

JUNLAN WANG

Curriculum Vitae

Department of Mechanical Engineering
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EDUCATIONAL HISTORY

University of Illinois at Urbana-Champaign (UIUC), Urbana, IL, USA

Ph.D., Theoretical and Applied Mechanics

July, 2002

Dissertation: Thin-film Adhesion Measurement by Laser-induced Stress Waves

University of Science and Technology of China (USTC), Hefei, Anhui, China

M.S., Mechanics and Mechanical Engineering

July, 1997

Thesis: Displacement Measurement of Large-sized Object under Dynamic Loading

University of Science and Technology of China (USTC), Hefei, Anhui, China

B.S., Mechanics and Mechanical Engineering

July, 1994

Thesis: Investigation of plant specimen activity using laser speckle correlation method

EMPLOYMENT HISTORY

University of Washington (UW), Seattle, WA, USA

- Full Professor, Mechanical Engineering (2019 - present)
- Adjunct Professor, Materials Science & Engineering (2019 – present)
- Associate Professor, Mechanical Engineering (2008 –2019)
- Graduate Program Coordinator, Mechanical Engineering (2021- present)
- Co-Director, Advanced Composites Center (2020 – 2022)

University of California, Riverside (UC Riverside), Riverside, CA, USA

- Associate Professor of Mechanical Engineering (2008 –2008)
- Assistant Professor of Mechanical Engineering (2003 - 2008)

Brown University, Providence, RI, USA

- Post-doctoral Research Associate (2002 – 2003)

University of Illinois at Urbana-Champaign (UIUC), Urbana, IL, USA

- Teaching and Research Assistant (1997 – 2002)

AWARDS AND HONORS

1. **Vice-President**, Society for Experimental Mechanics, 2023-2024
2. **M.M. Frocht Award**, Society for Experimental Mechanics, 2020
3. **Fellow**, American Society of Mechanical Engineers, 2020
4. **UW Distinguished Teaching Award Nominee**, 2019, 2020, 2021
5. **A.J. Durelli Award**, Society for Experimental Mechanics, 2016
6. **Certificate of Recognition for Outstanding Service**, American Society of Mechanical Engineers, 2015
7. **CAREER Award**, National Science Foundation, 2008-2013
8. **Faculty Marshal**, UC Riverside Commencement Ceremony, 2008
9. **ASEE Beer and Johnston, Jr. Outstanding New Mechanics Educator Award**, American Society for Engineering Education, 2007
10. **Bourns College of Engineering Teaching Excellence Award** (annual award to one engineering faculty member for outstanding classroom teaching), UC Riverside, 2007
11. **Materials Division Certificate of Recognition** for organizing activities, American Society of Mechanical Engineers, 2006, 2007
12. **University of California Regents Faculty Development Award**, 2006
13. **University of California Regents Faculty Fellowship**, 2004
14. **M. Hetenyi Award**, Society for Experimental Mechanics, 2004
15. **NSF Fellowship** for Summer Institute on Nano Mechanics and Materials, 2003, NSF
16. **Graduate Teacher Certificate** for effective teaching practices, UIUC, 2002
17. **Graduate Conference Travel Fellowship**, the 14th U.S. National Congress of Theoretical and Applied Mechanics, Virginia Tech, Blacksburg, VA, 2002
18. **Dissertation Completion Fellowship**, UIUC, 2001-02
19. **Thomas J. Dolan Award**, UIUC, 2001
20. **Graduate College Conference Travel Fellowship**, UIUC, 2000
21. **Fred B. Seely Award**, UIUC, 1998
22. **Guang-Hua Outstanding Graduate Award**, USTC, 1995
23. **ELITE Experimental Science Award**, USTC, 1994
24. **Ranked No. 1 in solid mechanics major in 5 years (1989-1994), directly admitted to graduate school exempted from national entrance examination (1994)**, USTC
25. **People's Scholarship for academic excellence**, USTC, 1989-1994

Google Scholar citations. ORCID: 0000-0002-6262-2484

“_” indicates PI’s graduate students, “*”- corresponding or co-corresponding author, “†” indicate equal contribution

Refereed archival journal publications

- J1. Y. Zhou, **J. Wang***, "Mechanical Properties of Thermally Annealed Cu/Ni and Cu/Al Multilayer Thin Films: Solid Solution vs. Intermetallic Strengthening" *Metals* 14 (3), 256 (2024) <https://doi.org/10.3390/met14030256>
- J2. A. Kim, L. Vu, T. Chung, D. Song, **J. Wang***, “Correlation of Microstructure and Nanomechanical Properties of Additively Manufactured Inconel 718”, *Journal of Applied Mechanics* 90 (12), 121006-1 (2023)
- J3. Z. Yang, **J. Wang***, “Deposition Temperature Induced Texture and Strengthening of Ti/Ni Multilayer Thin Films”, *Journal of Applied Mechanics*, 90 (12), 121005 (2023) <https://doi.org/10.1115/1.4062775>
- J4. N. Yamagata, G. Randall, E. Lavoie, D. Arola, **J. Wang***, “Microstructure, Mechanical Properties and Elemental Composition of the Terrestrial Isopod Armadillidium Vulgare Cuticle”, *Journal of the Mechanical Behavior of Biomedical Materials*, 132, 105299 (2022) <https://doi.org/10.1016/j.jmbbm.2022.105299>
- J5. Z. Wang, A. D. Christodoulides, L. Dai, Y. Zhou, Rui Dai, Y. Xu, L. Dai, Q. Nian, **J. Wang**, J. A. Malen, R. Y. Wang*, “Ordering Enhances Mechanics and Thermal Transport in Single-Domain Colloidal Nanocrystal Superlattices”, *Nano Letters*, 22 (12), 4669-4676, (2022) <https://doi.org/10.1021/acs.nanolett.2c00544>
- J6. Phillip Miller, **J. Wang***, “Effect of Pulse Duration and Confinement on Laser Generated Stress Waves For High Strain Rate Material Testing”, *Optics and Lasers in Engineering*, 151 (2022) 106919. <https://doi.org/10.1016/j.optlaseng.2021.106919>
- J7. K. Tanaka, M. Stossel, H. Jiang, D. Arola, **J. Wang***, Engineering the Interface: Effects of Interfacial Adhesion and Substrate Thickness on the Ductility of Polymer-supported Metal Films”, *Experimental Mechanics*, 62, 49–58 (2022). <https://doi.org/10.1007/s11340-021-00759-w>
- J8. Han, X., S. Wang, Shanyu, Y. Xu, G. Zhong, Y. Zhou, B. Liu, X. Jiang, X. Wang, Y. Li, Z. Zhang, S. Chen, C. Wang, Y. Yang, W. Zhang, **J. Wang**, J. Liu, J. Yang*, “All Solid Thick Oxide Cathodes Based on Low Temperature Sintering for High Energy Solid Batteries”, *Energy & Environmental Science*, published by the Royal Society of Chemistry (2021) <https://doi.org/10.1039/D1EE01494C>

