasikci and **S. Müftü**, "Thin Tape Traction Over a Grooved Roller," *Proceedings of the 13<sup>th</sup> International Conference on Web Handling, IWEB-2015*, Oklahoma State University, Stillwater, OK, June 8-10, 2015.
  7. **S. Müftü**, S. Zhalehpour, A. Gouldstone, and T. Ando, "Assessment of Interface Energy in High Velocity Particle Impacts" *Proceedings of the 38<sup>th</sup> Annual Meeting, The Adhesion Society February 20-25, 2015, Savannah, GA*
  8. H. Yang and **S. Müftü**, "Coupling between the in-plane and lateral tape dynamics in high capacity linear tape transport systems," invited session on "Servo Control Technologies for Data Storage" in The 19<sup>th</sup> World Congress of the International Federation of Automatic Control, Cape Town, South Africa, 24-29 August 2014.
  9. B. Yildirim, A. Hulton, S.A. Alavian, T. Ando, A. Gouldstone, **S. Müftü** " Soğuk sprey (cold spray) işleminde çoklu parçacık çarpışması ve kaplama özelliklerinin sayısal ve deneysel yöntemlerle incelenmesi," in proceedings of SAVTEK 2014, SAVTEK, June 25-27, 2014, Middle East Technical University, Ankara, Turkey (in Turkish).
  10. H. Yang and **S. Müftü**, "On coupled dynamics of frictional guides in tape transport systems," *Proceedings of the 24<sup>th</sup> Annual Conference on Information Storage and Processing Systems ISPS2014 June 16-17, 2014, Santa Clara, California, USA.*
  11. T. Kasikci, **S. Müftü**, "Tape mechanics over a grooved roller: Experiments and theory," *Proceedings of the 24<sup>th</sup> Annual Conference on Information Storage and Processing Systems ISPS2014 June 16-17, 2014, Santa Clara, California, USA.*
  12. K. Bausemer, **S. Müftü** and K.-T. Wan, "Model for Attachment-Detachment Mechanics of *E. coli* Bacteria in the Presence of Surface Forces," *Proceedings of the 37<sup>th</sup> Annual Meeting of the Adhesion Society, Daytona Beach, FL, February 24-27, 2014.*
  13. K. Bausemer, **S. Müftü** and K.-T. Wan, "Attachment-Detachment Trajectory for *E. coli* Bacteria in the Presence of Surface Forces," *Northeast Bioengineering Conference, Boston, MA, April 25-27, 2014*
  14. S. Irandoust, **S. Müftü**, "Effects of Numerical Parameters Used in Bone Fracture Healing Simulations," *Northeast Bioengineering Conference, Boston, MA, April 25-27, 2014*
  15. Y. Liu, Q. Sheng, **S. Müftü**, A. Khademhosseini, M. L. Wang, and M. R. Dokmeci, "A stretchable and Transparent SWNT Strain Sensor Encapsulated in Thin PDMS Films," *Proceedings of the IEEE Transducers 2013, Barcelona, SPAIN, 16-20 June 2013, pp. 1091-1094.*

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16. Q. Sheng, A.J. White, **S. Müftü**, “Experimental and Numerical Investigations on Interfacial Delamination of Thin Film PTFE Coatings,” Proceeding of the 36th Annual Meeting of the Adhesion Society, Daytona Beach, FL, March 3-5, 2013.
  17. J. Shi, **S. Müftü** and Kai-Tak Wan, “Adhesion -Detachment Mechanics of Thin Shells,” Proceeding of the 36th Annual Meeting of the Adhesion Society, Daytona Beach, FL, March 3-5, 2013.
  18. T. Kasikci, **S. Müftü**, “Modeling the traction of a thin tape guided by a grooved roller,” Proceedings of the 23<sup>rd</sup> Annual Conference on Information Storage and Processing Systems ISPS2013 June 24-25, 2013, Santa Clara, California, USA.
  19. H. Yang and **S. Müftü**, “Friction induced lateral vibrations of a tape moving in contact with a slewing head,” Proceedings of the 23<sup>rd</sup> Annual Conference on Information Storage and Processing Systems ISPS2013 June 24-25, 2013, Santa Clara, California, USA.
  20. H. Yang and **S. Müftü**, “A general model of lateral web dynamics between two reels,” International Web Handling Conference (IWEB-2013), Oklahoma State University, Still Water, OK, June 5-7, 2013.
  21. B. Yildirim, A. Hulton, S.A. Alevian, T. Ando, A. Gouldstone, **S. Müftü**, “On simulation of multi-particle impact interactions in the cold-spray process,” Proceedings of the ASME/STLE 2012 International Joint Tribology Conference, IJTC2012-61202, October 8-10, 2012, Denver, Colorado.
  22. H. Yang and **S. Müftü**, “Lateral Tape Dynamics over Non-linear Guides,” 2012 ASME-ISPS /JSME-IIP Joint International Conference on Micromechatronics for Information and Precision Equipment, MIPE2012, June 18-20, 2012, Santa Clara, California.
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  33. 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.
  34. 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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  51. **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.

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  53. 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.*
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  55. 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.*
  56. 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.*
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2. **Müftü, S.**, Upmanyu, M., Kaeli, D., Gouldstone, A., *Forming an interdisciplinary team to investigate the science of cold spray*, Tier-1 Research Grant Final Report, Northeastern University, Provost Office, June 30, 2012, (3 pages).
3. Chou, H.-Y., **Müftü, S.**, *Numerical Modeling of Bone Adaptation for Dental Implant Systems*, Final Report to Bicon Inc., August 31, 2011 (126 pages).
4. 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.
5. **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.
6. 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.
7. 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.
8. **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.
9. **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.
10. **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.
11. **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.

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## 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.
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 **Müftü, 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.



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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.
  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**.
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  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.

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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.
  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.

