

# Yalin Dong

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## RESEARCH AREAS

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Surface Engineering, Tribology and Lubrication, Manufacturing, Mechanics of Materials

## PROFESSIONAL EXPERIENCE

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Associate Professor, Department of Mechanical Engineering, the University of Akron 2019-Current  
Assistant Professor, Department of Mechanical Engineering, the University of Akron 2013-2019

## EDUCATION

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### Purdue University

Mechanical Engineering Ph.D. | August 2013

Advisors: Drs. Ashlie Martini and Xiulin Ruan

### University of Science and Technology of China

Applied Physics M.S. | July 2008

Applied Physics B.S. | July 2005

Electrical Engineering B.S. | July 2005

Mechanical Engineering (Minor) | July 2005

## TEACHING EXPERIENCE

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### The University of Akron

ME310 Fluid Mechanics I, ME697 Atomistic and multiscale modeling of materials, ME260 Engineering Analysis I

### Purdue University (Lambert Teaching Fellow)

ME309 Fluid Mechanics

## FUNDED PROJECTS (Total Award: \$726,891)

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- Evaluating Rubber Aging on Tire Durability: A Combined Modeling and Experimental Approach. NSF-Center for Tire Research, 09/2018-08/2021, award: \$171,309 (PI Jiahua Zhu, Co-PI **Yalin Dong**).
- Collaborative Research: Feasibility and Fundamentals of Femtosecond-Laser Shock Peening Without Protective Coating in Air Environment. National Science Foundation, 06/2018-05/2021, award: \$188,804 (PI **Yalin Dong**, Co-PI Chang Ye).
- Relating Interfaces to Frictional Losses and Wear. Center for Surface Engineering and Lubrication Research, 05/2015-06/2018, award: \$210,000 (PI **Yalin Dong**, Co-PIs Chang Ye and Gary L Doll).
- Characterization and Molecular Modeling of Filler Polymer Interface. NSF-Center for Tire Research, 09/2014-08/2017, award: \$136,778 (PI **Yalin Dong**, Co-PI Jiahua Zhu).
- Study Mechanisms of Micropitting: Towards a Mechanics-Based Surface Engineering Strategy to Confine Rolling Contact Fatigue. Summer Research Fellowship. 2017, award: \$10,000 (PI **Yalin Dong**).
- Micro Surface Actuator: a Low-Cost, High-Throughput Device for Cell Engineering. Firestone Foundation Fellowship. 2017 award: \$10,000 (PI **Yalin Dong**).

## JOURNAL PUBLICATIONS (59) (Group members in Bold, Corresponding Author\*)

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1. **Jun Liu**, Yizhou Qi, Qunyang Li, Tianying Duan, Wen Yue, Ajay Vadakkepatt, Chang Ye, and **Yalin Dong\***, Vacancy-controlled Friction on 2D Materials: Roughness, Flexibility, and Chemical reaction. *Carbon*. 142, 363–372 (2019).
2. **Jingyi Zhao**, **Zhencheng Ren**, **Hao Zhang**, Guo-Xiang Wang, **Yalin Dong\***, and Chang Ye\*. "Electroplasticity in AZ31B Subjected to Short-duration High-frequency Pulsed Current. *Journal of Applied Physics* 125, 185104 (2019).
3. **Chi Ma**, Sergey Suslov, Chang Ye\*, and **Yalin Dong\***, Improving Plasticity of Metallic Glass by Electropulsing-assisted Surface Severe Plastic Deformation. *Materials & Design* 165,107581 (2019).
4. **Jun Liu**, Sergey Suslov, **Zhencheng Ren**, **Yalin Dong\***, and Chang Ye\*. Microstructure Evolution in Ti64 Subjected to Laser-assisted Ultrasonic Nanocrystal Surface Modification. *International Journal of Machine Tools and Manufacture*. 136, 19 (2019).
5. **Jun Liu**, Sergey Suslov, Azhar Vellore, **Zhencheng Ren**, Auezhan Amanov, Young-Sik Pyun, Ashlie Martini, **Yalin Dong\***, and Chang Ye\*. Surface Nanocrystallization by Ultrasonic Nano-crystal Surface Modification and its Effect on Gas Nitriding of Ti6Al4V Alloy. *Materials Science and Engineering: A* 736, 335 (2018).
6. **Yuan Liang**, Haifeng Qin, **Xiaoning Hou**, Gary L. Doll, Chang Ye\*, and **Yalin Dong\***. Using the two-way shape memory effect of NiTi to control surface texture for cellular mechanotransduction. *Smart Materials and Structures*. 27,