- J9. Ehsani, H., Boyd, J. D., **Wang, J.**, and Grady, M. E.*, "Evolution of the Laser-Induced Spallation Technique in Film Adhesion Measurement." *ASME. Appl. Mech. Rev.* May 2021; 73(3): 030802. <https://doi.org/10.1115/1.4050700>
- J10. M. Zhao, J. Lian*, Z. Yang, **J. Wang***, H. Yu, K. Jin, "Effect of annealing time on mechanical properties of n-type $\text{La}_{1.9}\text{Ce}_{0.1}\text{CuO}_4$ superconducting films by depth sensing nanoindentation", *Materials Research Express*, 6(5), 056418 (2019)
- J11. K. Dai, J. Lian*, M. J. Miller, **J. Wang***, Y. Shi, Y. Liu, H. Song, X. Wang, "Optical properties of VO_2 thin films deposited on different glass substrates", *Optical Materials Express*, 9(2), 663-672 (2019)
- J12. I.G. McDonald, W.M. Moehlenkamp, D. Arola, **J. Wang***, "Residual Stresses in Cu/Ni Multilayer Thin Films Measured Using the $\text{Sin}^2\psi$ method", *Experimental Mechanics*, 59(1), 111-120 (2019).
- J13. D. Arola*, S. Murcia, M. Stossel, R. Pahuja, T. Linley, Arun Devaraj, M. Ramulu, E.A. Ossa, **J. Wang**, "The limiting layer of fish scales: structures and properties", *Acta Biomaterialia*, 67, 319-330 (2018)
- J14. Z. Yang, M. Stossel, **J. Wang***, "Thickness effect on microstructural and mechanical properties of pulse-laser treated Ti/Ni multilayer thin films", *Journal of Experimental Mechanics*, 32(5), 634-644 (2017)
- J15. M. Hiraiwa, M. Stossel, A. Khanolkar, **J. Wang**, N. Boechler*, "Laser-Induced Spallation of Microsphere Monolayers", *Langmuir*, 32 (31) 7730-7734 (2016)
- J16. M. J. Miller, **J. Wang***, "Multilayer ITO/ VO_2 / TiO_2 thin films for control of solar and thermal spectra", *Solar Energy Materials and Solar Cells*, 154, 88-93 (2016)
- J17. Z. Yang, **J. Wang***, "Coupled annealing temperature and layer thickness effect on strengthening mechanism of Ti/Ni multilayer thin films", *Journal of the Mechanics and Physics of Solids*, 88, 72-82 (2016)
- J18. G. Chow, E Uchaker, G. Cao, **J. Wang***, "Surface acoustic wave characterization of porous nanostructured V_2O_5 thin film electrodes", *Mechanics of Materials*, 91, 333-342 (2015)
- J19. Z. Yang, M. Stossel, **J. Wang***, "Microstructural evolution and surface strengthening of pulse-laser treated Ti/Ni multilayer thin films", *Extreme Mechanics Letters*, 4, 45-51 (2015)
- J20. M. J. Miller, **J. Wang***, "Coupled effect of deposition and annealing temperatures on optical, electrical and mechanical properties of TiO_2 thin films", *Vacuum*, 120, 155-161 (2015)
- J21. M. J. Miller, **J. Wang***, "Influence of Na diffusion on thermochromism of vanadium oxide films and suppression through mixed-alkali effect", *Materials Science and Engineering B*, 200, 50-58 (2015)
- J22. M. J. Miller, **J. Wang***, "Influence of Grain Size on Transition Temperature of Thermochromic VO_2 film", *Journal of Applied Physics*, 117, 034307 (2015)

- J23. G. Chow, P. Miller, **J. Wang***, “Correlation between Laser-induced Surface Acoustic Waves and Nanoindentation on Elastic Modulus Measurement of a Nanoporous Zeolite Thin Film”, *Experimental Mechanics*, 55(3), 647-650 (2015)
- J24. Z. Yang, **J. Wang***, “Orientation-Dependent Hardness in As-Deposited and Low-Temperature Annealed Ti/Ni Multilayer Thin Films”, *Journal of Applied Mechanics*, 82(1), 011008 (2015)
- J25. J. Lian, **J. Wang***, “Microstructural and Mechanical Anisotropy of Crab Cancer Magister Exoskeleton”, *Experimental Mechanics*, 54(2), 229-239 (2014)
- J26. Z. Yang, J. Lian, **J. Wang***, “Molecular dynamics simulation of thin film interfacial strength dependency on lattice mismatch”, *Thin Solid Films*, 537, 190-197(2013)
- J27. W.-F. Yeh, **J. Wang***, “A force domain analog-to-digital converter applied to microscale tensile Test”, *Experimental Mechanics*, 53(5), 795-806 (2013)
- J28. E. Penilla, F. G. Pérez-Gutiérrez, W. Duvall, G. Aguilar, **J. Wang***, “Optical properties of super stoichiometric TiN_{1+x} thin films”, *Thin Solid Films*, 524, 272-277 (2012)
- J29. G. Chow, R. S. Bedi, Y. Yan, **J. Wang***, “Zeolite as a wear-resistant coating”, *Microporous and Mesoporous Materials*, 151, 346-351 (2012)
- J30. R. S. Bedi, G. Chow, **J. Wang**, L. Zanello, Y. Yan*, “Bioactive Materials for Regenerative Medicine: Zeolite-Hydroxyapatite Bone Mimetic Coatings”, *Advanced Engineering Materials*, 14 (3), 200-206 (2012)
- J31. C. Lew, Y. Liu, D. Kisailus, G. Kloster, G. Chow, B. Boyanov, M. Sun, **J. Wang**, Y. Yan*, “Insight into On-Wafer Crystallization of Pure-Silica-Zeolite Films through Nutrient Replenishment”, *Langmuir*, 27(7), 3283–3285 (2011)
- J32. W. W Tooley, S. Fegghi, S. J Han, **J. Wang**, N. J Sniadecki*, “Thermal fracture of oxidized polydimethylsiloxane during soft lithography of nanopost arrays”, *Journal of Micromechanics and Microengineering*, 21 (2011) 054013
- J33. P. Miller, L. Hu, and **J. Wang***, “Finite element simulation of cell-substrate decohesion by laser-induced stress waves”, *Journal of the Mechanical Behavior of Biomedical Materials*, 3, 268-277 (2010)
- J34. J. Lian, S. Chun, M.S. Goorsky, **J. Wang***, “Mechanical behavior of Au-In intermetallics for low temperature solder diffusion bonding”, *Journal of Materials Sciences*, 44, 6155-6161 (2009)
- J35. D. Ward, D. Farkas, J. Lian, W.A. Curtin*, **J. Wang**, K.-S. Kim, Y. Qi, , “Engineering size-scaling of plastic deformation in nanoscale asperities”, *Proceedings of National Academy of Sciences USA*, 106(24), 9580-9585 (2009)
- J36. Y. Liu, C.M. Lew, M. Sun, R. Cai, **J. Wang***, G. Kloster, B. Boyanov, Y. Yan*, “On-Wafer Crystallization of Ultralow- k Pure Silica Zeolite Films”, *Angewandte Chemie International Edition*, 48, 4777-4780 (2009)

