

## Publication List

1. Wen Qian, Sonja Gamsjaeger, Eleftherios P. Paschalis, Laura A. Graeff-Armas, Sue P. Bare, Joseph A. Turner, Joan M. Lappe, Robert R. Recker, Mohammed P. Akhter, "Bone Intrinsic Material and Compositional Properties in Postmenopausal Women Diagnosed with Long-Term Type-1 Diabetes", *Bone*, 2023,
2. Kaleb Hood, Wen Qian, Yi Xia, Savannah Krupa, Annie Dao, Sarah Ahmed, Samuel Olson, Nam Nguyen, Joseph A. Turner, Jun Jiao "Self-assembly of exfoliated graphene flakes as anticorrosive coatings for additive manufactured steels", *Results in Surfaces and Interfaces*, 2023, 11, 100116.
3. B Wei, W Wu, A Ghosh, M Kayitmazbatir, A Misra, J Wang. In situ SEM characterization of tensile behavior of nano-fibrous Al-Si and Al-Si-Sr eutectics. *Journal of Materials Science* (2023). <https://doi.org/10.1007/s10853-023-09118-7>
4. A Ghosh, W Wu, BP Sahu, J Wang, A Misra. Enabling plastic co-deformation of disparate phases in a laser rapid solidified Sr-modified Al-Si eutectic through partial-dislocation-mediated-plasticity in Si. *Materials Science & Engineering A* 885, 145648 (2023).
5. WQ Wu, BQ Wei, A Misra, J Wang. Atomistic simulations of nano-fiber-confined metal plasticity. *Scripta Materialia* 235, 115619 (2023).
6. G Yang, DY Xie, Y Nie, X Zhai, N Kedir, W Chen, A.P.S. Gaur, S Das, S Lei, K Fezzaa, J Wang, D Lin. In-Situ X-Ray Imaging High Strain Rate Compression of Laminate Al-Graphene Composite and Mechanical Property Characterization. *JOM* 75, 3105–3110 (2023).
7. BQ Wei, L Li, L Shao, J Wang. Crystalline-Amorphous Nanostructures: Microstructure, Property and Modelling. *Materials* 16(7): 2874 (2023).
8. BQ Wei, WQ Wu, J Wang. In-situ TEM investigation of Helium implantation in Ni-SiOC nanocomposites. *Materials* 16(4): 1357 (2023).
9. BQ Wei, WQ Wu, M Gong, S Yu, S Ni, M Song, J Wang. Influence of Lowering Basal Stacking Fault Energy on Twinning Behaviours. *Acta Materialia* 245, 118637 (2023).
10. J. Wang and A. Misra. Plastic Homogeneity in Nanoscale Heterostructured Binary and Multicomponent Metallic Eutectics: An Overview. *Current Opinion in Solid State & Materials Science* 27, 101055 (2023).
11. BQ Wei, W Wu, J Wang. In-situ investigation of tension-compression asymmetry of Ni-SiOC nanocomposites. *Scripta Materialia* 223, 115103 (2023).
12. Rust, K.; Ni, X.; Tietjen, K.; Beard, K. C., Phylogeny and paleobiogeography of the enigmatic North American primate *Ekgmowechashala* illuminated by new fossils from Nebraska (USA) and Guangxi Zhuang Autonomous Region (China). *Journal of Human Evolution* **2023**, 185, 103452.
13. Thilini K. Ekanayaka, Ökten Üngör, Yuchen Hu, Esha Mishra, Jared P. Phillips, Ashley S. Dale, Saeed Yazdani, Ping Wang, Kayleigh A. McElveen, M. Zaid Zaz, Jian Zhang, Alpha T. N'Diaye, Christoph Klewe, Padraic Shafer, Rebecca Y. Lai, Robert Streubel, Ruihua Cheng, Michael Shatruk, Peter A. Dowben, "Perturbing the spin state and conduction of Fe (II) spin crossover complexes with TCNQ", *Materials Chemistry and Physics* 296 (2023) 127276;

14. P. A. Dowben, Esha Mishra, Thilini K. Ekanayaka and Ruihua Cheng, "Progress towards the competitive multiferroic molecular transistor", 2023 IEEE Nanotechnology Materials and Devices Conference (NMDC), Paestum, Italy, 2023, IEEE ExPlore, pp. 626-627
15. M. Zaid Zaz, Thilini. K. Ekanayaka, Ruihua Cheng, and Peter A. Dowben, "The variability of the conductance changes associated with the change in the spin state in molecular spin crossover complexes", *Magnetochemistry* 9 (2023) 223;
16. Lyubchenko YL. Protein Self-Assembly at the Liquid-Surface Interface. Surface-Mediated Aggregation Catalysis. *J Phys Chem B*. 2023;127(9):1880-9. Epub 2023/02/23. doi: 10.1021/acs.jpcc.2c09029. PubMed PMID: 36812408.