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## FUNDING HISTORY

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1994-2000: \$136,000 (as PI) and \$420,000 (as co-PI)  
2000-pres.: \$1,766,790 (as PI) and \$2,082,634 (as co-PI)  
Total: \$1,902,790 (as PI) and \$2,502,634 (as co-PI) and \$4,405,424 (total)

### At Northeastern University

1. “Mechanics of fusion of dissimilar lipid bilayers and multi-lamellar vesicles,” KT Wan (PI), S. Müftü (50%), NSF, CBET-1705757, \$350,000, September 2017 – September 2020.
2. “Modelling in Cold Spray,” David Luzzi (PI), S. Müftü, A. Gouldstone and M. Upmanyu (technical point of contacts), T. Ando, S. Chakravarthy, H. Huang, C. Maloney, (co-PIs), my share \$198,810, September 2016 – September 2017.
3. “Tape Path Mechanics,” S. Müftü, \$70,636, Oracle Corporation, January 2016-January 2017.
4. “Modelling in Cold Spray,” David Luzzi (PI), S. Müftü, A. Gouldstone and M. Upmanyu (technical point of contacts), T. Ando, S. Chakravarthy, H. Huang, C. Maloney, K.T. Wan (co-PIs), my share \$124,244, September 2015 – September 2016.
5. “Improving Theoretical Models of Advanced Tape Transport Systems,” S. Müftü, \$46,000, Oracle Corporation, November 2014-November 2015.
6. “A Novel Biomechanical Model of Bacterial Adhesion and Aggregation,” \$400,183, KT Wan (PI), S. Müftü (33%), A. Gu, NSF, CMMI-1333889, December 2013 – December 2016.
7. “Tape Path Mechanics,” S. Müftü, \$50,000, International Storage Industry Consortium, INSIC, March 2013-March 2014.
8. “Nanomaterials for Force Protection and Increased Performance of Soldiers and Vehicles,” PI: D. Luzzi, Co-PIs, A. Busnaina, YJ Jung, A. Gouldstone, S. Müftü, M. Upmanyu, ARO, \$200,000, (my share \$18,672), Army Research Office.
9. “Collaborative Research: Mechano-Lipidomics and Mechano-Cytosis of Drug Delivery Liposomes,” K.T. Wan (PI), S. Müftü (50%) (\$184,747, NU) and R. Campbell (Mass. College of Pharmacy, \$75,000 MCP), NSF, CMMI-1232046, October 2012 – September 2015.
10. “Modeling of Wound Healing and Bone Adaptation for Dental Implant Treatments,” S. Müftü (PI), \$215,989, Bicon Inc., Boston, MA, 2012-2015.
11. “Gas-Particle Flow Model for Cold-Spray Applications,” S. Müftü (PI, 50%), A. Gouldstone, \$14,228, H.C. Starck Inc., Newton, MA, 2012.
12. “Tape Path Mechanics,” S. Müftü, \$52,000, International Storage Industry Consortium, INSIC, March 2012-March 2013.
13. “Fundamentals of Bonding in Kinetic Consolidation Processes,” A. Gouldstone (PI), S. Müftü (33%) and T. Ando, \$400,000, NSF-1130027, August 2011 – July 2014.

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14. "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.
  15. "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.
  16. "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.
  17. "Tape Path Mechanics," S. Müftü, \$50,000, International Storage Industry Consortium, INSIC, March 2011-March 2012.
  18. "Numerical Modeling of Bone Adaptation for Dental Implant Systems," S. Müftü (PI), \$63,500, Bicon Inc., Boston, MA, 2010-2011.
  19. "Tape Path Modeling," S. Müftü (PI), \$45,000, International Storage Industry Consortium, INSIC, March 2010 – March 2011.
  20. "Friction and Durability of Thin Polymer Coatings," S. Müftü (PI), \$9,420, GVD, Corp, Cambridge, MA, 2009-2010.
  21. "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.
  22. "Method for Measurement of Coefficient of Friction for PTFE Coatings," S. Müftü (PI) \$7,850, GVD, Cambridge, MA, 2007-2008.
  23. "Numerical Modeling of Bone Adaptation for Dental Implant Systems," S. Müftü (PI), \$197,447, Bicon Inc., Boston, MA, 2007-2010.
  24. "Process Development Investigations of Chemical Mechanical Polishing of Niobium," S. Müftü (PI, 50%), K. Zeimer, 2007, H.C. Starck Inc., \$26,686.
  25. "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.
  26. "Undergraduate research grant: Frictional properties of bio-implantable Titanium," S. Müftü, (PI), B. Davies, \$760, NEU-Provost's office, 2005.
  27. "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.
  28. "Eastman Kodak fellowship for graduate studies," S. Müftü (PI), \$41,737, Eastman Kodak Co., Rochester, NY, 2004 -2005.
  29. "Numerical Investigation of Bone Remodeling Around Dental Implants by Finite Element Analysis," S. Müftü (PI), \$175,000, Bicon, Inc., 2004 -2007.

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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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30. "Eastman Kodak fellowship for graduate studies," S. Müftü (PI), \$37,777, Eastman Kodak Co., 2003 -2004.
  31. "A report on controlling friction and wear of surfaces," S. Müftü (PI, 50%), J. Blucher, \$9,800, Delphi, Corp., 2003.
  32. "Analysis of stress distribution in osseointegrated dental implants (extension)," S. Müftü (PI), \$16,300, Bicon, Inc., 2003.
  33. "Eastman Kodak fellowship for graduate studies," S. Müftü (PI), \$37,777, Eastman Kodak Co., 2002 -2003.
  34. "Experimental investigation of slip and strength characteristics of hybrid yarns," J. Rossettos (PI), S. Müftü (50%), \$8,978, ARO, 2002.
  35. "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.
  36. "Mechanics of a flexible web wrapped helically around a turnbar," S. Müftü (PI), \$21,000, Eastman Kodak Co., 2001-2002.
  37. "Analysis of stress distribution in osseointegrated dental implants," S. Müftü (PI), \$81,347, Bicon Inc. 2001-2003.
  38. "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.
  39. Start-up funding, Department of Mechanical, Industrial and Manufacturing Engineering, S. Müftü, \$50,000, Northeastern University, 2000.