- 075028 (2018)
7. **Xiaoning Hou**, Steven Mankoci, Nicholas Walters, Hongyu Gao, **Ruixia Zhang**, Shengxi Li, Haifeng Qin, **Zhencheng Ren**, Gary L. Doll, Hongbo Cong, Ashlie Martini, Vijay K. Vasudevan, Xianfeng Zhou\*, Nita Sahai, **Yalin Dong**, and C. Ye\*. Hierarchical structures on nickel-titanium fabricated by ultrasonic nanocrystal surface modification. *Materials Science and Engineering: C* 93, 12 (2018).
  8. Yizhou Qi, **Jun Liu**, **Yalin Dong**, Xi-Qiao Feng, and Qunyang Li\*, Impacts of environments on nanoscale wear behavior of graphene: Edge passivation vs. substrate pinning. *Carbon* 139, 59-66 (2018)
  9. **Hao Zhang**, **Jingyi Zhao**, Jun Liu, Haifeng Qin, **Zhencheng Ren**, Gary L. Doll, **Yalin Dong\***, and Chang Ye\*. The effects of electrically-assisted ultrasonic nanocrystal surface modification on 3D-printed Ti-6Al-4V alloy. *Additive Manufacturing*. 22, 60 (2018)
  10. Jingjing Shi, Jonghoon Lee, **Yalin Dong**, Ajit Roy, Timothy S. Fisher, and Xiulin Ruan\* Phonon polarization conversion across dimensionally mismatched interfaces: Carbon-nanotube--graphene junction *Physics Review B* 97, 134309 (2018)
  11. **Ruixia Zhang**, Xianfeng Zhou\*, Hongyu Gao, Steven Mankoci, Yang Liu, Xiahai Sang, Haifeng Qin, **Xiaoning Hou**, **Zhencheng Ren**, Gary L. Doll, Ashlie Martini, **Yalin Dong**, N Sahai, and C. Ye\*. The effects of laser shock peening on the mechanical properties and biomedical behavior of AZ31B magnesium alloy. *Surf. Coatings Technol.*, 339, 48 (2018)
  12. Tuo Ji, **Chi Ma**, Logon Brisbin, **Yalin Dong\***, and **Jiahua Zhu\***. Effect of interface on the mechanical behavior of polybutadiene–silica composites: An experimental and simulation study *J. Appl. Polym. Sci.* 135, 46089 (2018)
  13. **Yuan Liang**, Haifeng Qin, Nitin Mehra, Jiahua Zhu, Zhengnan Yang, Gary L. Doll, Chang Ye\*, and **Yalin Dong\***. Controllable hierarchical micro/nano patterns on biomaterial surfaces fabricated by ultrasonic nanocrystalline surface modification. *Materials & Design* 137, 325 (2018)
  14. **Hao Zhang**, **Zhencheng Ren**, Chang Ye\*, and **Yalin Dong\***. An open-source code to generate carbon nanotube/graphene junctions *Computational Materials Science*. 146, 143 (2018)
  15. Haifeng Qin, **Zhencheng Ren**, **Jingyi Zhao**, Chang Ye, Gary L. Doll\*, and **Yalin Dong\***. Effects of ultrasonic nanocrystal surface modification on the wear and micropitting behavior of bearing steel in boundary lubricated steel-steel contacts. *Wear*. 392, 29 (2017)
  16. **Hao Zhang**, Haifeng Qin, **Zhencheng Ren**, **Jingyi Zhao**, **Xiaoning Hou**, Gary L. Doll, **Yalin Dong\***, and Chang Ye\*. Low-temperature nitriding of nanocrystalline Inconel 718 alloy, *Surface and Coatings Technology*, 33, 10 (2017)