17. Vemulapalli S, Hashemi M, Kolomeisky AB, Lyubchenko YL. Assembly of Synaptic Protein-DNA Complexes: Critical Role of Non-Specific Interactions. *Int J Mol Sci*. 2023;24(12). Epub 2023/06/28. doi: 10.3390/ijms24129800. PubMed PMID: 37372946; PMCID: PMC10298106.
18. Emeigh, C., Pineda, R., Harms, B. & Ryu, S. (2023) The Effects of Balloon Thickness on the Viability of a Microfluidic Cell Compression Device. Proceedings of the ASME 2023 International Mechanical Engineering Congress & Exposition (IMECE2023). DOI: 10.1115/IMECE2023-113642
19. Wang et al. "Physical Vapor Transport Growth of Antiferromagnetic CrCl<sub>3</sub> Flakes Down to Monolayer Thickness", *Advanced Science* **10**, 2203548 (2023).
20. Bagheri, S.; Lipatov, A.; Vorobeva, N. S.; Sinitskii, A., Interlayer Incorporation of A-Elements into MXenes Via Selective Etching of A' from Mn<sup>+1</sup>A<sup>1-x</sup>A<sup>x</sup>C<sub>n</sub> MAX Phases. *ACS Nano* 2023, 17 (19), 18747-18757.
21. Bagheri, S.; Abourahma, J.; Lu, H.; Vorobeva, N. S.; Luo, S.; Gruverman, A.; Sinitskii, A., High-yield fabrication of electromechanical devices based on suspended Ti<sub>3</sub>C<sub>2</sub>T<sub>x</sub> MXene monolayers. *Nanoscale* 2023, 15 (3), 1248–1259.
22. Loes, M. J.; Lipatov, A.; Vorobeva, N. S.; Lu, H.; Abourahma, J.; Muratov, D. S.; Gruverman, A.; Sinitskii, A., Enhanced Photoresponse in Few-Layer SnS<sub>2</sub> Field-Effect Transistors Modified with Methylammonium Lead Iodide Perovskite. *ACS Applied Electronic Materials* 2023, 5 (2), 705-713.
23. Loes, M. J.; Bagheri, S.; Vorobeva, N. S.; Abourahma, J.; Sinitskii, A., Synergistic Effect of TiS<sub>3</sub> and Ti<sub>3</sub>C<sub>2</sub>T<sub>x</sub> MXene for Temperature-Tunable p-/n-Type Gas Sensing. *ACS Applied Nano Materials* 2023, 6 (11), 9226-9235.
24. Lipatov, A.; Abourahma, J.; Viswan, G.; Acharya, K.; Paudel, T. R.; Loes, M. J.; Bagheri, S.; N'Diaye, A. T.; Mishra, E.; Ekanayaka, T. K.; Zaz, M.; Rodenburg, J.; Dhingra, A.; Streubel, R.; Dowben, P. A.; Sinitskii, A., Electronic transport and polarization-dependent photoresponse in few-layered hafnium trisulfide (HfS<sub>3</sub>) nanoribbons. *Journal of Materials Chemistry C* 2023, 11 (28), 9425-9437.
25. Lu, H.; Aramberri, H.; Lipatov, A.; Proksch, R.; Sinitskii, A.; Íñiguez, J.; Gruverman, A., Unraveling Piezoelectricity of Two-Dimensional Ferroelectric Metal 1T'-MoS<sub>2</sub>. *ACS Materials Letters* 2023, 5 (11), 3136-3141.
26. Wang, Y.; Saha, S. K.; Li, T.; Xiong, Y.; Wilkin, K.; Adhikari, A.; Loes, M.; Abourahma, J.; Hong, X.; Adenwalla, S.; Sinitskii, A.; Centurion, M., Ultrafast electron

- diffraction instrument for gas and condensed matter samples. *Rev. Sci. Instrum.* 2023, 94 (5), 053001.