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

1. "Modelling of fluid-solid coupling in air reversers used in web conveyance," S. Müftü (PI), \$15,000, Eastman Kodak Co., 1999.
2. "Mathematical models of a paper sheet in the nip of two frictional rollers," S. Müftü (PI), \$25,000, Eastman Kodak Co., 1999.
3. "Modeling and characterization of the head/tape interface in DLT tape drives," S. Müftü (PI), \$43,000, Quantum Corp., 1998.
4. "Modelling of fluid-solid coupling in air reversers used in web conveyance," S. Müftü (PI), \$53,000, Eastman Kodak Co., 1997.
5. "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**

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

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**Equipment Purchase with NEU Funds**

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

**Equipment Donation**

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

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## PROFESSIONAL ACTIVITIES

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### 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 : 13<sup>th</sup> International Conference on Web Handling, Stillwater, OK, June, 2017
- Member, International Program Committee : 13<sup>th</sup> International Conference on Web Handling, Stillwater, OK, June, 2015
- Member, International Program Committee : 12<sup>th</sup> International Conference on Web Handling, Stillwater, OK, June, 2013
- Member, International Program Committee : 11<sup>th</sup> International Conference on Web Handling, Stillwater, OK, June, 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 H. Hashimoto, technical session, “Web Handling Research,” International Conference on Flexible and Printed Electronics, 2012” University of Tokyo, Tokyo, Japan, September 6-8, 2012.
- 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 – 2013 Member, Northeastern University Faculty Senate
- 2011 – 2013 Member, Administrator Evaluation Oversight Committee
- 2013 – 2014 Member, University Tenure Appeals Committee
- 2015 – 2017 Member, Administrator Evaluation Oversight Committee

### College of Engineering Committees:

- 2004 – 2005 COE Outstanding Teaching Awards Committee
- 2004 – 2007 COE Undergraduate Awards Committee
- 2011 – 2014 COE Faculty Council
- 2014 – 2015 Member, Research Advancement and Planning committee, COE
- 2015 – 2016 Member, COE Tenure Committee
- 2016 – 2017 Co-chair, COE Tenure Committee

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**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
2013–2014	Co-Chair, Fac. Search Committee, Computational Science & Eng.
2014 – 2015	Member, Faculty Search Committee, Advanced Manufacturing
2013–2016	Member, Graduate Affairs Committee, representing Mechanics Group
2013–2016	Academic adviser for Mechanics and Design graduate students
2011–pres.	Member, and chair, various CDC and Promotion subcommittees Professors KT Wan, M. Upmanyu, S. Chakravarthy, A. Gouldstone
2014–2017	Co-chair, Research Advancement and Planning committee, MIE
2015–2017	Member, Faculty Search Committee, Mechanics
2015–pres.	Group leader, Mechanics & Design Group

**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 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**

- NSF, “BRIDGE Program, CMMI,” Panel review, May 2012
- 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



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**MEMBERSHIP IN PROFESSIONAL SOCIETIES**

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American Society of Engineering Education  
Materials Research Society (MRS)  
Society of Tribologists and Lubrication  
Engineers

American Society of Mechanical Engineers  
Society for Industrial and Applied Mathematics

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## VISITING SCHOLARS

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- **Professor Josu Aguirrebeitia**, June-September 2012, University of the Basque Country, Spain.
- **Professor Yu-Hsing Chao**, September 2010 – June 2011, National Taiwan College of Marine & Technology

## POST-DOCTORAL ADVISING

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- **Dr. Zhenqi Yang**, (2011-2012) Non-equilibrium molecular dynamics of high velocity impact of metal surfaces
- **Dr. Hankang Yang**, (2015-2016) High velocity particle impact simulations
- **Dr. Enqiang Lin**, (2016-present) Efficient algorithms for finite element modeling of contact and cohesion in high-strain rate deformations
- **Dr. Ozan Ozdemir** (2016-present) Flow particle interactions in supersonic flow for cold-spray applications

## GRADUATE ADVISING

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### PhD Degrees

#### Awarded

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. **Jiayi Shi**, PhD, October 2, 2012, “Adhesion-detachment Mechanics of Thin Shell Structure in the Presence of Moist and Aqueous Environment” (co-advisor with Prof. KT Wan).
5. **Hsuan-Yu Chou**, PhD, October 31, 2012, “Mechano-Regulation of Mandibular Bone Development and Peri-Implant Osseointegration.”
6. **Baran Yildirim**, PhD, April 11, 2013, “Mechanistic modeling of high velocity micro-particle impacts: Application to material deposition by cold spray process.”
7. **Qian Sheng**, PhD, July 26, 2013, “Tribological and Mechanical Characterization of Thin Polymer Films.”
8. **Hankang Yang**, PhD, December 10, 2015, “Lateral Dynamics of an Axially Translating Medium: A Theoretical and Experimental Study on the Effects of Guiding Components”
9. **Tuğçe Kaşıkçı**, PhD, May 13, 2016, “A Study on Interactions of Thin Flexible Media with Grooved Rollers”

#### Pending

10. **Soroush Irandoust**, 2018 (exp.) Healing and remodeling in dental implant treatments.
11. **Runyang Zhang**, passed qualifying exam
12. **Jianfeng Sun** (with KT Wan), passed qualifying exam

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13. **Kaizhen Zhang** (with KT Wan), passed qualifying exam
  14. **Tingting Zhu** (with KT Wan), passed qualifying exam
  15. **Miranda Ran** (with KT Wan), passed qualifying exam
  16. **Qiyong Chen**, passed qualifying exam

### **M.S. Degrees**

#### **Awarded**

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 Sarı**, 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)
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 filed release mass spectrometer, and

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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., July 2010, (Gordon Fellow) “Passive Planar Isolation Platform: Redesign Analysis and Implementation”
19. **Shreyansh Patel**, M.S., December, 2011, “Effects of Alumina Slurry jet on Polishing and Erosion of Aluminum Substrate: Experimentation and CFD Modeling.”
20. **Andrew Hulton**, M.S., August 2013, “Investigation of the Effects of Particle Temperature and Spacing on Multiparticle Impacts in Cold Spray.”
21. **Katherine Bausemer**, M.S., 2014, Mathematical modeling of cell aggregation.
22. **Qiyong Chen**, M.S., August 2015, “Model-based Pre-operational Plan Optimization of Hepatic Tumor Radiofrequency Ablation.”
23. **Arash Alizadeh Dehkharghani**, July 2016, “Tuning Johnson-Cook Material Model Parameters for Impact of High-Velocity, Micron-Scale Particles”
24. **Ara Kim**, August 2017, “Experimental Analysis and Simulations of the Effects of Deposition Conditions on Deformation Characteristics of Al-6061 Powders in Cold-Spray”