- J37. J. Lian, J.Y. Kim, J.R. Greer, **J. Wang***, "Sample boundary effect in nanoindentation of nano and microscale surface structures", *Journal of the Mechanics and Physics of Solids*, 57 (5), 812-827 (2009)
- J38. C.M. Lew, Y. Liu, B. Day, G.M. Kloster, H. Tiznado, M. Sun, F. Zaera, **J. Wang**, Y. Yan*, "Hydrofluoric Acid-Resistant and Hydrophobic Pure-Silica-Zeolite MEL Low-Dielectric Constant Films", *Langmuir*, 25 (9), 5039-5044 (2009)
- J39. L. Hu, P. Miller, **J. Wang***, "High strain-rate spallation and fracture of tungsten by laser-induced stress waves", *Materials Science and Engineering A*, 504, 73-80 (2009)
- J40. C.M. Lew, Z. Li, S. Li, S. Hwang, Y. Liu, D.I. Medina, M. Sun, **J. Wang**, M. E. Davis, Y. Yan*, "Pure-Silica-Zeolite MFI and MEL low-dielectric constant films with fluoroorganic functionalization", *Advanced Functional Materials*, 18(21), 3454-3460 (2008)
- J41. Y. Liu, M. Sun, C. M. Lew, **J. Wang**, Y. Yan*, "Pure-silica-zeolite MEL nanocrystals prepared with evaporation-assisted two-Stage synthesis method as ultra-low-k materials", *Advanced Functional Materials*, 18(12), 1732-1738 (2008)
- J42. E. Penilla, **J. Wang***, "Pressure and temperature effects on stoichiometry and microstructure of nitrogen-rich TiN thin films synthesized via reactive magnetron DC-sputtering", *Journal of Nanomaterials*, 267161,1-9 (2008)
- J43. M.C. Johnson, C.M. Lew, Y. Yan, **J. Wang***, "Hydrophobicity-dependent friction and wear of spin-on zeolite thin films", *Scripta Materialia*, 58, 41-44 (2008)
- J44. Y. Liang, X. Bi, **J. Wang***, "Numerical simulation of laser-induced thin film delamination", *Thin Solid Films*, 516(6), 971-981 (2008)
- J45. M.C. Johnson, Z. Li, C.M. Lew, Y. Yan, **J. Wang***, "Effect of calcination and polycrystallinity on mechanical properties of nanoporous MFI zeolites", *Materials Science and Engineering A*, 456, 58-63 (2007)
- J46. M.C. Johnson, Z. Li, **J. Wang***, Y. Yan, "Mechanical characterization of zeolite low dielectric constant thin films by nanoindentation", *Thin Solid Films*, 515(6), 3164-3170 (2007)
- J47. J. Lian, J. E. Garay, **J. Wang***, "Grain size and grain boundary effect on mechanical behavior of fully stabilized zirconia investigated by nanoindentation", *Scripta Materialia*, 56, 1095-1098 (2007)
- J48. **J. Wang**, "Recent development in thin film adhesion measurement by laser-induced stress waves", *Journal of Experimental Mechanics*, 22 (3-4), 249-257 (2007)
- J49. **J. Wang***, J. Lian, J. R. Greer, W. D. Nix, and K.-S. Kim, "Size effect in contact compression of nano and microscale pyramid Structures", *Acta Materialia*, 54(15), 3973-3982 (2006)
- J50. **J. Wang***, P. Shrotriya, K.-S. Kim, "Surface residual stress measurement using curvature interferometry", *Experimental Mechanics*, 46 (1), 39-46 (2006)

- J51. L. Hu, Z. Li, S. Li, Y. Yan, **J. Wang*** “Interfacial adhesion of nanoporous zeolite thin films”, *Journal of Materials Research*, 21(2), 505-511 (2006)
- J52. Z. Li, M.C. Johnson, M. Sun, E.T. Ryan, D.J. Earl, W. Maichen, J.E. Martin, S. Li, C.M. Lew, **J. Wang**, M.W. Deem, M.E. Davis, Y. Yan, “Mechanical and dielectric properties of pure-silica-zeolite low-k materials”, *Angewandte Chemie International Edition*, 45, 6329-6332 (2006) (**VIP paper**, an honor to less than 5% of the manuscripts)
- J53. L. Hu, X. Zhang, P. Miller, M. Ozka, C. Ozkan, **J. Wang***, “Cell adhesion measurement using laser-induced stress waves”, *Journal of Applied Physics*, 100(7) (2006) (Also **a selected paper** by *Virtual Journal of Biological Physics Research*, 12(9), 2006)
- J54. L. Hu, **J. Wang***, “Pure-shear failure of thin Films by laser-induced shear waves”, *Experimental Mechanics*, 46, 637-645 (2006)
- J55. **J. Wang***, N.R. Sottos, R.L. Weaver, “Tensile and mixed-mode strength of a film-substrate interface under laser induced pulse loading”, *Journal of the Mechanics and Physics of Solids*, 52 (5), 999-1022 (2004)
- J56. **J. Wang**, “Pulsed-laser induced shock wave in fused silica for thin film interfacial testing”, *SPIE*, 5647, 439-448 (2004)
- J57. **J. Wang***, R.L. Weaver, and N.R. Sottos, “Laser-induced decompression shock development in fused silica”, *Journal of Applied Physics*, 93 (12), 9529-9536 (2003)
- J58. **J. Wang***, N.R. Sottos, R.L. Weaver, “Mixed-mode failure of thin films using laser generated shear waves”, *Experimental Mechanics*, 43 (3), 323-330 (2003)
- J59. **J. Wang**, R.L. Weaver, N.R. Sottos, “A parametric study of laser induced thin film spallation”, *Experimental Mechanics*, 42 (1), 74 - 83(2002) (**Best paper of the year award**)
- J60. **J. Wang**, X. Bi, P. Zhou, X. Wu*, “Displacement measurement for large-sized object by Fourier Transformed Profilometry Project Grating method”, *Journal of Experimental Mechanics*, 13 (3), 349-356 (1998)
- J61. Y. Zhao, **J. Wang**, X. Wu, F. Williams, R. Schmidt, “Point-wise and whole-field laser speckle intensity fluctuation measurements applied to botanical specimen”, *Optics and Lasers in Engineering*, 28, 443-456 (1997)

Conference proceedings and other non-journal articles

- C1. Davis C., Kim A., Tipirneni M., Adams S., Grossnickel J., Seebergh J., Larson-Smith K., Gabrys J., Laverty R., Young K., **Wang J**, Ferrante A., Salviato M., “Rain erosion: from multi-physics modeling to efficient & cost-effective certification”, SAMPE Conference Proceedings. Seattle, WA, April 17-20, 2023. Society for the Advancement of Material and Process Engineering – North America. (2023)

- C2. Z. Yang, **J. Wang**, “Temperature and Thickness Dependent Mechanical Properties of Ti/Ni Multilayer Thin Films”, *Proceedings of SEM International Congress on Experimental and Applied Mechanics*, Orlando, FL (2016)
- C3. P. Miller, **J. Wang**, “High strain rate ductile to brittle transition of nanoporous zeolite”, *Proceedings of SEM International Congress on Experimental and Applied Mechanics*, Costa Mesa, CA (2015)
- C4. E. Penilla, F. G. Perez-Gutierrez, G. Aguilar, **J. Wang**, “Optical Properties of Super Stoichiometric TiN_{1+x} Thin Films”, *Memorias Del XVII International Annual De La Somim*, San Luis Potosi, Mexico (2011)
- C5. W.-F. Yeh, **J. Wang**, “A Force Domain Analog-to-Digital Converter Applied in Micro and Nanoscale Tensile Tests”, *Proceedings of SEM International Congress on Experimental and Applied Mechanics* (2011)
- C6. S. Devasia, J. Borgford-Parnell, J.-H. Chung, J. Li, A. Q Shen, N. J. Sniadecki and **J. Wang**. “Integrating Nanodevice Design, Fabrication, and Analysis into the Mechanical Engineering Curriculum”, *Proceedings of the ASME Annual Conference and Exposition*, Paper number AC 2011-224, Vancouver, BC, Canada, June 26-29, 2011
- C7. J. Lian, **J. Wang**, “Microstructure and Mechanical Properties of Dungeness Crab Exoskeletons”, *Conference Proceedings of the Society for Experimental Mechanics Series*, 2011, Volume 9999, 93-99, DOI: 10.1007/978-1-4614-0219-0_12, Denver, CO
- C8. W.-F. Yeh, **J. Wang**, “An innovative design of a MEMS based auto-focusing system”, *Proceedings of ASME International Mechanical Engineering Congress and Exposition*, Seattle, WA (2007)
- C9. J Lian and **J Wang**, “Mechanisms of Dislocation Nucleation and Boundary Effect in Nanoindentation of Small Volume Materials”, *Proceedings of University of Science and Technology of China 50th Anniversary*, Hefei, China (2007)
- C10. J. Lian, J.E. Garay, and **J. Wang**, “Effects of grain size and grain boundary on the mechanical yield behavior of fully stabilized zirconia”, *Proceedings of ASME International Mechanical Engineering Congress and Exposition*, Chicago, IL (2006)
- C11. L. Hu, X. Zhang, P. Miller, M. Ozkan, C. Ozkan, and **J. Wang**, “Investigation of cell-substrate adhesion using laser-induced stress waves”, *Proceedings of ASME International Mechanical Engineering Congress and Exposition*, Chicago, IL (2006)
- C12. M.C. Johnson, Z. Li, Y. Yan, and **J. Wang**, “Determination of the modulus and hardness of spin-on zeolite low-k thin films”, *Materials Research Society Symposium Proceedings*, 880E, BB7.4.1-6, San Francisco, CA (2005)
- C13. L. Hu, **J. Wang**, Z. Li, S. Li, and Y. Yan, “Interfacial adhesion of pure-silica-zeolite low-k thin films”, *Materials Research Society Symposium Proceedings*, 875, O10.5.1-5, San Francisco, CA (2005)
- C14. **J. Wang**, “Pulsed-laser induced shock wave in fused silica for thin film interfacial testing”, *Proc. SPIE*, 5647, 439-448 (2004)