27. Gilbert, S. J.; Li, M.; Chen, J.-S.; Yi, H.; Lipatov, A.; Avila, J.; Sinitskii, A.; Asensio, M. C.; Dowben, P. A.; Yost, A. J., Chiral photocurrent in a Quasi-1D TiS<sub>3</sub> (001) phototransistor. *Journal of Physics: Condensed Matter* 2023, 35 (12), 124003.
  28. Wen Qian, Maxwyll McConnell, Joseph A Turner, Xin Chen, Bai Cui “Graphene Reinforced 316L Stainless Steel Prepared via Laser Powder Bed Fusion”, *Microscopy and Microanalysis*, Vol. 29 (Suppl 1), 1430-31 (2023)
  29. Pineda, R., Ryu, S., Kim, S. & Zhang, C. (2023) A Heterogeneous Hydrogel Brain Phantom for Convection-enhanced Drug Delivery. *Proceedings of the ASME 2023 International Mechanical Engineering Congress & Exposition (IMECE2023)*. DOI: 10.1115/IMECE2023-113654
  30. W. Qian, R. Schmidt, J.A. Turner, S.P. Bare, J.M. Lappe, R.R. Recker, and M.P. Akhter. A pilot study on the nanoscale properties of bone tissue near lacunae in fracturing women. *Bone Reports*. 17, 101604 (2022).
  31. M. Wang, P. Zhang, M. Shamsi, J. Thelen, W. Qian, V. Truong, J. Ma, J. Hu, M. Dickey “Tough and Stretchable Ionogels by In Situ Phase Separation”, *Nature Materials* 21, 359–365 (2022)
  32. W. Qian, S. Sun, T. Johnson, C. Nguyen, S. Ducharme, J. A. Turner, “Integrated analysis of chain orientation induced anisotropy in nanoimprinted PVDF based copolymers”, *Polymer* 239, 124435 (2022).
  33. L. Bai, B. Wei, J. Wang, K. Ming, S. Zheng, J. Wang, High strength and thermal stability of core-shell Fe-SiOC nanocolumnar composites, *Scripta Materialia* 219 (2022) 114885.
  34. K. Ming, Z. Zhu, W. Zhu, B. Fang, B. Wei, P.K. Liaw, X. Wei, J. Wang, S. Zheng, Enhancing strength and ductility via crystalline-amorphous nanoarchitectures in TiZr-based alloys, *Science advances* 8(10) (2022) eabm2884.
  35. B. Wei, W. Wu, M. Nastasi, L. Li, J. Wang, Plastic flow behaviors of high-strength dual-phase Ni-SiOC nanocomposites, *International Journal of Plasticity* 158 (2022) 103431.
  36. B. Wei, D. Xie, W. Wu, L. Shao, J. Wang, Quantifying the Glide Resistance to Dislocations in Proton-Irradiated FeCrAl Alloy, *JOM* 74(11) (2022) 4035-4041.
  37. W. Wu, M. Gong, B. Wei, A. Misra, J. Wang, Atomistic modeling of interface strengthening in Al-Si eutectic alloys, *Acta Materialia* 225 (2022) 117586.
  38. B. Wei, W. Wu, M. Gong, S. Yu, S. Ni, M. Song, J. Wang, Influence of lowering basal stacking fault energy on twinning behaviours, *Acta Materialia* 245 (2023) 118637.
  39. B. Wei, W. Wu, J. Wang, In-situ investigation of tension-compression asymmetry of Ni-SiOC nanocomposites, *Scripta Materialia* 223 (2023) 115103.
  40. B. Wei, W. Wu, J. Wang, In-Situ TEM Investigation of Helium Implantation in Ni-SiOC Nanocomposites, *Materials* 16(4) (2023) 1357.
  41. M Rakib, Y Baddam, B Subeshan, AB Sengul, E Asmatulu, Fabrication of spirulina based activated carbons for wastewater treatment, *Environmental Technology*, 1-15, 2022

42. AO Ijaola, DO Akamo, AM Adekanmi, Q Saberi, D Koken, E Asmatulu, Superhydrophobic and self-cleaning electrospun microfibers from recycled Styrofoam, *Results in Surfaces and Interfaces* 9, 100086, 2022
43. MN Uddin, MF Rab, AKMN Islam, E Asmatulu, MM Rahman, R Asmatulu, Nanostructured hybrid hydrogels for solar-driven clean water harvesting from the atmosphere, *Materials* 15 (21), 7538
44. Wen Qian, Jesse Kuebler, Lucia Fernandez-Ballester, Joseph A. Turner "Integrated microscopic analysis of lamellar structure in isotactic polypropylene spherulite at nanoscale", *Microscopy and Microanalysis*, Vol. 27 (Suppl 1), 230-31 (2021)
45. Xu, Shun, and Jian Wang. "Deformation twins stimulated by {112<sup>-</sup> 2} twinning in adjacent grain in titanium." *Acta Materialia* 229 (2022): 117805.