#### **Member – Doctoral Committee in Mechanical & Industrial Engineering Department**

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.”
12. **Peter J. Ryan**, April. 2011, “The Carbon Nanotube-Substrate Interface: A Scanning Probe Microscopy Study of Interaction”

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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**, February 2012, “Theoretical Study of Thin Film Adhesion and Graphene Adhesion Measurements”
  15. **Salmon Kalkhoran**, November 2012, “Characterization of Anisotropic Plasticity in Material Systems Using Modified Indentation-Based Techniques”
  16. **Xin Wang**, March 2013, “Integrated Surface and Mechanical Characterization of Freestanding Biological and Other Nano-structures Using Atomic Force Microscopy”
  17. **Michael Robitaille**, March 2014, “Multi-scaled adhesion mechanics of hydrogel contact lenses”
  18. **Run Zhu**, July 2016, “New discrete dislocation algorithm in plastic deformation and its application to rate effect, creep and fracture”
  19. **Tian Liu**, April 13, 2016, “Passively-switched vibrational energy harvesters,”

#### **Member – Doctoral Committee in Civil & Environmental Engineering Department**

1. **Farid Moghim**, December 2013, (advisor: L. Caracoglia) “Wind-borne Debris Trajectory in High Winds: Application to the Protection of Tall Building Facades”
2. **Ali Kazemi Moghaddam**, December 2013, “Progressive Collapse of Reinforced Concrete Structures with Transfer Girders”
3. **Yifeng Lu**, September 2015, (advisor: M. Wang) “Mobile Acoustic Sensing of Surface Waves for Road Surface Assessment”
4. **Yubo Zhao**, September 2015, (advisor: M. Wang) “Road Condition and Road Roughness Assessment by Tire/Road Interaction Using Microphone, Dynamic Tire Pressure Sensor with an Axle Accelerometer”
5. **David Vines-Cavanau**, May 2016, (advisor: M. Wang) “Affordable Feature-Level Multisensor Data Fusion and K-Band Radar Solutions for Measuring Road Surface Distresses and Road Profiles”
6. **Wei Cui**, May 2017, (advisor: L. Caracoglia) “Performance-Based Design Framework for 3D Coupled Wind-Induced Response of Tall Buildings in Turbulent Winds”
7. **Angelina Jay**, May 2017, (advisor: A. Myers) “Experimental investigation of the local buckling and fatigue behavior of slender and tapered spirally welded steel tubes to enable taller wind towers”
8. **Kenny Kwan**, 2013 – current, advisor: Professor Steve Cranford

#### **Member – Doctoral Committee in Chemical Engineering Department**

1. **Salem Zahmi**, April 2014, Electrodeposition of CIGS/CZTS Components from Aqueous Electrolytes., advisor: Professor Elisabeth Podlaha-Murphy

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**Member – Doctoral Committee in BioEngineering Department**

1. **Adina Draghichi**, May 2017, (advisor: S. Shefelbine) “Rescuing Osteoporotic Bone in Individuals with Spinal Cord Injury,”

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**UNDERGRADUATE ADVISING**

**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 **ASME Young Engineer's Student Paper Competition Award: "Abutment hammering tool for dental implants,"**  
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:  
**"Abutment hammering tool for dental implants"**  
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:  
**"Corner Adapting Motorcycle Headlight"**  
A. Fry, J. Hager, J. Kershaw, M. Olatin, M. Reeves,
- 2006 Capstone Design Competition 1<sup>st</sup> Place, MIE Department, Northeastern University:  
**"An Educational Clock Kit"**  
Eric Andersen, Meredith Monaco, Brian Petrarca, Erik Stefansson, Michael Swanwick
- 2009 Capstone Design Competition 1<sup>st</sup> Place, MIE Department, Northeastern University:  
**"Bionic Ankle-Phase-II"**  
Chris Stivers, Derek Shaw, Eric Meade, Steve LaChance, Tobias Leiner
- 2011 Capstone Design Competition 1<sup>st</sup> Place, MIE Department, Northeastern University:  
**"Actuated Biopsy Needle"**  
Andrew Hulton, Willard Ober, William Hunt, Greg Allen, Brittney Brailsford
- 2012 Capstone Design Competition 1<sup>st</sup> Place, MIE Department, Northeastern University:  
**"Lateral Fluid Percussion Device"**  
David Cleary, Brian Morton, Lee Panecki, Eugene Zeleny, Matthew Zucosky
- 2013 Capstone Design Competition 1<sup>st</sup> Place, MIE Department, Northeastern University:  
**"Crack N'Snack: A personal peanut sheller"**  
Justin Evans, William Haugh, Michael Minerbi, Alary Price

**Undergraduate Student Research Projects**

**Undergraduate Students at NEU:**

- Christine Laliberte NEU, 2001

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- 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, Spring 2011
  - Neal Lancaster NEU, Spring 2011
  - Sant Vangavolu NEU, Summer-I 2011, Spring 2012
  - Damas Limoge NEU, Fall 2012
  - Eric Corti NEU, Fall 2012
  - Robert Sullivan NEU, Spring 2014
  - Max Leonard NEU, 2016

**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
2000-2001			
MIM 1355	Strength of Materials I	2000F	8
MIM1501	Design Studio I	2001W	10
MIM1502	Design Studio II	2001Sp	10
2001-2002			
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
2002-2003			
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
MIM U702	Design Studio-II	2012S	15
ME 5657	Finite Element Analysis	2012S	40
2012-2013			
MIM U701	Design Studio-I	2012Sum	15
MIM U702	Design Studio-II	2013S	15
ME 5657	Finite Element Analysis	2013S	63
2013-2014			
MIM U701	Design Studio-I	2013Sum	5
MIM U702	Design Studio-II	2014S	5
ME 7220	Mechanics of Contact and Lubrication	2013F	7
ME 5657	Finite Element Analysis	2014S	72
2014-2015			
ME 7220	Mechanics of Plates & Shells	2014F	17
ME 5657	Finite Element Analysis	2015S	58
2015-2016			
ME 7238	Advanced Finite Element Method	2015F	12
ME 5657	Finite Element Analysis	2016S	63
ME 7374	Special Topics in Finite Element Analysis	2016S	4
2016-2017			
ME4701	Design Studio-I	2016Sum	13
ME4702	Design Studio-II	2016F	13
ME 5657	Finite Element Analysis	2017S	64