  17. **Jun Liu**, Shuai Zhang, Qunyang Li\*, Xi-Qiao Feng, Zengfeng Di, Chang Ye, and **Yalin Dong\***. Lateral force modulation by moiré superlattice structure: Surfing on periodically undulated graphene sheets *Carbon* 125, 76 (2017)
  18. **Jun Liu**, Sergey Suslov, Shengxi Li, Haifeng Qin, **Zhencheng Ren**, Gary L. Doll, Hongbo Cong, **Yalin Dong**, Chang Ye\* Electrically-Assisted Ultrasonic Nanocrystal Surface Modification of Ti6Al4V Alloy. *Advanced Engineering Materials* 00,1700470 (2017)
  19. **Chi Ma**, Tuo Ji, Chris G. Robertson, R. Rajeshbabu, Jiahua Zhu, and **Yalin Dong\*** Molecular dynamics modeling of tensile behavior of nanoparticle/polymer system *Tire Science and Technology* Vol. 45, No. 3, July-September 2017
  20. Shengxi Li, **Zhencheng Ren**, **Yalin Dong**, Chang Ye, Gang Cheng, Hongbo Cong\*, Enhanced Pitting Corrosion Resistance of 304SS in 3.5wt% NaCl by Ultrasonic Nanocrystal Surface Modification, *Journal of The Electrochemical Society* 164, 682 (2017)
  21. **Chi Ma**, Guo-Xiang Wang, Chang Ye\*, and **Yalin Dong\***. Shock bulk metallic glasses to induce heterogeneity: A molecular dynamics study. *Journal of Applied Physics* 122, 095102 (2017)
  22. **Jingyi Zhao**, Guo-Xiang Wang, **Yalin Dong\***, and Chang Ye\*. Multiscale modeling of electropulsing of nanocrystalline metals. *Journal of Applied Physics* 122, 085101 (2017)
  23. **Chi Ma**, Haifeng Qin, **Zhencheng Ren**, Gary L. Doll, Stephanie C. O’Keeffe, Joseph Stevick, **Yalin Dong**, Bartłomiej Winiarski and Chang Ye\*. Increasing fracture toughness of bulk metallic glasses using ultrasonic nanocrystal surface modification. *Journal of Alloys and Compounds* 718, 246 (2017)
  24. **Jun Liu**, **Zhencheng Ren**, Shengxi Li, **Chi Ma**, Hongbo Cong, Guo-Xiang Wang, **Yalin Dong** and Chang Ye\* Effects of Ultrasonic Nanocrystal Surface Modification on Thermal Oxidation Behavior of Ti6Al4V. *Surface and Coates Technology*. 325, 289-298 (2017)
  25. **Chi Ma**, Mohsen Taheri Andani, Haifeng Qin, Narges Shayesteh Moghaddam, Hamdy Ibrahim, Ahmadreza Jahadakbar, Amirhesam Amerinatanzi, **Zhencheng Ren**, **Hao Zhang**, Gary L Doll, **Yalin Dong**, Mohammad Elahinia, Chang Ye\* Improving surface finish and wear resistance of additive manufactured nickel-titanium by ultrasonic nanocrystal surface modification. *J. Mat. Proc. Tech.* 249, 433-440 (2017)
  26. **Jingyi Zhao**, Guo-Xiang Wang, Chang Ye\*, and **Yalin Dong\*** A numerical model coupling diffusion and grain growth in nanocrystalline materials. *Comp. Mater. Sci.* 136, 243 (2017)
  27. **Hao Zhang**, Richard Chiang, **Haifeng Qin**, **Zhencheng Ren**, **Xiaoning Hou**, Dong Lin, Gary L Doll, Vijay K