46. Wu, W.; Gong, M.; Wei, B.; Misra, A.; Wang, J., Atomistic modeling of interface strengthening in Al-Si eutectic alloys. *Acta Materialia* 2022, 225, 117586.
47. Ming, K.; Zhu, Z.; Zhu, W.; Fang, B.; Wei, B.; Liaw Peter, K.; Wei, X.; Wang, J.; Zheng, S., Enhancing strength and ductility via crystalline-amorphous nanoarchitectures in TiZr-based alloys. *Science Advances* 2022, 8 (10), 2884.
48. Piening, L. M., Lillyman, D. J., Lee, F. S., Lozano, A. M., Miles, J. R., & Wachs, R. A. (2022). Injectable decellularized nucleus pulposus tissue exhibits neuroinhibitory properties. *JOR Spine*, e1187.
49. Smoqi, Z.; Gaikwad, A.; Bevans, B.; Kobir, M. H.; Craig, J.; Abul-Haj, A.; Peralta, A.; Rao, P., Monitoring and prediction of porosity in laser powder bed fusion using physics-informed meltpool signatures and machine learning. *Journal of Materials Processing Technology* 2022, 304, 117550
50. Smoqi, Z.; Bevans, B. D.; Gaikwad, A.; Craig, J.; Abul-Haj, A.; Roeder, B.; Macy, B.; Shield, J. E.; Rao, P., Closed-loop control of meltpool temperature in directed energy deposition. *Materials & Design* 2022, 215, 110508.
51. McManigal, M.; Wilson, R.; McManigal, P.; Beran, B.; Wellsandt, E.; Markvicka, E. J. In Fully Untethered and Stretchable Wearable Electronic Bandage for Measuring Knee Motion, 2022 Design of Medical Devices Conference, 2022.
52. Kraiem, N.; Constantin, L.; Mao, A.; Wang, F.; Cui, B.; Silvain, J.-F.; Lu, Y. F., Influence of aluminum addition on the laser powder bed fusion of copper-aluminum mixtures. *Additive Manufacturing Letters* 2022, 3, 100080.
53. Emeigh, C.; Zhang, H.; Ryu, S. In Fabrication of a Microfluidic Cell Compressor Using a 3D-Printed Mold, ASME 2022 Fluids Engineering Division Summer Meeting, 2022.
54. Wang, J.; Ahmadi, Z.; Lujan, D.; Choe, J.; Taniguchi, T.; Watanabe, K.; Li, X.; Shield, J. E.; Hong, X., Physical Vapor Transport Growth of Antiferromagnetic CrCl<sub>3</sub> Flakes Down to Monolayer Thickness. *Advanced Science* 2023, 10 (3), 2203548.
55. Yoo, Y.; Yan, X.; Wang, F.; Zhu, Q.; Lu, Y.; Cui, B., Mechanisms of Mitigating Chloride-Induced Stress Corrosion Cracking of Austenitic Steels by Laser Shock Peening. *Corrosion* 2022, 78 (6), 494-502
56. Vemulapalli, S.; Hashemi, M.; Lyubchenko, Y.L. Site-Search Process for Synaptic Protein-DNA Complexes. *Int. J. Mol. Sci.* 2022, 23, 212.

57. Sun, Z.; Stormberg, T.; Filliaux, S.; Lyubchenko, Y.L. Three-Way DNA Junction as an End Label for DNA in Atomic Force Microscopy Studies. *Int. J. Mol. Sci.* 2022, 23, 11404.
58. Zagorski, K.; Stormberg, T.; Hashemi, M.; Kolomeisky, A.B.; Lyubchenko, Y.L. Nanorings to Probe Mechanical Stress of Single-Stranded DNA Mediated by the DNA Duplex. *Int. J. Mol. Sci.* 2022, 23, 12916.
59. Ekanayaka, T. K.; Richmond, D.; McCormick, M.; Nandyala, S. R.; Helfrich, H. C.; Sinitskii, A.; Pikal, J. M.; Ilie, C. C.; Dowben, P. A.; Yost, A. J., Surface Versus Bulk State Transitions in Inkjet-Printed All-Inorganic Perovskite Quantum Dot Films. *Nanomaterials* 2022, 12 (22), 3956.