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## INVITED PRESENTATIONS

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1. **S. Müftü**, T. Kasikci, H. Yang, “Effects of Grooved Roller Design on Lateral Tape Motion in Data Tape Drives,” Asia-Pacific Magnetic Recording Conference 2016, 13 – 15 July, 2016, Yonsei University, South Korea.
2. **S. Müftü**, “Mechanobiology of the Jaw: with Emphasis on Dental Implant Treatments,” Forsyth Institute, Cambridge, MA, January 7, 2016
3. H. Yang and **S. Müftü**, “Coupling between the in-plane and lateral tape dynamics in high capacity linear tape transport systems,” invited session on “Servo Control Technologies for Data Storage” in The 19th World Congress of the International Federation of Automatic Control, Cape Town, South Africa, 24-29 August 2014.
4. **S. Müftü**, Hosted by Professor Baojun Pang, Harbin Institute of Technology, May 20-25, 2013. Made the following four presentations:
  1. “Biomechanics of Dental Implants: Mechano-regulation of peri-implant osseointegration”
  2. “High-velocity Impact of Micron Scale Particles”
  3. “Experimental and Theoretical Investigations of Friction and Interfacial Delamination in Thin-film PTFE Coatings”
  4. “A General Model of Lateral Tape Dynamics”
5. **S. Müftü**, “Lateral Dynamics of Thin-flexible Webs in Roll-to-roll Manufacturing,” Special session on *R2R Systems & Web Handling in Continuous Manufacturing of FPEs*, International Conference on Flexible and Printed Electronics, September 11-13, 2013, Jeju Island, S. Korea.
6. **S. Müftü**, “Theoretical and Experimental Investigation of Bonding in Cold Spray,” Plasma Giken Co., Saitama, Japan, September 4, 2012.
7. **S. Müftü**, “Tape/Web Path Research Activities,” Fujifilm, Odawara, Japan, September 5, 2012.
8. **S. Müftü**, “Biomechanics of Dental Implants,” Tufts University, School of Dental Medicine, Postgraduate Prosthodontics Program, March 28, 2012.
9. **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.
10. **S. Müftü** and **A. Rotenberg**, (Children’s Hospital), “Concussion Warning System for Ski helmets” *Eighth Annual Sports Related Conference on Concussion & Spine Injury*, on May 27<sup>th</sup> 2011 at Harvard Medical School. (Dr. Rotenberg made the presentation)

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11. **S. Müftü**, and B. Yildirim, "High Velocity Impact of Micron Scale Particles" invited presentation, *Particle Tribology Symposium*, International Joint Tribology Conference, October 20, 2010.
  12. **S. Müftü**, "Modeling of Particle to Surface Interactions in Surface Engineering," University of Rhode Island, April 16, 2010.
  13. **S. Müftü**, "Biomechanics of Dental Implants by Using the Finite Element Method," Tufts University, School of Dental Medicine, Postgraduate Prosthodontics Program, November 18, 2009.
  14. **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
  15. **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.**
  16. **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
  17. **S. Müftü**, "Mechanics of Thin, Flexible, Translating Media and Their Interactions with Surrounding Air", November 4, 2005, Department of Mechanical & Industrial Engineering, Northeastern University
  18. **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.
  19. **S. Müftü**, "Mechanics of Thin, Flexible, Translating Media and Their Interactions with Surrounding Air", October 14, 2005, Procter & Gamble, Cincinnati, OH.
  20. **S. Müftü**, "Finite Element Analysis of Various Implant Designs Including Bicon's 6 × 5.7 mm Implant", Bicon World Symposium, Boston MA, September 8-10, 2005.
  21. **S. Müftü**, "Mechanics of Thin, Flexible, Translating Media and Their Interactions with Surrounding Air", March 22, 2005
  22. 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.
  23. **S. Müftü**, "Mechanics of Thin, Flexible, Translating Media and Their Interactions with Surrounding Air" University of Rhode Island, April 2004.
  24. **S. Müftü**, "A Nano-Scale Contact and Friction Model" and "Mechanics of Air Reversers," Eastman Kodak Company, Rochester, NY, January 2003.

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25. **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.
  26. **S. Müftü**, "Modelling of airflow in air reversers," Institute of Paper Science and Technology, Atlanta, GA, January 1997.
  27. **S. Müftü**, "Forced Vibrations in a Circumferentially Moving Cylindrical Shell," Department of Mechanical Eng., Boston University, Boston, MA, February 1996.
  28. **S. Müftü**, "Some Issues Related to the Mechanics of Web Transport," Department of Mechanical Eng., Northeastern University, Boston, MA, December 1995.
  29. **S. Müftü**, "Self lubricated air bars in web transport," Paper and Pulp Industry of Canada, Montreal, Canada, November 1993.
  30. **S. Müftü**, "On numerical methods to simulate dynamics of helical scan recording," 3M, St. Paul, MN, January 1993.

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## OTHER CONFERENCE AND EDUCATION RELATED PRESENTATIONS

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(Presenter is underlined)