- C15. **J. Wang**, P. Shrotriya, and K.-S. Kim, “Surface residual stress measurement using curvature interferometry”, *Proceedings of SEM International Congress on Experimental and Applied Mechanics*, paper no. 261, Costa Mesa, CA (2004)
- C16. L. Hu, Z. Li, S. Li, Y. Yan, and **J. Wang** “Interfacial adhesion of nanoporous zeolite thin films”, *Proceedings of ASME International Mechanical Engineering Congress and Exposition*, Anaheim, CA (2004)
- C17. **J. Wang**, D. Ward, W.A. Curtin, and K.-S. Kim, “Contact compression of self-assembled nano and micro-scale pyramid structures on Au (100) surfaces”, *Materials Research Society Symposium Proceedings*, Vol. 788, L8.51, Boston, MA (2003)
- C18. H.H. Yu, P. Shrotriya, **J. Wang**, and K.-S. Kim, “Dislocation nucleation and segregation in nano-scale contact of stepped surfaces”, *Materials Research Society Symposium Proceedings*, Vol. 795, U7.9, Boston, MA (2003)
- C19. **J. Wang**, P. Shrotriya, H.H. Yu, and K.-S. Kim, “Experimental measurements of surface residual stress caused by nano scale contacts of rough surfaces”, *Materials Research Society Symposium Proceedings*, Vol. 795, U9.9, Boston, MA (2003)
- C20. **J. Wang**, R.L. Weaver, and N.R. Sottos, “Dynamic failure of thin films using laser induced stress waves”, *Proceedings of SEM International Congress on Experimental and Applied Mechanics*, paper no. 27. Charlotte, NC (2003)
- C21. **J. Wang**, N.R. Sottos, and R.L. Weaver, “Mixed-mode thin film adhesion measurement by laser induced stress waves”, *Proceedings of SEM International Congress on Experimental and Applied Mechanics*, paper No. 25. Milwaukee, WI (2002)
- C22. **J. Wang**, N.R. Sottos, and R.L. Weaver, “A novel technique for mixed-mode thin film adhesion measurement”, *Materials Research Society Symposium Proceedings*, Vol. 750, 255-260, Boston, MA (2002)

Book Chapters

- 1. S. Ren, Z. Shu, J. Pan, **J. Wang**, J Peng, R. Zhao, and D. Gao, “Development of a Novel Electromagnetic Rewarming Technology for the Cryopreservation of Stem Cells with Large Volume”, in Book “Novel Perspectives of Stem Cell Manufacturing and Therapies”, Intechopen Press (2020)
- 2. **J. Wang**, M. Johnson, and Y. Yan, “Mechanical reliability of nanoporous zeolite low-k dielectrics”, chapter in *Handbook of Nanoceramics and Their Based Nanodevices*, Edited by T.Y. Tseng and H.S. Nalwa, American Scientific Publishers (Invited contribution) (2009)
- 3. C.M. Lew, M. Sun, Y. Liu, **J. Wang**, Y. Yan, “Pure-Silica-Zeolite Low-Dielectric Constant Materials”, chapter in *Ordered Porous Solids*, 335-364 (2009)
- 4. C. M. Lew, M. Sun, Y. Liu, **J. Wang**, and Y. Yan, “Pure-Silica-Zeolite Low-Dielectric Constant Materials”, chapter in *Ordered Nanoporous Solids: Recent Advances and Prospects* edited by V. Valtchev, S. Mintova and M. Tsapatsis, Elsevier Science (2008)

Books edited

“Mechanics of Additive and Advanced Manufacturing”, Volume 9, Proceedings of the 2017 SEM Annual Conference & Exposition on Experimental and Applied Mechanics, publisher: Springer, Editors: **Junlan Wang** (lead), Bonnie Antoun, Eric Brown, Weinong Chen, Ioannis Chasiotis, Emily Huskins-Retzlaff, Sharlotte Kramer, Piyush R. Thakre (2017)

Journal issues edited

“Nanomechanics and Nanostructured Multifunctional Materials: Experiments, Theories, and Simulations”, a special issue of *Journal of Nanomaterials*, Vol 2008, Published by Hindawi Publishing Incorporation, Editors: **Junlan Wang** and Jun Lou (Rice University)

Patents and Invention Disclosures

- P1. J. Singh, S. Bassi, M. Tarusna, S. Q. Luong, S. Sexton, S. Meshram, M. Mellor, R. Mamidala, **J. Wang**, D. Arola, “Additive Manufacturing of Metal Lattice Structures for Energy Absorption”, Invention disclosure filed with UW CoMotion, Ref. # 48357 (June 2018)
- P2. W.-F. Yeh and **J. Wang**, “Force-Domain Analog-to-Digital Converter”, disclosed by University of Washington Center for Commercialization, Ref. # 45588 (April 2011), Provisional Patent (Nov. 2011)
- P3. Y. Yan, **J. Wang**, and Y. Liu, “Semi-zeolitic silica (SZS) and their application as low-k materials”, US Patent Application # 12/977,437 (Dec. 2010)
- P4. Y. Yan, **J. Wang**, and G. Chow, “Wear and Corrosion Resistant Zeolite Coating”, US Patent Application # 12/914,854 (Oct. 2010)
- P5. W.-F. Yeh and **J. Wang**, “MAFS: MEMS-based Auto Focusing System”, disclosed by UC Patent Office, UC Case No. 2006-711-1 (2006), Provisional Patent (2008)
- P6. K.-S. Kim, **J. Wang**, and P. Shrotriya, “Interferometric absolute and real-time surface curvature sensor insensitive to tilt, translation and vibration”, disclosed by Brown University Patent Office (2003), Provisional Patent (2004)

Technical reports

- 1. **J. Wang**, N.R. Sottos, and R.L. Weaver, “Thin film adhesion measurement by laser induced stress waves”, TAM report No.1019, Department of Theoretical and Applied Mechanics, University of Illinois (2003)
- 2. **J. Wang**, N.R. Sottos, and R.L. Weaver, “Laser induced thin film spallation”, TAM Report No. 944, Department of Theoretical and Applied Mechanics, University of Illinois (2000)