60. Mishra, E.; Ekanayaka, T. K.; McElveen, K. A.; Lai, R. Y.; Dowben, P. A., Evidence for long drift carrier lifetimes in [Fe(Htrz)<sub>2</sub>(trz)](BF<sub>4</sub>) plus polyaniline composites. *Organic Electronics* 2022, 105, 106516
61. Mishra, E.; Ekanayaka, T. K.; Dowben, P. A., Voltage controlled bio-organic inverse phototransistor. *Biointerphases* 2022, 17 (2), 021003.
62. Frey, S. T.; Haque, A. B. M. T.; Tutika, R.; Krotz, E. V.; Lee, C.; Haverkamp, C. B.; Markvicka, E. J.; Bartlett, M. D., Octopus-inspired adhesive skins for intelligent and rapidly switchable underwater adhesion. *Science Advances* 8 (28), eabq1905.
63. Finnegan, J.; Peterkin, B.; Han, H.-C.; Yentes, J. M.; Rennard, S. I.; Markvicka, E. J., Wireless, Battery Free Wearable Electronic Nose. 2022.
64. McManigal, M.; Wilson, R.; McManigal, P.; Beran, B.; Wellsandt, E.; Markvicka, E. J., Fully Untethered and Stretchable Wearable Electronic Bandage for Measuring Knee Motion. 2022.
65. Bouzid, T.; Esfahani, A. M.; Safa, B. T.; Kim, E.; Saraswathi, V.; Kim, J. K.; Yang, R.; Lim, J. Y., Rho/ROCK mechanosensor in adipocyte stiffness and traction force generation. *Biochemical and Biophysical Research Communications* 2022, 606, 42-48.
66. Qian, W.; Li, W.; Nguyen, C.; Johnson, T. J.; Turner, J. A., Quantitative nanoscale measurements of the thermomechanical properties of poly-ether-ether-ketone (PEEK). *Journal of Polymer Science* 2020, 58 (11), 1544-1552. Cover Article
67. Guivier, M.; Qian, W.; Turner, J. A.; Esposito, A., High-resolution Imaging of Spherulitic Structures in PLLA and PDLA Solvent-cast Films. *Microscopy and Microanalysis* 2020, 26 (S2), 2388-2390.
68. Kilic, U., Hilfiker, M., Ruder, A., Feder, R., Schubert, E., Schubert, M. and Argyropoulos, C., Broadband enhanced chirality with tunable response in hybrid plasmonic helical metamaterials. *Advanced Functional Materials*, 2021, 2010329.
69. Keramati, S.; Passian, A.; Khullar, V.; Beck, J.; Uiterwaal, C.; Batelaan, H., Surface plasmon enhanced fast electron emission from metallised fibre optic nanotips. *New Journal of Physics* 2020, 22 (8), 083069.
70. Keramati, S.; Passian, A.; Khullar, V.; Batelaan, H., Photofield electron emission from an optical fiber nanotip. *Applied Physics Letters* 2020, 117 (6), 061102.
71. Ming, K.; Lu, W.; Li, Z.; Bi, X.; Wang, J., Amorphous bands induced by low temperature tension in a non-equiatomic CrMnFeCoNi alloy. *Acta Materialia* 2020, 188, 354-365.

72. Xie, D.; Wei, B.; Wu, W.; Wang, J., Crystallographic Orientation Dependence of Mechanical Responses of FeCrAl Micropillars. *Crystals* 2020, 10 (10).
73. Ming, K.; Gu, C.; Su, Q.; Xie, D.; Wu, Y.; Wang, Y.; Shao, L.; Nastasi, M.; Wang, J., Strength and plasticity of amorphous ceramics with self-patterned nano-heterogeneities. *International Journal of Plasticity* 2020, 134, 102837.
74. Xu, S.; Xie, D.; Liu, G.; Ming, K.; Wang, J., Quantifying the resistance to dislocation glide in single phase FeCrAl alloy. *International Journal of Plasticity* 2020, 132, 102770.
75. Azadehranjbar, S.; Wei, B.; Xie, D.; Ming, K.; Wang, J.; Shield, J. E., Strength and plasticity of lamellar vs. fibrous eutectic Mg-Al nanocomposites: An in-situ microcompression study. *Acta Materialia* 2021, 206, 116624.