1. Alizadeh, W. Xie, A. Kim, Q. Chen, H. Yang, X. Wang, V.K. Champagne, A. Gouldstone, Jae-Hwang Lee, S. Müftü, “Impact Mechanics of Micron Scale Aluminum Particles in 100 – 1000 m/s Velocity Range,” *ASME IMECE 2016 Conference*, Phoenix, AZ, Nov. 11-17, 2016.
2. W. Xie, A. Alizadeh, X. Wang, V.K. Champagne, S. Müftü, Jae-Hwang Lee, “Precise Single Micro-Particle Impact Study for Extreme Deformation Mechanics in Cold Spray Additive Manufacturing,” *MRS 2016 Conference*, Boston, MA, Nov. 27-December 2, 2016.
3. T. Kasikci, H. Yang, E.K. Kim, C. Janssen, S. Müftü, “Mechanics of Tape Contact with Circumferentially Grooved Cylindrical Rollers: Experiments and modelling,” Proceedings of the 2016 ASME Information Storage and Processing Systems ISPS2016, June 20-21, 2016, San, CA, USA.
4. Q. Chen, S. Müftü, F.C. Meral, K. Tuncali, M. Akcakaya, “Pre-treatment Planning for Hepatic Radiofrequency Ablation,” *IEEE Signal Processing in Medicine and Biology Symposium*, December 12, 2015, Temple University, Philadelphia, Pennsylvania.
5. S. Irandoust, S. Müftü, “Computer Simulation of Dental implant Treatments: Long-Term Behavior” *Northeast Bioengineering Conference*, Troy, NY, April 17-19, 2015
6. T. Kasikci and S. Müftü, “Thin Tape Traction Over a Grooved Roller,” *Proceedings of the 13<sup>th</sup> International Conference on Web Handling, IWEB-2015*, Oklahoma State University, Stillwater, OK, June 8-10, 2015.
7. S. Müftü, S. Zhalehpour, A. Gouldstone, and T. Ando, “Assessment of Interface Energy in High Velocity Particle Impacts” *Proceedings of the 38<sup>th</sup> Annual Meeting, The Adhesion Society February 20-25, 2015, Savannah, GA*
8. S. Müftü, “Modeling and Testing of Bonded Interfaces and Bonding of Interfaces,” *Bruker Tribology Workshop*, Bruker Corporation Headquarters, Billerica, MA, March 26, 2014.
9. H. Yang and S. Müftü, “Surface friction guiding effects on dynamics of web/tape handling systems,” *Symposium on Dynamics of Structures with Contact and/or Frictional Interfaces*, ASME IMECE-40174, November 14-20, 2014, Montreal, Canada
10. T. Kasikci, M-C Wang, C. Jensen, T. Goker, S. Müftü, “Mechanics of a Thin Flexible Tape Moving in Contact with a Grooved-Cylindrical Roller,” *Symposium on Dynamics of Structures with Contact and/or Frictional Interfaces*, ASME IMECE-40186, November 14-20, 2014, Montreal, Canada
11. S. Müftü, A. Gouldstone, T. Ando, M. Upmanyu and S. Zhalehpour, “Assessment of Interface Energy in Particle Deposition by Cold-Particle Gas Spray Technique,” *Symposium on Additive Manufacturing*, ASME IMECE-40194, November 14-20, 2014, Montreal, Canada

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12. J. Sun, K. Bausemer, **S. Müftü**, KT Wan, “Adhesion-Detachment Mechanics of a Spherical / Cylindrical Bacterium in the Presence of an Electrostatic Double Layer,” ASME IMECE-40513, November 14-20, 2014, Montreal, Canada
  13. J. Sun, E. Goluch, A. Z. Gu, **S. Müftü**, KT Wan, “Mechanics of Bacterial Adhesion in Microfluidics channel and its Correlation with Macroscopic Water Filtration Column,” ASME IMECE-40516, November 14-20, 2014, Montreal, Canada
  14. D. Chan, R. Campbell, **S. Müftü**, KT Wan, “Adhesion, deformation, and fusion mechanics of drug delivery liposomes,” ASME IMECE-40516, November 14-20, 2014, Montreal, Canada
  15. H. Yang and **S. Müftü**, “On coupled dynamics of frictional guides in tape transport systems,” Proceedings of the 24<sup>th</sup> Annual Conference on Information Storage and Processing Systems ISPS2014 June 16-17, 2014, Santa Clara, California, USA.
  16. T. Kasikci, MC Weng, A. Nayak, T. Goker, **S. Müftü**, “Tape Mechanics over a Grooved Roller: Experiments and Theory,” Proceedings of the 24<sup>th</sup> Annual Conference on Information Storage and Processing Systems ISPS2014 June 16-17, 2014, Santa Clara, California, USA.
  17. K. Bausemer, **S. Müftü** and K.-T. Wan, “Model for Attachment-Detachment Mechanics of E. coli Bacteria in the Presence of Surface Forces,” Proceedings of the 37th Annual Meeting of the Adhesion Society, Daytona Beach, FL, February 24-27, 2014.
  18. Yıldırım, A. Hulton, A. Seyed Alevian, T. Ando, A. Gouldstone, **S. Müftü**, “Soğuk sprey işleminde çoklu parçacık çarpışması ve kaplama özelliklerinin sayısal ve deneysel yöntemlerle incelenmesi,” SAVTEK 2014 Conference, Ankara, Turkey, June 2014.
  19. Hulton, B. Yildirim, A. Seyed Alevian, H. Fukanuma, T. Ando, **S. Müftü**, A. Gouldstone, “Analysis of Particle Deformation in Cold Sprayed Layers,” Symposium on Advanced Manufacturing Technologies, Materials Science & Technology 2013 Conference, October 27-31, 2013, Montreal, Canada
  20. Hulton, B. Yildirim, A. Seyed Alevian, H. Fukanuma, T. Ando, **S. Müftü**, A. Gouldstone, “On the mechanics of coating formation in cold spray,” Symposium on Measurement and Modeling of High Strain-rate Deformation, Materials Science & Technology 2013 Conference, October 27-31, 2013, Montreal, Canada
  21. Y. Liu, Q. Sheng, **S. Müftü**, A. Khademhosseini, M. L. Wang, and, “M. R. Dokmeci, “A stretchable and Transparent SWNT Strain Sensor Encapsulated in Thin PDMS Films,” Proceedings of the IEEE Transducers 2013, Barcelona, SPAIN, 16-20 June 2013, pp. 1091-1094.
  22. Q. Sheng, A.J. White, **S. Müftü**, “Experimental and Numerical Investigations on Interfacial Delamination of Thin Film PTFE Coatings,” Proceeding of the 36th Annual Meeting of the Adhesion Society, Daytona Beach, FL, March 3-5, 2013.
  23. J. Shi, **S. Müftü** and Kai-Tak Wan, “Adhesion -Detachment Mechanics of Thin Shells,” Proceeding of the 36th Annual Meeting of the Adhesion Society, Daytona Beach, FL, March 3-5, 2013.