Invited Talks and Seminars

1. Purdue University Aeronautics and Astronautics Department Seminar, “Experimental Characterization of Thin Films and Coatings: Mechanical and Interfacial Properties”, West Lafayette, IN, April 17, 2023
2. Invited Talk, “Correlation of the Microstructure and Nanomechanical Properties of Additively Manufactured Metals for Aerospace Applications”, SES 2022, Texas A&M University, October 17, 2022
3. Boeing Distinguished Researcher Series Seminar, “Experimental Characterization of Thin Films and Coatings: Mechanical and Interfacial Properties”, July 29, 2021
4. Track Plenary, “Thermo-mechanical Stability of Metallic Multilayer Thin Films”, in track “Deformation, Strength and Resilience of Structures”, Society of Engineering Sciences (SES) Technical Meeting, Washington University in St. Louis, MO, Oct. 2019
5. Invited Speaker at Prager Medal Symposium, “Surface Strengthening of Metallic Multilayers using High Power Pulse Laser Treatment”, 2019 Society of Engineering Sciences (SES) Technical Meeting, Washington University in St. Louis, Oct. 2019
6. Portland State University, Mechanics and Materials Engineering Department Seminar, “Thermo-mechanical Stability of Metallic Multilayer Thin Films”, Portland, OR, Oct. 2017
7. Washington State University, School of Mechanical and Materials Engineering Department Seminar, “Mechanical Reliability of Nanoporous Zeolite Thin films for Low-k and Anti-wear Applications”, Pullman, WA, Nov. 2016
8. University of Washington, Molecular Engineering and Science Institute, Frontiers in Nanotechnology and Molecular Engineering, May 2016
9. University of Washington, Materials Sciences and Engineering Department Seminar, “Mechanical and Functional Properties of Thin Films and Coatings for Electronic and Anti-wear Applications”, Feb. 2016
10. Invited Speaker, “Coupled temperature and layer thickness effect on strengthening mechanism of Ti/Ni multilayer thin films”, in symposium on Mechanical Behavior of Nanostructured Materials, 2015 Society of Engineering Sciences (SES) Technical Meeting, Texas A&M University (Oct. 2015)
11. Keynote Speaker, “Mechanical Characterization of Nanoporous Thin films for Electronics, Energy and Environmental Applications”, in symposium on Mechanics & Characterization of Micro/Nanoporous Materials & Application in Energy & Environment, 2015 Society of Engineering Sciences (SES) Technical Meeting, Texas A&M University (Oct. 2015)
12. Tsinghua University, China, “Mechanical and Interfacial Reliability of Nanoporous Zeolite Thin Films for Low-k and Anti-wear Applications”, July 2015

13. Northwestern University, Chicago, TAM seminar, "Mechanical and Interfacial Reliability of Nanoporous Zeolite Thin Films for Low-k and Anti-wear Applications", March 2015
14. North Carolina State University, Raleigh, NC, "Mechanical and Interfacial Reliability of Nanoporous Zeolite Thin Films for Low-k and Anti-wear Applications", June 2014
15. University of Minnesota, Twin cities, Mechanical Engineering Seminar, "Mechanical and Interfacial Reliability of Nanoporous Zeolite Thin Films for Low-k and Anti-wear Applications", March 2014
16. Shandong University, China, "Mechanical Characterization of Nanoporous Thin Films using Optics and Short Pulse Lasers", July 2012
17. Gordon Research Conference on Nanoporous Materials, "Mechanical Characterization of Nanoporous Zeolite Thin Films", Holderness, NH, August, 2011
18. 2nd International Symposium on Laser Ultrasonics, "Mode-dependent thin film adhesion measurement by laser-induced stress waves", Talence, France, July 2010
19. University of California, Los Angeles, "Mechanical Reliability of Nanoporous Zeolite Thin Films and Coatings for Electronics and Environmental Applications", June 2008
20. Brown University, "Mechanical Reliability of Nanoporous Zeolite Thin Films and Coatings for Electronics and Environmental Applications", February 2008
21. University of Southern California, Mechanical Engineering Department Seminar, "Mode-dependent Thin Film Interfacial Property Measurement by Laser-induced Stress Waves", September 2007
22. University of Science and Technology of China, "Mechanics of Nanoporous Thin Films and Coatings", July 2007
23. Army Research Office, Aberdeen Proving Ground, MD, "High Strain-rate Spallation and Fracture of Tungsten under Laser-induced Stress Waves", September 2007
24. UC Riverside, the 1st College of Engineering Annual TechHorizon Conference, "An Innovative Design of a MEMS based Auto-focusing System", May 2007
25. Aerospace Corporation, EI Segundo, CA, "Laser-induced Stress Waves for Thin Film Adhesion and High Strain-rate Materials Research", September 2006
26. UC Riverside, College of Engineering Alumni Homecoming, "Nano and micromechanics of materials", Jan. 2006
27. The 36th SPIE conference on High Power Lasers, Boulder, CO, "Laser-induced Stress Waves for Thin Film Adhesion Testing", September 2004
28. The 6th Annual Industry Day Research Review, Bourns College of Engineering, University of California, Riverside, "Materials for MEMS and Nano Devices", Oct. 2004
29. NSF workshop on Nanoscale Mechanical Engineering, National Science Foundation, Arlington, VA, "Scale Bridging in Controlled Growth and Property Testing of Nano and Micro Surface Structures", June 2003

30. General Motor R&D Center, Detroit, MI, “Nanomechanics of Thin Solid Surfaces”, July 2003
31. Duke University, “Thin Film Adhesion Measurement by Laser-induced Stress Waves”, March 2003
32. Western Michigan University, Department of Mechanical and Aeronautical Engineering Kalamazoo, MI, “Thin Film Adhesion Measurement Using Laser-induced Stress Waves”, July 2002

Conference presentations

1. Dwayne Arola, Eleftheria Roumeli, Lilo Pozzo, Junlan Wang, “An S-STEM Program to Expand Career Opportunities in Engineering Materials”, TMS Annual Meeting & Exhibition, San Diego, CA, March 2023
2. Allen Kim, Lily Vu, Junlan Wang, “Correlation of Microstructure and Nanomechanical Properties of Additively Manufactured Metals for Aerospace Applications”, Invited Presentation, Society of Engineering Science Annual Technical Meeting (SES 2022), Texas A&M University, Oct. 2022
3. I.G. McDonald, W.M. Moehlenkamp, D. Arola, J. Wang, “Residual Stresses in Magnetron Sputtered Cu/Ni Multilayer Thin Films Measured Using the $\text{Sin}^2\psi$ Method”, *SEM International Congress on Experimental and Applied Mechanics*, Reno, NV, June 2019
4. Nana Yamagata, A. Beausoleil, G. Randall, D. Arola, and J. Wang, "Microstructure and Mechanical Behavior of the Armadillidium Vulgare Cuticle", *SEM International Congress on Experimental and Applied Mechanics*, Reno, NV, June 2019
5. Junlan Wang, “Thermal-mechanical strengthening of metallic multilayer thin films”, Invited Presentation in SES Science Medal Symposium, 55th Annual Technical Meeting of Society of Engineering Science, Madrid, Spain, Oct. 2018
6. Zhou Yang, Junlan Wang, “Pulse-laser induced multilayer surface alloying for enhanced mechanical strength and wear resistance”, *SEM International Congress on Experimental and Applied Mechanics*, Indianapolis, IN (2017)
7. Sandra Murcia, Melicent Stossel, Rishi Pahuja, Timothy Linley, Alex Ossa, Junlan Wang, Dwayne Arola, “The first barrier to penetration of fish scales: structure and properties of the limiting layer”, *TMS Annual Meeting & Exhibition*, San Diego, CA, Feb. 2017
8. Zhou Yang and Junlan Wang, “Temperature and Thickness Dependent Mechanical Properties of Ti/Ni Multilayer Thin Films”, *SEM International Congress on Experimental and Applied Mechanics*, Orlando, FL, June 2016
9. Zhou Yang, Junlan Wang, “Pulse-laser induced multilayer surface alloying for enhanced mechanical strength and wear resistance”, ASME Applied Mechanics and Materials Conference, Seattle, WA, June 2015