76. Wang, S. J.; Xie, D. Y.; Wang, J.; Misra, A., Deformation behavior of nanoscale Al–Al<sub>2</sub>Cu eutectics studied by in situ micropillar compression. *Materials Science and Engineering: A* 2021, 800, 140311.
77. Zamani, E.; Johnson, T. J.; Chatterjee, S.; Immethun, C.; Sarella, A.; Saha, R.; Dishari, S. K., Cationic  $\pi$ -Conjugated Polyelectrolyte Shows Antimicrobial Activity by Causing Lipid Loss and Lowering Elastic Modulus of Bacteria. *ACS Applied Materials & Interfaces* 2020, 12 (44), 49346-49361.
78. Wang, F.; Yan, X.; Wang, T.; Wu, Y.; Shao, L.; Nastasi, M.; Lu, Y.; Cui, B., Irradiation damage in (Zr<sub>0.25</sub>Ta<sub>0.25</sub>Nb<sub>0.25</sub>Ti<sub>0.25</sub>)C high-entropy carbide ceramics. *Acta Materialia* 2020, 195, 739-749.
79. Wang, F.; Zhang, X.; Yan, X.; Lu, Y.; Nastasi, M.; Chen, Y.; Cui, B., The effect of submicron grain size on thermal stability and mechanical properties of high-entropy carbide ceramics. *Journal of the American Ceramic Society* 2020, 103 (8), 4463-4472.
80. Zhang, X.; Khedmati, M.; Kim, Y.-R.; Shin, H.-S.; Lee, J.; Kim, Y.-J.; Cui, B., Microstructure evolution during spark plasma sintering of FJS-1 lunar soil simulant. *Journal of the American Ceramic Society* 2020, 103 (2), 899-911.
81. Reicks, A.; Tsubaki, A.; Anderson, M.; Wieseler, J.; Khorashad, L. K.; Shield, J. E.; Gogos, G.; Alexander, D.; Argyropoulos, C.; Zuhlke, C., Near-unity broadband omnidirectional emissivity via femtosecond laser surface processing. *Communications Materials* 2021, 2 (1), 36.
82. Alfred, T.; Mark, A.; Andrew, R.; Jeffrey, E. S.; Dennis, R. A.; Craig, A. Z. In Multi-material, multi-layer femtosecond laser surface processing, *Proc.SPIE*, 2021.
83. Abarghani, A., Ostadhassan, M., Hackley, P.C., Pomerantz, A.E. and Nejati, S. A Chemo-mechanical Snapshot of In-situ Conversion of Kerogen to Petroleum. *Geochimica et Cosmochimica Acta*, 2020 273, pp. 37-50.
84. Abarghani, A., Gentzis, T., Shokouhimehr, M., Liu, B. and Ostadhassan, M. Chemical heterogeneity of organic matter at nanoscale by AFM-based IR spectroscopy. *Fuel*, 2020, 261, p.116454.
85. Soodabeh Azadehranjbar, Jeffrey Shield, "Multiple origins of anomalous eutectic microstructure formation in rapidly solidified Mg-Al alloys". *Materialia*, DOI: 10.1016/j.mtla.2020.100625, 2020

86. Wen Qian, Shuo Sun, Charles Nguyen, Steve Ducharme, Joseph A. Turner, "Correlation Microanalysis of Localized Molecular Structure and Nanomechanical Property of PVDF Based Copolymer", *Microscopy and Microanalysis*, Vol. 25 (Suppl. 2), 2090, 2019
87. Xueqi Zhao, Meixiang Wang, Yongmei Chen, Ziguang Chen, Tao Suo, Wen Qian, Jian Hu, Xiaoping Song, Wai-Ning Mei, Renat Sabirianov, and Li Tan, "Puncture-Resistant Hydrogel: Placing Molecular Complexes Along Phase Boundaries", *ACS Applied Materials & Interfaces*, 11, 19421, 2019
88. Romereim, S. M., Johnston, C. A., Redwine, A. L., & Wachs, R. A. Development of an In Vitro Intervertebral Disc Innervation Model to Screen Neuroinhibitory Biomaterials. *Journal of Orthopaedic Research*. 2019 doi:10.1002/jor.24557
89. Xueliang Yan, Fei Wang, Khalid Hattar, Michael Nastasi, Bai Cui. Novel amorphous SiOC dispersion-strengthened austenitic steels. *Materialia*, 2019, 6, 100345-100353.