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24. T. Kasikci, **S. Müftü**, “Modeling the traction of a thin tape guided by a grooved roller,” Proceedings of the 23<sup>rd</sup> Annual Conference on Information Storage and Processing Systems ISPS2013 June 24-25, 2013, Santa Clara, California, USA.
  25. H. Yang and **S. Müftü**, “Friction induced lateral vibrations of a tape moving in contact with a slewing head,” Proceedings of the 23<sup>rd</sup> Annual Conference on Information Storage and Processing Systems ISPS2013 June 24-25, 2013, Santa Clara, California, USA.
  26. H. Yang and **S. Müftü**, “A general model of lateral web dynamics between two reels,” International Web Handling Conference (IWEB-2013), Oklahoma State University, Still Water, OK, June 5-7, 2013.
  27. **S. Müftü** and H. Yang “Modeling of Fixed and Roller Guide Dynamics” Web Handling & Coating Session, International Conference on Flexible and Printed Electronics, The University of Tokyo, September 6-8, 2012.
  28. H. Yang and **S. Müftü**, “Lateral Tape Dynamics over Non-linear Guides,” 2012 ASME-ISPS /JSME-IIP Joint International Conference on Micromechatronics for Information and Precision Equipment, MIPE2012, June 18-20, 2012, Santa Clara, California.
  29. Seyed-Alavian, A. Hulton, B. Yildirim, **S. Müftü**, T.Ando, A. Gouldstone “Computational and Experimental Investigation of Cold Spray Morphology,” Materials Science & Technology Conference, 2012.
  30. J. Shi, **S. Müftü**, KT Wan, " Adhesion of a Cylindrical Shell with an Elastic Membrane Substrate", Adhesion Society Annual Meeting, New Orleans, LA, Feb 26-29, 2012
  31. KT Wan , J. Shi, **S. Müftü** and A.Z. Gu, “Adhesion of A Cylindrical Shell in the Presence of DLVO Potential and Its Application in Colloidal Filtration,” Adhesion Society Annual Meeting, New Orleans, LA, Feb 26-29, 2012
  32. Michael Robitaille, Jiayi Shi, Sinan Muftu, Kai-tak Wan, “Adhesion of a Convex Shell: Application to Hydrogel Lenses and Bacteria,” ASME-IMECE Congress & Exposition, Houston, TX, Nov 9-15, 2012
  33. KT Wan, **S. Müftü**, A. Gu, J. Shi, C. Majidi, G. Li, M. Robitaille, "Adhesion Mechanics of Thin Shells and Membranes Application to Colloidal Filtration", 3M Award Session, Adhesion Society Annual Meeting, Savannah, Georgia, Feb 13-16, 2011.
  34. J. Shi, **S. Müftü**, M. Robitaille, KT Wan, "Mechanical Deformation and Adhesion of Spherical Shells", Adhesion Society Annual Meeting, Savannah, Georgia, Feb 13-16, 2011
  35. J. Shi, M. Robitaille, G. Li, S. Muftu, A.Z. Gu, C. Majidi, KT Wan, "Adhesion of Cylindrical and Spherical Shells", ASME Applied Mechanics and Materials Conference, McMAT-2011 Fairmont Hotel, Chicago, IL, May 30 to June 1, 2011.
  36. Tgavalekos, K., Quivira F., Meleis W., **Müftü**, S. Wan KT, Brooks, D.H., Cormier J., Kopans D.B., and Moore R.H., “Breast Lesion Detection via Elastography with Finite

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Element Modeling,” Radiological Society of North America (RSNA) Annual Meeting, Chicago, IL, November 28, 2011.

37. **J. Shi, S. Müftü**, A. Gu, and K.T. Wan, “Adhesion of a Cylindrical Bacterium in the Presence of DLVO Potential,” *ASME, IMECE, 2011*, Boulder, CO, November 11-17, 2011.
38. **J. Shi, S. Müftü**, M. Robitaille, and K.T. Wan, “Adhesion Mechanics of Spherical and Cylindrical Shells,” *ASME, IMECE, 2011*, Boulder, CO, November 11-17, 2011.
39. **J. Shi, S. Müftü**, and K.T. Wan, “Adhesion of a Cylindrical Shell with an Elastic Membrane Substrate,” *ASME, IMECE, 2011*, Boulder, CO, November 11-17, 2011.
40. **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, October 23-26, 2011.
41. **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, October 23-26, 2011.
42. **J. Shi, S. Müftü** and K.T. Wan, “Adhesion of a Cylindrical Shell with a Stretched Membrane,” *Engineering Mechanics Conference, EMI 2011*, Northeastern University, Boston, MA, June 2011.
43. **J. Shi, S. Müftü** and K.T. Wan, “Adhesion Mechanics of a Spherical Shell,” *Engineering Mechanics Conference, EMI 2011*, Northeastern University, Boston, MA, June 2011.
44. **J. Shi, X. Wang, S. Müftü, A. Gu** and K.T. Wan, “Adhesion Behavior of A Cylindrical Shell in Presence of Secondary Energy Minimum Potential,” *Engineering Mechanics Conference, EMI 2011*, Northeastern University, Boston, MA, June 2011.
45. **S. Müftü**, “Tape Path Mechanics: Model Development,” Research Review, IBM, Tucson, AZ, May 10-12, 2010.
46. **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.
47. **J. Shi, S. Müftü**, K.-T. Wan, C. Majidi, “Adhesion of Compliant Cylinders,” *Adhesion Society Meeting*, Daytona Beach, FL, February 21-24, 2010.
48. **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.
49. **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.