10. Mark Miller, Junlan Wang, "Influence of grain size on transition temperature of VO₂ Thin Films", ASME Applied Mechanics and Materials Conference, Seattle, WA, June 2015
11. Phillip Miller, Junlan Wang, "High strain rate ductile to brittle transition of nanoporous zeolite", SEM International Congress on Experimental and Applied Mechanics, Costa Mesa, CA, June 2015
12. Mark Miller, Junlan Wang, "Influence of Na Diffusion on VO₂ Films and Prevention through Mixed-Alkali Effect", ASME IMECE, Montreal, CA, Nov. 2014
13. Gabriel Chow, Mark Miller, Junlan Wang, "Mechanical Characterization of a Nanoporous Low- κ Zeolite Film by Laser-induced Surface Acoustic Waves and Nanoindentation", SEM Annual Conference and Exposition, Greenville, SC, June 2014
14. Zhou Yang, Junlan Wang, "Scale and temperature dependent mechanical behavior of Ti/Ni multilayer thin films", ASME IMECE, San Diego, CA, Nov. 2013
15. Zhou Yang, Junlan Wang, "Size and Orientation Dependent Thermal Strengthening of Ti/Ni Multilayer Thin Films", SES 2013, Brown University, July 2013
16. Mark Miller, Junlan Wang, "Synthesis and Characterization of Nanometric Titanium Oxide Films for Optical Applications, ASME IMECE, Houston, TX, Nov. 2012
17. Junlan Wang, "Size-dependent materials behavior at nano and micrometer scale", SES annual technical meeting, Georgia Tech, October 2012
18. Wu-Feng Yeh and Junlan Wang, "MEMS micromechanical testing using a force-domain analog to digital converter", SEM Annual Conference and Exposition, Anaheim, CA, June 2012
19. Jie Lian and Junlan Wang, "Microstructure and Mechanical Properties of Dungeness Crab Exoskeletons", SEM Annual Conference and Exposition, Mohegan Sun, Uncasville, Connecticut, June 2011
20. Wu-Feng Yeh and Junlan Wang, "A Force Domain Analog-to-Digital Converter Applied in Micro and Nanoscale Tensile Tests", SEM Annual Conference and Exposition, Mohegan Sun, Uncasville, Connecticut, June 2011
21. Jie Lian and Junlan Wang, "Microstructure and Mechanical Properties of Dungeness Crab Exoskeletons", ASME IMECE, Vancouver, BC, Nov. 2010
22. Wu-Feng Yeh and Junlan Wang, "A Force Domain Analog-to-Digital Converter Applied in MEMS Based Tensile Tester", ASME IMECE, Vancouver, BC, Nov. 2010
23. Gabriel Chow, Rajwant Bedi, Yushan Yan and Junlan Wang, "Zeolite as a Environmentally Benign Wear-resistant Coating", ASME IMECE, Vancouver, BC, Nov. 2010
24. Jie Lian, Zhou Yang and Junlan Wang, "Atomistic Simulation of Stress Wave Induced Thin Film Interface Failure", ASME IMECE, Vancouver, BC, Nov. 2010

25. Phillip Miller, Lili Hu and Junlan Wang, "Cell adhesion measurement by laser-induced stress waves: experiment and simulation", ASME IMECE, Vancouver, BC, Nov. 2010
26. Jie Lian and Junlan Wang, "Mechanical behavior of Au-In intermetallics for low temperature solder diffusion bonding", ASME IMECE, Lake Buena Vista, FL, Nov. 2009
27. Jie Lian and Junlan Wang, "Length Scale Effects in Materials Deformation of Nano and Microscale Au Structures", AS ME IMECE, Lake Buena Vista, FL, Nov. 2009
28. Phillip Miller and Junlan Wang, "High strain rate compressive strength of aluminum measured by laser induced stress wave", SEM international congress on Experimental and Applied Mechanics, Albuquerque, NM June 2009
29. Yan Liu, Yushan Yan, and Junlan Wang, "Nanoporous Zeolite Thin Films as Next Generation Low-k Dielectrics", American Society of Mechanical Engineers International Mechanical Engineering Congress and Exposition (ASME IMECE), Boston, MA, Nov. 2008
30. Gabriel Chow, Yushan Yan, and Junlan Wang, "Wear Resistant Zeolite Coatings for Environmental Applications", ASME IMECE, Boston, MA, Nov. 2008
31. Jie Lian, Julia Greer, and Junlan Wang, "Sample Boundary Effect in Nanoindentation of Nano and Microscale Surface Structures", ASME IMECE, Boston, MA, Nov. 2008
32. Junlan Wang and Lili Hu, "Pure-shear Failure of Thin Films by Laser-induced Shear Waves", ASME IMECE, Boston, MA, Nov. 2008
33. Wu-Feng Yeh and Junlan Wang, "MEMS based Auto-focusing System", ASME IMECE, Seattle, WA, Nov 2007
34. Yan Liu, Yushan Yan, and Junlan Wang, "Strengthening Mechanisms of Nanoporous Zeolite Composite Thin Films", ASME IMECE, Seattle, WA, Nov. 2007
35. Jie Lian and Junlan Wang "Sample Boundary Effect in Nanoindentation of Surface Nano and Microstructures", ASME IMECE, Seattle, WA, Nov. 2007
36. Junlan Wang, "Numerical Simulation of Laser-induced Thin Film Spallation", 44th Annual Technical Meeting of Society of Engineering Science (SES), Texas A&M, Oct. 2007
37. Junlan Wang, "High Strain Rate Fracture of Tungsten by Laser-induced Shock Waves", 17th Army Solid Mechanics Symposium, Baltimore, MD, April 2007
38. Yueming Liang, Xiaopeng Bi, and Junlan Wang, "Numerical Simulation of Laser-induced Thin Film Spallation", ASME Mechanics and Materials (McMat) summer meeting, Austin, TX, June 2007
39. Mark Johnson, Chris Lew, Yushan Yan, and Junlan Wang, "Tribological Properties of Nanoporous Zeolite Thin Films", ASME McMat summer meeting, Austin, TX, June 2007
40. Lili Hu, Xuan Zhang, Phillip Miller, Mihri Ozkan, Cengiz Ozkan, Junlan Wang, "Cell Adhesion Measurement by Laser-induced Stress Waves", ASME IMECE, Chicago, IL, Nov. 2006