- Vasudevan, **Yalin Dong**, and Chang Ye\* The Effects of Ultrasonic Nanocrystal Surface Modification on the Fatigue Performance of 3D-Printed Ti64. *International Journal of Fatigue*. 103, 136-146 (2017)
28. **Chi Ma**, Tuo Ji, Christopher G. Robertson, R. Rajeshbabu, Jiahua Zhu, and **Yalin Dong**\* Molecular insight into the Mullins effect: Irreversible disentanglement of polymer chains revealed by molecular dynamics simulation. *Physical Chemistry Chemical Physics* 19, 19468 (2017)
  29. **Xiaoning Hou**, **Haifeng Qin**, Hongyu Gao, Steven Mankoci, **Ruixia Zhang**, Xianfeng Zhou\*, **Zhencheng Ren**, Gary L Doll, Ashlie Martini, Nita Sahai, **Yalin Dong**, Chang Ye\*. A systematic study of mechanical properties, corrosion behavior and biocompatibility of AZ31B Mg alloy after ultrasonic nanocrystal surface modification. *Mater. Sc. Eng. C* 78, 1061 (2017).
  30. **Jingyi Zhao**, **Yalin Dong**, and Chang Ye\*. Laser Shock Peening Induced Residual Stresses and the Effect on Crack Propagation Behavior. *International Journal of Fatigue* 100, 407–417 (2017)
  31. Tuo Ji, **Chi Ma**, Logan Brisbin, Liwen Mu, Christopher G Robertson, **Yalin Dong**, and Jiahua Zhu\*. Organosilane Grafted Silica: Quantitative Correlation of Microscopic Surface Characters and Macroscopic Surface Properties. *Applied Surface Science* 399, 565 (2017)
  32. Yizhou Qi, **Jun Liu**, Ji Zhang, **Yalin Dong**, and Qunyang Li\* Wear resistance limited by step edge failure: The rise and fall of graphene as an atomically-thin lubricating material. *ACS Applied materials and interfaces*. 9, 1099 (2017)
  33. Abdullahi K Gujba, **Zhencheng Ren**, **Yalin Dong**, Chang Ye, and Mamoun Medraj\*. Effect of ultrasonic nanocrystalline surface modification on the water droplet erosion performance of Ti-6Al-4V, *Surface & Coatings Technology*, 307, 157–170 (2016)
  34. **Jingyi Zhao**, Guo-Xiang. Wang, Chang Ye, and **Yalin Dong**\* Cellular automata modeling of nitriding in nanocrystalline metals, *Comput. Mater. Sci.* 118, 342–352 (2016)
  35. **Zhencheng Ren**, Guo-Xiang Wang, Chang Ye, and **Yalin Dong**\* A Fokker–Planck code for laser plasma interaction in femtosecond-laser shock peening *J. Phys. D: Appl. Phys.* 49, 085204 (2016)
  36. Chang Ye\*, Yang Liu, Xiahao Sang, **Zhencheng Ren**, **Jingyi Zhao**, **Xiaoning Hou**, and **Yalin Dong** Solid state amorphization of nanocrystalline nickel by cryogenic laser shock peening, *Journal of Applied Physics* 118 (13), 134902 (2015)
  37. Xiaoli Hu, Philip Egberts, **Yalin Dong** and Ashlie Martini\*. Molecular dynamics simulation of amplitude modulation atomic force microscopy. *Nanotechnology*, 26, 235705 (2015)
  38. Xinzhou Liu, Zhijiang Ye, **Yalin Dong**, Philip Egberts, Robert W. Carpick, and Ashlie Martini\*. Dynamics of Atomic Stick-Slip Friction Examined with Atomic Force Microscopy and Atomistic Simulations at Overlapping Speeds *Phys. Rev. Lett.* 114, 146102 (2015) *Reported on PennNews*
  39. Jingling Shi, **Yalin Dong**, Timothy Fisher, Xiulin Ruan\* Thermal transport across carbon nanotube-graphene covalent and van der Waals junctions *Journal of Applied Physics* 118 (4), 044302 (2015)
  40. **Yalin Dong**\*, Hongyu Gao, Ashlie Martini\* and Philip Egberts\*. Reinterpretation of velocity-dependent atomic friction: Influence of the inherent instrumental noise in friction force microscopes. *Phys. Rev. E* 90, 012125 (2014)
  41. Hongyu Gao, **Yalin Dong**, and Ashlie Martini\*. Atomistic study of lateral contact stiffness in friction force microscopy. *Tribol. Int.* 74, 57 (2014)
  42. **Yalin Dong**\*. Effects of substrate roughness and phonon-electron coupling on thickness-dependent friction of graphene. *J. Phys. D: Appl. Phys.* 47, 055305 (2014) *Selected as highlights of 2014 on J. Phys. D: Appl. Phys*
  43. **Yalin Dong**\*, Xiawa Wu, and Ashlie Martini\*. Atomic roughness enhanced friction on hydrogenated graphene. *Nanotechnology* 24, 375701 (6pp) (2013) *Highlighted on nanotechweb.org.*
  44. Phillips Egbert, Zhijiang Ye, Xin-Zhou Liu, **Yalin Dong**, Ashlie Martini and Robert W Carpick\*. Environmental dependence of atomic-scale friction at graphite surface steps *Phys. Rev. B* 88, 035409 (9pp) (2013)
  45. **Yalin Dong**, Qunyang Li, and Ashlie Martini\*. Molecular dynamics simulation of atomic friction: A review and guide *J. Vac. Sci. Tech. A* 31, 030801 (24pp) (2013) *Invited Review Paper and Featured on Cover Page. The most downloaded paper of JVSTA in March and April 2013.*
  46. **Yalin Dong**, Xin-Z. Liu, Phillips Egbert, Zhijiang Ye, Robert W Carpick and Ashlie Martini\*. Correlation between Probe Shape and Atomic Friction Peaks at Graphite Step Edges. *Tribol. Lett.* 50, 49(9pp) (2013)
  47. Zhijiang Ye, Chun Tang, **Yalin Dong** and Ashlie Martini\*. Role of wrinkle height in friction variation with number of graphene layers *J. Appl. Phys.* 112, 116102(3pp) (2012)
  48. **Yalin Dong**, Danny Perez, Hongyu Gao and Ashlie Martini\*. Thermal activation in atomic friction: revisiting the theoretical analysis *J. Phys.: Condens. Matter* 24, 265001(7pp) (2012)
  49. **Yalin Dong**, Hongyu Gao and Ashlie Martini\*. Suppression of atomic friction under cryogenic conditions: the role of athermal instability in AFM measurements. *Europhys. Lett.* 98, 16002(6pp) (2012)
  50. Ajay Vadakkepatt, **Yalin Dong**, Seth Lichter and Ashlie Martini\*. Effect of Molecular Structure on Liquid Slip. *Phys. Rev. E* 84, 066311(11) (2011)