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50. 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.
  51. 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.
  52. 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.
  53. **Bozkaya**, **S. Müftü**, “Optimization of Material Removal Efficiency in Low Pressure CMP,” *Proceedings MRS Spring Meeting*, San Francisco, CA, April, 2009.
  54. **E.Lopez**, **S. Müftü**, “On the vibration of helically wrapped webs,” *Mechanics of Slender Structures Symposium*, July 23, 2008, UMBC, Baltimore, MD.
  55. 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.
  56. **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.
  57. **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.
  58. 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.
  59. 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.
  60. **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.
  61. **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.
  62. **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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63. 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.
  64. 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.
  65. 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.
  66. **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.
  67. 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.
  68. **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.
  69. **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.
  70. **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.
  71. 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.
  72. 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.
  73. **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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74. 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**.
  75. 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.
  76. 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.
  77. 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.
  78. 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.
  79. **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.
  80. 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.
  81. 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.*
  82. 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.*
  83. 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.*
  84. 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.*
  85. 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.*
  86. 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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87. 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.
  88. 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.
  89. **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.
  90. **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.
  91. **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.
  92. **S. Müftü**, "Tape traction over rollers and posts," ASME Information Storage and Processing Systems Conference, Santa Clara, CA, June 2001.
  93. **S. Müftü**, "Measurements and Theoretical Predictions of Head/Tape Spacing over a Flat-head," National Storage Industry Consortium Meeting, Monterey, CA, June 2001.
  94. **S. Müftü**, "Measurements and Theoretical Predictions of Head/Tape Spacing over a Flat-head," International Tribology Conference, Nagasaki, Japan, November 2001.
  95. **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.
  96. **S. Müftü**, " The Mechanics of a Flexible Web Floating over and Air Reverser ," The International Web Handling Conference, OSU, Stillwater, OK, June 1999.
  97. **S. Müftü**, "The Mechanics of a Flexible Web Floating over an Air Reverser ," ASME International Congress and Exposition, Nashville, TN, November, 1999.
  98. **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.
  99. **S. Müftü**, "Head Wear in Tape Recorders," ASME International Congress and Exposition, Dallas, TX, October 1998.
  100. **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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101. **S. Müftü**, "Modelling of airflow in air reversers," ASME International Congress and Exposition, Dallas, TX, November 1997.
  102. **S. Müftü**, "Modelling of airflow in air reversers," SIAM Annual Meeting, Stanford University, Palo Alto, CA, July 1997.
  103. **S. Müftü**, "Modelling of airflow in air reversers," Center for Magnetic Recording Research, UCSD, La Jolla, CA, March 1997.
  104. **S. Müftü**, "Flat Heads for High-Speed, Contact Tape recording: Experimental Evaluation and Theoretical Analysis," ASME International Congress and Exposition, Atlanta, GA, November 1996.
  105. **S. Müftü**, "Contact Tape Recording with a Flat Head Contour," Center for Magnetic Recording Research, UCSD, La Jolla, CA, March 1996.
  106. **S. Müftü**, "The Transient Effects in Two-Dimensional Foil Bearing Problem in Magnetic Recording," International Tribology Conference, Yokohama, Japan, October 1995.
  107. **S. Müftü**, "Modelling the Transport of Paper Webs Including the Paper Permeability Effects," ASME International Congress and Exposition, San Francisco CA, March 1995.
  108. **S. Müftü**, "A Model for the Mixed Lubrication in the Start-up of the Magnetic Tapes," ASME, Winter Annual Meeting, Chicago, IL, November 1994.
  109. **S. Müftü**, "A transient solution for the finite width foil bearing problem," ASME, Winter Annual Meeting, New Orleans, LA, December 1993.
  110. **S. Müftü**, "Transient effects in magnetic tape transport," Eastman Kodak Co., Rochester, NY, August 1993.
  111. **S. Müftü** and **R.C. Benson** "Fully coupled transient solution of the foil bearing problem" Matsushita Electronics Corp, and Hitachi, Japan, August 1993.
  112. **S. Müftü** and R.C. Benson, "Numerical simulation of tape dynamics in helical scan recording," IEEE Intermagnetics Conference, Stockholm, Sweden, April 1993.
  113. **S. Müftü**, "Numerical simulation of transient waves in tapes," Center for Magnetic Recording Research, UCSD, La Jolla, CA, March 1993.
  114. **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. K. Bausemer, T. Zhu, KT Wan and **S. Müftü**, "Model for the Mechanical Characterization of Boron Nitride Nanotubes," poster presentation ASME IMECE-39065, November 14-20, 2014, Montreal, Canada, POSTER PRESENTATION.

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2. K. Bausemer, **S. Muftu** and K.-T. Wan, "Attachment-Detachment Trajectory for *E. coli* Bacteria in the Presence of Surface Forces," Northeast Bioengineering Conference, Boston, MA, April 25-27, 2014
  3. S. Irandoust, **S. Muftu**, "Effects of Numerical Parameters Used in Bone Fracture Healing Simulations," Northeast Bioengineering Conference, Boston, MA, April 25-27, 2014
  - 4.
  5. Yueyun Li, Xin Wang, Jiayi Shi, Sinan Muftu, Kai-tak Wan, April Z. G "Bacterial Deposition-Transportation Behavior quantification by Single Cell Characterization," (Poster) 2012 Subsurface Bio-geochemical Research (SBR) Contractor-Grantee Workshop, Department of Energy, Washington DC, April 30 – May 2, 2012
  6. J. Shi, X. Wang, **S. Müftü**, A. Z. Gu, KT Wan, "Adhesion of a Cylindrical Bacterium in the Presence of DLVO Potential", Poster presentation, Gordon Research Conferences "Adhesion, Science of" Bates College, Lewiston, ME, July 24-29, 2011.
  7. 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.
  8. J. Shi, **S. Müftü**, K.-T. Wan, "Adhesion Mechanics of a Cylinder and a Rigid Substrate," *MRS Fall Meeting*, Boston, MA, **November**, 2009.
  9. 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.
  10. 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.
  11. 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.
  12. 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.
  13. 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.
  14. **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.
  15. **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.

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16. G. Calota, S. Müftü, "Role of Chemical Mechanical Polishing in Microfabrication of Embedded Nanowires: Modeling and Experiments," NSF-NSEC-Site Visit, UNH, June 2007.
  17. 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.
  18. 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*.
  19. 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**.
  20. 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**.
  21. 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.
  22. 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
  23. 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.
  24. 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.
  25. 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.
  26. 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.
  27. 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)

1. R.Q.Sheng, and **S. Müftü**, “Investigations on Interfacial Delamination of Thin Polytetrafluoroethylene (PTFE) Films,” Northeastern University Research Expo, March 2013.
2. H.Y. Chou, **S. Müftü**, “Observations on Bone-Implant Contact Based on Analysis of Internal Bone Remodeling” Northeastern University Research Expo, San, March 2009.
3. **S. Faegh**, S. Müftü, “Mechanisms of Load Transfer along Bone Dental Implant Interface,” Northeastern University Research Expo, San, March 2009.
4. J. Shi, **S. Müftü**, K.-T. Wan, “Modeling Mechanical Contact between a Membranous Vesicle and Rigid Substrate,” Northeastern University Research Expo, San, March 2009.
5. 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.
6. H.Y. Chou, **S. Müftü**, “Prediction of Bone Remodeling Around Dental Implant Systems” Northeastern University Research Expo, San, March 2008.
7. E. Lopez, **S. Müftü**, “Free Vibration Analysis of a Thin, Tensioned, Helically Wrapped Webs” Northeastern University Research Expo, San, March 2008.
8. 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.