41. Jie Lian, Javier Garay, and Junlan Wang, "Effect of Grain Size and Grain Boundary on Mechanical Properties of Fully-stabilized Nanocrystalline Zirconia", ASME IMECE, Chicago, IL, Nov. 2006
42. Mark Johnson, Chris Lew, Yushan Yan, and Junlan Wang, "Mechanical Properties of Nanoporous Zeolite Thin Films", ASME IMECE, Chicago, IL, Nov. 2006
43. Junlan Wang, Jie Lian, Julia Greer, William D. Nix, and Kyung-Suk, "Size Effect in Contact Compression of Nano- and Micro-scale Pyramid Structures", ASME IMECE, Chicago, IL, Nov. 2006
44. Donald Ward, Jie Lian, Junlan Wang, Diana Farkas, and William A. Curtin, "Molecular Dynamics Simulation on Contact Compression of Au (114) Pyramids", ASME IMECE, Chicago, IL, Nov. 2006
45. Junlan Wang, Jie Lian, Julia Greer, William D. Nix, and Kyung-Suk, "Size Effect in Contact Compression of Nano- and Micro-scale Pyramid Structures", 16th US National Congress on Theoretical and Applied Mechanics, Colorado, BO, June 2006
46. Lili Hu, Mark Johnson, Yushan Yan, and Junlan Wang, "Mechanics of nanoporous zeolite thin films", ASME IMECE, Orlando, FL, Nov. 2005
47. Junlan Wang, Jie Lian, Julia Greer, William D. Nix, and Kyung-Suk Kim, "Length-scale effect in contact compression of nano and microscale surface pyramid structures", International Mechanical Engineering Congress and Exposition, Orlando, FL, Nov. 2005
48. Lili Hu, Yushan Yan, and Junlan Wang, "Interfacial adhesion of pure-silica-zeolite low-k thin films", Materials Research Society (MRS) Spring Meetings, San Francisco, CA, March 2005
49. Mark Johnson, Zijian Li, Yushan Yan, and Junlan Wang, "Characterization of spin-on zeolite thin films using depth-sensing indentation", MRS Spring Meeting, San Francisco, CA, March 2005
50. Mark Johnson, Zijian Li, Yushan Yan, and Junlan Wang, "Mechanical properties of nanoporous zeolite thin films", TMS (The Minerals, Metals & Materials Society) Annual Meeting and Exposition, San Francisco, CA, Feb. 2005
51. Lili Hu, Zijian Li, Shuang Li, Yushan Yan, and Junlan Wang, "Interfacial adhesion of nanoporous zeolite thin films", *ASME IMECE*, Anaheim, CA, Nov. 2004
52. Junlan Wang, "Pulse laser induced shock wave in fused silica", 36th SPIE Damage Symposium, Optical Materials for High Power Lasers, Boulder, CO, Sept. 2004
53. Junlan Wang, Pranav Shrotriya, and Kyung-Suk Kim, "Surface residual stress measurement using curvature interferometry". SEM international congress on Experimental and Applied Mechanics, Costa Mesa, CA, June 2004
54. Junlan Wang, Pranav Shrotriya, and Kyung-Suk Kim, "Experimental measurements of surface residual stress caused by nano scale contacts of rough surfaces", MRS Fall meeting, Boston, MA, Dec. 2003

55. Junlan Wang, Donald Ward, William A. Curtin, and Kyung-Suk Kim, "Contact compression of self-assembled nano and micro-scale pyramid structures on Au (100) surfaces", MRS Fall Meetings, Boston, MA, Dec. 2003
56. Junlan Wang, Richard L. Weaver, and Nancy R. Sottos, "Dynamic failure of thin films using laser induced stress waves", SEM International Congress on Experimental and Applied Mechanics, Charlotte, NC, June 2003
57. Junlan Wang, Nancy R. Sottos, and Richard L. Weaver, "A novel technique for mixed-mode thin film adhesion measurement", MRS Fall Meetings, Boston, MA, Dec. 2002
58. Junlan Wang, Nancy R. Sottos, and Richard L. Weaver, "Measurement of mixed-mode interfacial failure in thin films using laser induced stress waves", *ASME IMECE*, New Orleans, LA, Nov. 2002
59. Junlan Wang, Nancy R. Sottos, and Richard L. Weaver, "Mixed-mode Failure of thin film by laser induced stress waves", Gordon Research Conference on Thin Films, Colby College Waterville, ME, July 2002
60. Junlan Wang, Nancy R. Sottos, and Richard L. Weaver, "Measurement of mixed-mode interfacial failure in thin films using laser induced stress waves", *the 14th U.S. National Congress of Theoretical and Applied Mechanics*, Virginia Tech, VA , June, 2002
61. Junlan Wang, Nancy R. Sottos, and Richard L. Weaver, "Mixed-mode thin film adhesion measurement by laser induced stress waves", SEM International Congress on Experimental and Applied Mechanics, Milwaukee, WI, June 2002
62. Junlan Wang, Nancy R. Sottos, and Richard L. Weaver, "Laser induced weak shock in fused silica for destructive testing of thin films", *Annual Meeting of Acoustical Society of America*, Chicago, IL, June 2001
63. Junlan Wang, Richard L. Weaver, and Nancy R. Sottos, "A parametric study of laser induced thin film spallation", *the 37th Technical Meeting of Society of Engineering Science*, Columbia, South Carolina, Oct. 2000

GRADUATE STUDENTS ADVISING

Chaired Doctoral Degrees (* female or urm)

Student Name	Dissertation Title	Completed (year)	Current Position (employer)
Allen Kim	Correlation of nanomechanical and microstructural properties of additive manufactured metals	Expected 2026	UW
Kris Gill*	Multifunctional Infra-red Reflective Windshield Coating	Expected 2026	UW

Melicent Stossel*	Development of hard and wear-resistant multilayers through pulse-laser processing	Expected, 2024	UW
Yang Zhou	Strain engineering of monolayer MoS ₂ for enhanced electrocatalysis	2021	Lam Research Fremont, CA
Mark Miller	Energy efficient thermochromic coatings	2016	Intel Inc., Hillsboro, OR
Zhou Yang	Thermomechanical stability and strengthening mechanisms of Ti/Ni multilayer thin films	2016	Applied Materials, Inc., Santa Clara, CA
Phillip Miller	Ultra-high-strain-rate materials study by laser-induced stress waves	2014	Los Alamos National Lab, Los Alamos, NM
Gabriel Chow	Environmentally benign wear and corrosion resistant Zeolite coatings	2014	Triple Ring Technologies, Inc., Newark, CA
Wu-Feng Yeh	MEMS-based Optical Focusing and Micromechanical Testing	2011	Apple Inc. Cupertino, CA
Jie (Jane) Lian*	Nanomechanics of materials: from crystalline solids to biological composites	2010	Apple Inc, San Francisco, CA
Frank MacDonald	Surface acoustic wave based chemical sensing (co-chair with Guanshui Xu)	2010	Naval Surface Warfare Center at Corona, Corona, CA
Yan (Jennie) Liu *	Semi-zeolitic-silica as low-k films (co-chair with Yushan Yan)	2009	Forever missed.
Lili Hu*	Laser-induced stress waves for thin film adhesion and high strain-rate materials research	2007	Hua-Zhong University of Sci. & Tech., Wuhan, China

Chaired MS Degrees (* female or urm)

Student Name	Level of Supervision	Thesis/Project Title	Year (completed)
An Pham*	Thesis	Polymer coating mechanical behavior characterization using nanoindentation	2024 (expected)
Trevor Skinner	Project	Residual stress measurement in 3D printed Inconel 718	2024 (expected)
Victoria Kotwica*	Project	High Temp Adhesive Longer Term Exposure Nanomechanical Characterization	2022