51. **Yalin Dong** and Ashlie Martini. Comment on "A note on two-spring Tomlinson model". *Tribol. Lett.* **45**, 225-226 (2011)
52. **Yalin Dong**, Ajay Vadakkepatt and Ashlie Martini\*. Analytical models for atomic friction. *Tribol. Lett.* **44**, 367-386 (2011)
53. Qunyang Li, **Yalin Dong**, Ashlie Martini and Robert W. Carpick\*. Atomic friction modulation on the reconstructed Au (111) surface. *Tribol. Lett.* **43**, 369-378 (2011)
54. **Yalin Dong**, Qunyang Li, Jianguo Wu and Ashlie Martini\*. Friction, slip and structural inhomogeneity of the buried interface. *Modelling Simul. Mater. Sci. Eng.* **19**, 065003(15) (2011)
55. Qunyang Li, **Yalin Dong**, Danny Perez, Ashlie Martini and Robert W. Carpick\*. Speed dependence of atomic stick-slip friction in optimally matched experiments and molecular dynamics simulations. *Phys. Rev. Lett.* **106**, 126101(04) (2011) *Highlighted as editor's suggestion.*
56. **Yalin Dong**, Danny Perez, Arthur F. Voter and Ashlie Martini\*. The roles of statics and dynamics in determining transitions between atomic friction regimes. *Tribol. Lett.* **42**, 99-107 (2011)
57. Danny Perez, **Yalin Dong**, Ashlie Martini and Arthur F. Voter\*. Rate theory description of atomic stick-slip friction. *Phys. Rev. B* **81**, 245415(06) (2010) *Selected in 2011 ADTSC (Associate Directorate for Theory, Simulation, and Computation at Los Alamos National Lab) Science Highlights*
58. Ashlie Martini, **Yalin Dong**, Danny Perez and Arthur F. Voter\*. Low-Speed atomistic simulation of stick-slip friction using parallel replica dynamics. *Tribol. Lett.* **36**, 63-68 (2009)
59. **Yalin Dong**, Bin Zhao and Jian Zheng\*. Numerical investigation of non-local electron transport in Laser-Produced plasmas. *Chin. Phys.* **16**, 3742-3746 (2007)