90. Xueliang Yan, Xiang Zhang, Fei Wang, Taylor Stockdale, Yuris Dzenis, Michael Nastasi, Bai Cui. Fabrication of ODS austenitic steels and CoCrFeNi high-entropy alloys by spark plasma sintering for nuclear energy applications. *JOM*, 2019, 71 (8), 2856-2867.
91. M Sealy, H Hadidi, C Kanger, X Yan, B Cui, J McGeough. Global integrity in 420 stainless steel by asynchronous laser processing. *CIRP Annals Manufacturing Technology*, 2019, 68(1), 189-192.
92. Fei Wang, Xueliang Yan, Chenfei Zhang, Leimin Deng, Yongfeng Lu, Michael Nastasi, Bai Cui. Localized plasticity in silicon carbide ceramics induced by laser shock processing. *Materialia*, 2019, 6, 100265.
93. Yuanjun Fan, Yifan Huang, Bai Cui, Qin Zhou. Graphene coating on nickel as effective barriers against hydrogen embrittlement. *Surface and Coatings Technology*, 2019, 374 (25), 610-616.
94. Fei Wang, Xueliang Yan, Lin Shao, Michael Nastasi, Bai Cui. Irradiation damage behavior in novel high-entropy carbide ceramics. *Transactions of the American Nuclear Society*, 2019, 118, 1459. *Transactions*, 2019, 120 (1), 327
95. Dan Li, Wen Qian, Jingfeng Song, Shuo Sun, "Localized Characterization of Poly (vinylidene fluoride) Thin Film Structure By AFM-IR Spectroscopy", *Advances in Tissue Engineering & Regenerative Medicine*, Open Access, 4(2), 40, 2018
96. W. Qian, S. Sun, J. Song, C. Nguyen, S. Ducharme, J. A. Turner, "Focused Electron-Beam-Induced Deposition for Fabrication of Highly Durable Conductive and Sensitive AFM-IR Probe," *Nanotechnology* 29, article 335702 (2018).
97. W. Qian, S. Sun, C. Nguyen, W. Li, S. Ducharme, J. A. Turner, "Complementary microscopy techniques applied for characterizing the localized nanoscale structure of poly(vinylidene fluoride)", *Microscopy and Microanalysis* Vol. 24 (Suppl. 1), 2040 (2018).
98. Yan, X. L.; Wang, F.; Deng, L. M.; Zhang, C. F.; Lu, Y. F.; Nastasi, M.; Kirk, M. A.; Li, M. M.; Cui, B., Effect of Laser Shock Peening on the Microstructures and Properties of Oxide-Dispersion-Strengthened Austenitic Steels. *Adv. Eng. Mater.* 2018, 20 (3).
99. Wang, F.; Zhang, C.; Yan, X.; Deng, L.; Lu, Y.; Nastasi, M.; Cui, B., Microstructure-property relation in alumina ceramics during post-annealing process after laser shock processing. *Journal of the American Ceramic Society* 2018, 1-9

100. Lee, D.; Golden, K.; Rahman, M. M.; Moran, A.; Gonzalez, B.; Ryu, S., Fabrication of Hydrogels with a Stiffness Gradient Using Limited Mixing in the Hele-Shaw Geometry. *Experimental Mechanics* 2018.
101. Lee, D.; Erickson, A.; You, T.; Dudley, A. T.; Ryu, S., Pneumatic microfluidic cell compression device for high-throughput study of chondrocyte mechanobiology. *Lab Chip* 2018, 18 (14), 2077-2086.
102. Yan, X. L.; Constantin, L.; Lu, Y. F.; Silvain, J. F.; Nastasi, M.; Cui, B., (Hf<sub>0.2</sub>Zr<sub>0.2</sub>Ta<sub>0.2</sub>Nb<sub>0.2</sub>Ti<sub>0.2</sub>)C high-entropy ceramics with low thermal conductivity. *Journal of the American Ceramic Society* 2018, 101 (10), 4486-4491.
103. Lee, D. & Ryu, S. A Validation Study of the Repeatability and Accuracy of AFM Indentation Using Polyacrylamide Gels and Colloidal Probes. *J. Biomechanical Engineering* 139, 044502 (2017)
104. E. Peng, A. Tsubaki, C.A. Zuhlke, M. Wang, R. Bell, M.J. Lucis, T.P. Anderson, D.R. Alexander, G. Gogos and J.E. Shield, "Micro/Nanostructures formation by femtosecond laser surface processing on amorphous and polycrystalline Ni<sub>60</sub>Nb<sub>40</sub>," *Appl. Surf. Sci.* 396, 1170 (2017).