Allen Kim	Thesis	Damage and degradation mechanisms of space exposed materials	2021
Nana Yamagata*	Project	Mechanical and microstructural properties of roly-poly exoskeleton	2021
Kristina Gill*	Thesis	Thermochromic Infrared reflective coatings	2021
Koichi Tanaka	Thesis	Electromechanical Properties of Metal/Polymer Laminate	2020
Achyut Menon	Thesis	Residual stress analysis of Cu/Al multilayer thin films using x-ray diffraction	2020
Chenyangzi Lin*	Thesis	Design and characterization of functionally graded metal-intermetallic nanolaminates	2019
Sameer Meshram	Project	Mechanics of metal-ceramic nanolaminates and 3D printed metal lattice structures	2019
Zhenyu Zhu	Thesis	Metal-intermetallic nanolaminate composites	2018
Ian McDonald	Thesis	Residual stress measurement in Cu/Ni multilayer thin films	2018
Qian Tong	Project	Effect of deposition temperature on structure-mechanical properties of metallic multilayer thin films	2016
Yang Zhou	Thesis	Electronic and mechanical properties of Cu/Ni multilayer thin films	2016
Melicent Stossel*	Project	Superhydrophobic surface by pulsed-laser ablation	2014
Zhou (Joe) Yang	Thesis	Molecular dynamics simulation of acoustic wave motions in thin solid films	2011
Phillip Miller	Project	Numerical simulation of cell-substrate decohesion	2008
Gabriel Chow	Project	Wear-resistant zeolite Coatings	2008
Jie (Jane) Lian*	Project	Size-effect in plastic deformation of nano and microscale materials	2008
Wu-Feng Yeh	Project	MEMS Fabrication	2008
Elias Penilla*	Thesis	An exploration of reactively sputtered nitrogen-rich TiN thin films	2008
Mark Johnson	Thesis	Mechanical reliability of nanoporous zeolite materials	2006

Editorial

1. Associate Editor, *Experimental Mechanics* (2013-present)
2. Associate Editor, *Journal of Applied Mechanics* (2016-2018, 3-yr term)
3. International Advisory Board member, SEM journal *Experimental Techniques* (2016-2019)
4. Lead Editor, Mechanics of Additive and Advanced Manufacturing, *Volume 9, Proceedings of the 2017 SEM Annual Conference & Exposition on Experimental and Applied Mechanics*, published by Springer
5. Advisory Board Member of *ASME Journal of Nanotechnology for Engineering and Medicine* (2011-2015)
6. Editorial Board Member of *International Journal of Theoretical and Applied Multiscale Mechanics* (2010-2017)
7. Guest Editor, special issue of *Journal of Nanomaterials on Nanomechanics and Nanostructured Multifunctional Materials: Experiments, Theories, and Simulations* (2007-08)

National committees

1. Society for Experimental Mechanics Vice President (2023-2024)
2. ASME Materials Division Executive Committee (2008 – 2015, Chair 2014-2015)
3. Chair of SEM Research Committee (2015-17)
4. Chair of ASME Experimental Mechanics Technical Committee (2011-13)
5. Chair of ASME Multifunctional Materials Technical Committee (2006-08)

Conferences

1. Industry Workshop Organizer, “Data-driven High-rate Composites Manufacturing”, (a two-day workshop with participants from 28 leading aerospace and composites industries), Seattle, WA (2022)
2. Member of International Advisory Board, Advanced Materials and Manufacturing Conference, Portland, OR (August 2019)
3. Track co-organizer “Mechanics of Additive and Advanced Manufacturing”, SEM annual conference, Greenville, SC (June 2018)
4. Lead track organizer “Mechanics of Additive and Advanced Manufacturing”, 8 sessions (2 keynotes), SEM annual conference, Indianapolis, IN (June 2017)
5. General Conference Chair, ASME Applied Mechanics and Materials conference, Seattle, WA, June 29-July 1, 2015 (McMat 2015). Conference highlights:
 - 430 technical papers in 79 technical sessions

- 4 plenary Talks (3 academia, 1 industry)
 - 27 keynote presentations
 - Secured NSF travel support for 24 exceptional early career researchers
 - Secured Boeing sponsorship for a University of Washington Banquet at UW Conibear Shell House
6. Track co-organizer, ASME IMECE, Houston, TX (Nov. 2012)
 - Track 3 - Design, Materials and Manufacturing
 - Track 6 -Energy
 - Track 10 - Micro- and Nano-systems Engineering and Packaging
 7. Lead symposium organizer, “Mechanics of Thin Films and Multilayered Structures”, 6 sessions, SES 50th Annual Conference and ASME-AMD Annual Summer Meeting, Brown University, Providence, RI (July 2013)
 8. Topic co-organizer, “Mechanics of Thin Films and Multi-layered Structures”, ASME IMECE, Houston, TX (Nov. 2012)
 9. Topic lead-organizer, “Symposium on Constitutive and Failure Response of Thin Films and Multilayered Structures”, 3 sessions, ASME IMECE, Denver, CO (Nov. 2011)
 10. Topic lead-organizer, “Symposium on Mechanics of Thin Films and Small-scale Structures”, 3 sessions, ASME IMECE, Vancouver, British Columbia (Nov. 2010)
 11. Topic co-organizer, “Symposium on Thin Films and Multi-layered Materials”, 4 sessions, ASME IMECE, Orlando, FL (Nov. 2009)
 12. Topic lead-organizer, “Symposium on Multifunctional Materials and Structures”, 11 sessions, ASME IMECE, Boston, MA (Nov. 2008)
 13. Topic organizer, “Symposium on Nanoporous Thin films and Coatings”, ASME IMECE, Boston, MA (Nov. 2008)
 14. Topic lead-organizer, “Symposium on Multifunctional Materials and Structures”, 5 sessions, ASME IMECE, Seattle, WA (Nov. 2007)
 15. Topic lead-organizer, “Symposium on Nanomechanics and Nanostructured Materials”, 5 sessions, ASME Mechanics and Materials Summer Meeting, Austin, TX (June 2007)
 16. Topic co-organizer, “Symposia on the Fundamentals and Applications of Sensor and Sensing in Engineering and Biology”, 2 sessions, ASME IMECE, Seattle, WA (Nov. 2007)
 17. Topic co-organizer, “Multifunctional Materials and Materials Systems”, 12 sessions, ASME IMECE, Chicago, IL (Nov. 2006)
 18. Session Organizer/Chair, “Nanostructured Materials”, 3 sessions, ASME International Mechanical Engineering Congress and Exposition (IMECE), Orlando, FL (Nov. 2005)
 19. Session Organizer/Chair, “Nanomechanics & MEMS”, China International Conference on Nanoscience and Technology, Beijing, China (June 2005)

National or governmental service

- Regular Proposal Reviewer for NSF Panels (2004-present)
- Member of NSF Engineering Research Center Site Visit Team (2012)

- Ad hoc Proposal reviewer for Army Research Office (2006-present)
- Proposal mail reviewer for Air Force Office of Scientific Research (2006-present)
- Proposal reviewer for US Civilian Research & Development Foundation, Basic Research and Higher Education Program (2006)
- Panelist for University of California Discovery Grant (2006)

Journal Reviewer

Acta Materialia

Experimental Mechanics

Philosophical Magazine Letters

J. American Chemical Society (JACS)

J. Mechanics and Physics of Solids

Applied Physics Letters

Journal of Applied Physics

Journal of Materials Research

Engineering Fracture Mechanics

Philosophical Magazine Letters

Thin Solid Films

J. of Acoustical Society of America

Materials Science and Engineering A

Journal of Composite Materials

Journal of Materials Science

Journal of Applied Mechanics

Mechanics of Materials

Journal of American Ceramic Society

Journal of Electronic Materials

Materials Technology: Advanced
Performance Material