#### CONFERENCE PROCEEDINGES (13) (Students in Bold)

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1. **Chi Ma, Yalin Dong**, Chang Ye. Improving Surface Finish of 3D-printed Metals by Ultrasonic Nanocrystal Surface Modification - Procedia CIRP, 2016
2. **Jingyi Zhao, Zhencheng Ren**, Yang Liu, Xiahai Sang, **Xiaoning Hou**, Guo-Xiang, Wang, **Yalin Dong** and Chang Ye. Ultrasonic Nanocrystal Surface Modification Assisted Nitriding: An Experimental Study. ASME 2016 11th International Manufacturing Science and Engineering Conference. American Society of Mechanical Engineers, 2016.
3. **Zhencheng Ren, Xiaoning Hou, Yalin Dong**, and Chang Ye. Effect of Nanocrystallization-Assisted Nitriding on the Corrosion Behavior of AISI 4140 Steel. ASME 2016 11th International Manufacturing Science and Engineering Conference. American Society of Mechanical Engineers, 2016.
4. **Ruixia Zhang, Xiaoning Hou**, Xianfeng Zhou, Hongyu Gao, Steven Mankoci, Haifeng Qin, **Zhencheng Ren**, Gary L Doll, Ashlie Martini, **Yalin Dong**, Nita Sahai, and Chang Ye. Effects of Laser Shock Peening on the Wear and Degradation Behaviors of Magnesium Alloys. ASME 2016 11th International Manufacturing Science and Engineering Conference. American Society of Mechanical Engineers, 2016.
5. **Chi Ma, Yalin Dong**, and Chang Ye. Increasing the Fracture Strength and Strain of Bulk Metallic Glasses by Ultrasonic Nano-Crystal Surface Modification. ASME 2016 11th International Manufacturing Science and Engineering Conference. American Society of Mechanical Engineers, 2016.
6. **Xiaoning Hou, Ruixia Zhang, Zhencheng Ren**, Chang Ye, **Yalin Dong**, Haifeng Qin, Gary L Doll, Xianfeng Zhou, Steven Mankoci, and Nita Sahai. Mechanical Properties of Magnesium AZ31B Alloy After Ultrasonic Nanocrystal Surface Modification. ASME 2016 11th International Manufacturing Science and Engineering Conference. American Society of Mechanical Engineers, 2016.
7. **Jingyi Zhao**, Guo-Xiang Wang, Chang Ye, and **Yalin Dong**. Cellular automata modeling of nitriding in nanocrystalline metals. ASME 2015 International Manufacturing Science and Engineering Conference.
8. **Zhencheng Ren**, Chang Ye, and **Yalin Dong**, Molecular Dynamic Simulation of Surface Amorphization of NiTi Under Dynamic Shock Peening. ASME 2015 International Manufacturing Science and Engineering Conference.
9. Jingjing Shi, **Yalin Dong**, Timothy Fisher, and Xiulin Ruan. A Network Model for the Thermal Conductivity of Pillared-Graphene Architectures. In ASME 2014 International Mechanical Engineering Congress and Exposition.
10. Zhijiang Ye, Chun Tang, **Yalin Dong** and Ashlie Martini. Variation of friction with number of graphene layers. *Tribology&Lubrication Technology* 69 (5), 19-21 (2013)
11. **Yalin Dong**, Qunyang Li, Robert W. Carpick and Ashlie Martini. Inertia gap between MD simulations and AFM experiments in study of atomic friction. *Tribology & Lubrication Technology* P17-19 (Feb. 2012)
12. **Yalin Dong**, Ashlie Martini, Qunyang Li and Robert W. Carpick. Atomic friction studied bmodeling theburied interface. *Tribology & Lubrication Technology* P17-19 (May. 2011)
13. Bin Zhao, **Yalin Dong** and Jian Zheng. A Fokker-Planck code for laser-produced plasmas. *Journal of Physics: Conference Series* 112, 022036 (2008)