105. A.T. Tsubaki, M.A. Koten, M.J. Lucis, C.A. Zuhlke, N.A. Ianno, J.E. Shield and D.A. Alexander, "Formation of aggregated nanoparticle spheres through femtosecond laser surface processing," *Appl. Surf. Sci.* 419, 778 (2017).
106. Jingjing Zhao, Xiaopeng Zheng, Yehao Deng, Tao Li, Yuchuan Shao, Alexei Gruverman, Jeffrey Shield and Jinsong Huang, "Is Cu a stable electrode material in hybrid perovskite solar cells for a 30-year lifetime?", *Energy Environ. Sci.* 9, 3650 (2016).
107. Wen Qian, Charles Nguyen, Joseph A. Turner, Dalie Liu, "Electron-Beam-Induced Deposition of Carbon Nanorod via Spot Mode as Highly Stable and Sensitive AFM Probe Tip", *Microscopy and Microanalysis*, Vol. 23 (Suppl. 1), 1736, (2017).
108. E. Rezaei and J. A. Turner, "Contact resonance AFM to quantify the in-plane and out-of-plane loss tangent of polymers simultaneously," *Appl. Phys. Letters*, 110, article 101902 (4 pages) (2017).
109. A. P. Arguelles, C. M. Kube, P. Hu, and J. A. Turner, "Mode-converted ultrasonic scattering in polycrystals with elongated grains," *J. Acoust. Soc. Am.* 140, 1570-1580 (2016).
110. Peng, E.; Tsubaki, A.; Zuhlke, C. A.; Wang, M. Y.; Bell, R.; Lucis, M. J.; Anderson, T. P.; Alexander, D. R.; Gogos, G.; Shield, J. E., Experimental explanation of the formation mechanism of surface mound-structures by femtosecond laser on polycrystalline Ni<sub>60</sub>Nb<sub>40</sub>. *Applied Physics Letters* 2016, 108 (3).
111. Rajapitamahuni, A.; Zhang, L.; Koten, M. A.; Singh, V. R.; Burton, J. D.; Tsymbal, E. Y.; Shield, J. E.; Hong, X., Giant Enhancement of Magnetic Anisotropy in Ultrathin Manganite Films via Nanoscale 1D Periodic Depth Modulation. *Physical Review Letters* 2016, 116 (18).
112. Kruse, C.; Tsubaki, A.; Zuhlke, C.; Anderson, T.; Alexander, D.; Gogos, G.; Ndao, S., Secondary pool boiling effects. *Applied Physics Letters* 2016, 108 (5).



113. Hassebrook, A.; Kruse, C.; Wilson, C.; Anderson, T.; Zuhlke, C.; Alexander, D.; Gogos, G.; Ndao, S., Effects of Droplet Diameter and Fluid Properties on the Leidenfrost Temperature of Polished and Micro/Nanostructured Surfaces. *Journal of Heat Transfer-Transactions of the Asme* 2016, 138 (5).
114. Bowen, J. J.; Taylor, J. M.; Jurich, C. P.; Morin, S. A., Stretchable Chemical Patterns for the Assembly and Manipulation of Arrays of Microdroplets with Lensing and Micromixing Functionality. *Advanced Functional Materials* 2015, 25 (34), 5520-5528.
115. Kruse, C. M.; Anderson, T.; Wilson, C.; Zuhlke, C.; Alexander, D.; Gogos, G.; Ndao, S., Enhanced pool-boiling heat transfer and critical heat flux on femtosecond laser processed stainless steel surfaces. *International Journal of Heat and Mass Transfer* 2015, 82, 109-116.
116. Kruse, C.; Somanas, I.; Anderson, T.; Wilson, C.; Zuhlke, C.; Alexander, D.; Gogos, G.; Ndao, S., Self-propelled droplets on heated surfaces with angled self-assembled micro/nanostructures. *Microfluidics and Nanofluidics* 2015, 18 (5-6), 1417-1424.
117. Zhang, L.; Chen, X. G.; Gardner, H. J.; Koten, M. A.; Shield, J. E.; Hong, X., Effect of strain on ferroelectric field effect in strongly correlated oxide  $\text{Sm}_{0.5}\text{Nd}_{0.5}\text{NiO}_3$ . *Applied Physics Letters* 2015, 107 (15).