#### HONORS AND AWARDS

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- Firestone Foundation Fellowship (2017)
- Lambert Teaching Fellowship, School of Mechanical Engineering, Purdue University (2012)
- STLE Chicago Scholarship (2012)
- Poster Competition (3th Place), STLE Annual Conference (2011)
- Poster Competition (2th Place), International Joint Tribology Conference (2010)
- Panasonic Electronics Talent Cultivation Foundation Scholarship in USTC (2003)
- CAST (China Academy of Space Technology) Scholarship in USTC (2002)
- Outstanding Entrance Scholarship in USTC (2001)

#### Group Member Awards

- Xiaoning Hou, The Grotfend Endowed Scholarship (2018)
- Jingyi Zhao, Platinum Award in the Student Poster Competition, STLE Annual Conference (2018)
- Jingyi Zhao, STLE Canton Scholarship (2018)
- Jingyi Zhao, Hao Zhang, Zhencheng Ren Travel Grants MSEC conference (2017)
- Xiaoning Hou, STLE Canton Scholarship (2017)
- Chi Ma, Honorable Mention Student Award at CenTiRe IAB Meeting (2015)

#### UNIVERSITY SERVICE

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- Serve on the Senator's faculty research committee (U Akron) 2017 – 2020
- Serve on the Ohio Super Computer committee (U Akron) 2017 - 2020

#### PROEFESIONAL SERVICE

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- Symposium organizer for Advances in Metal Additive Manufacturing Processes in ASME's International Manufacturing Science and Engineering Conference 2019
- Conference committee for International Conference on Materials Engineering and Applications 2018
- Session organizer 3D Printing and Additive Topic in ASME's chair 3D Printing and Additive Topic in ASME's International Mechanical Engineering Congress and Exposition 2015
- Co-chair of Nanotribology Session in 2012 STLE Annual Conference
- Chair of Nanotribology Session 2010 STLE/ASME Joint International Tribology Conference
- Referees for Army Research Office (ARO) proposal, National Science Foundation (NSF) proposal, National Science Centre Poland proposal, Nature Nanotechnology, Nature Communications, ACS Applied Materials & Interfaces, Carbon, Nanoscale, Langmuir, Journal of Alloys and Compounds, Journal of Physics D: Applied Physics, Journal of Physics: Condensed Matter, Nanotechnology, Tribology Letter, Journal of Applied Physics, Fracture Mechanical Engineering, Computational Material Science, Applied Surface Science, Tribology International, Part J: Journal of Engineering Tribology, Materials & Design, Applied Physics A, Materials Characterization, ASME Journal of Tribology, Journal of Vacuum Science and Technology, Materials Letters, Journal of Materials Science, Journal of the Mechanical Behavior of Biomedical Materials, International Journal of Mechanical Sciences, Advances in Colloid and Interface Science, Composites Part B: Engineering *et al*