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Ceramics

2021

- 1 [0] Bhaduri, A., Gupta, A., Olivier, A., Graham-Brady, L. (2021) "An efficient optimization based microstructure reconstruction approach with multiple loss functions." *Computational Materials Science*, 199,
- 2 [2] Bhattacharjee A., Bhaduri A., Hurley R.C., Graham-Brady L. (2021) "Failure modeling and sensitivity analysis of ceramics under impact." *Journal of Applied Mechanics, Transactions ASME*, 88(5), doi: <https://doi.org/10.1115/1.4049807>.
- 3 [0] Christopher J Marvel, Qirong Yang, Scott D Walck, Kelvin Y Xie, Kristopher D Behler, Jerry C LaSalvia, Masashi Watanabe, Richard A Haber, Martin P Harmer (2021) "Applications of analytical electron microscopy to guide the design of boron carbide." *Journal of the American Ceramic Society*,
- 4 [1] Gupta A., Crum R.S., Zhai C., Ramesh K.T., Hurley R.C. (2021) "Quantifying particle-scale 3D granular dynamics during rapid compaction from time-resolved in situ 2D x-ray images." *Journal of Applied Physics*, 129(22), doi: <https://doi.org/10.1063/5.0051642>.
- 5 [0] Hwang C., Du J., Yang Q., Celik A.M., Christian K., An Q., Schaefer M.C., Xie K.Y., LaSalvia J.C., Hemker K.J., Goddard W.A., Haber R.A. (2021) "Addressing amorphization and transgranular fracture of B4C through Si doping and TiB2 microparticle reinforcing." *Journal of the American Ceramic Society*, doi: <https://doi.org/10.1111/jace.18223>.
- 6 [0] Igor Petruscha, Chawon Hwang, Tatiana Prikhna, Metin Örneç, Dexin Zhao, Kelvin Y. Xie, Richard A. Haber, Myroslav Karpets, Semyon Ponomaryov, Sergey Dub, Viktor Moshchil (2021) "A Novel Route to Superhard Nanocrystalline Cubic Boron Nitride: Emulsion Detonation and High-Pressure High-Temperature Transformation-Assisted Consolidation." *J. Eur. Ceram. Soc.*,
- 7 [0] J. Du, K. Christian, Q. Yang, C. Hwang, R. A. Haber (2021) "Spark plasma sintering: rapid reaction and densification of silicon/boron co-doped boron carbide and its composite with titanium boride for improved hardness and toughness." *Advanced powder materials*,
- 8 [1] Li W., Ramesh K.T. (2021) "A finite deformation framework for mechanism-based constitutive models of the dynamic behavior of brittle materials." *Journal of the Mechanics and Physics of Solids*, 155, doi: <https://doi.org/10.1016/j.jmps.2021.104518>.
- 9 [0] McCauley, J.W. (2021) "A brief review of ceramic protection materials: Focus on boron carbide crystal physics and characteristics in a material by design approach." *Journal of the American Ceramic Society*,
- 10 [0] Olivier, A., Shields, M., Graham-Brady, L. (2021) "Probabilistic neural networks for uncertainty quantification in data-based materials modeling." *Computer Methods in Applied Mechanics and Engineering*, 386,
- 11 [0] Ramesh K.T., Graham-Brady L., Goddard W.A., Hurley R.C., Robbins M., Tonge A.L., Bhattacharjee A., Clemmer J.T., Zeng Q., Li W., Shen Y., An Q., Mitra N. (2021) "Models for the behavior of boron carbide in extreme dynamic environments." *Journal of the American Ceramic Society*, doi: <https://doi.org/10.1111/jace.18071>.
- 12 [0] Shen Y., Yang M.Y., Goddard W.A., An Q. (2021) "Strengthening boron carbide by doping Si into grain boundaries." *Journal of the American Ceramic Society*, doi: <https://doi.org/10.1111/jace.18028>.
- 13 [0] Xie K.Y., Yang Q., Marvel C.J., He M.-R., LaSalvia J.C., Harmer M.P., Hwang C., Haber R.A., Hemker K.J. (2021) "Experimental observations of amorphization in multiple generations of boron carbide." *Journal of the American Ceramic Society*, doi: <https://doi.org/10.1111/jace.18058>.
- 14 [0] Zare A., He M.-R., Straker M., Chandrashekhare M.V.S., Spencer M., Hemker K.J., McCauley J.W., Ramesh K.T. (2021) "Mechanical characterization of boron carbide single crystals." *Journal of the American Ceramic Society*, doi: <https://doi.org/10.1111/jace.18065>.
- 15 [1] Zeng Q., McCauley J.W., Ramesh K.T. (2021) "A Mechanism-Based Model for the Impact Response of Quartz." *Journal of Geophysical Research: Solid Earth*, 126(3), doi: <https://doi.org/10.1029/2020JB020209>.

2020

- 1 [3] Cil, M. B. Hurley, R. and Brady, L. (2020) "An Integrative Model for the Dynamic Behavior of Brittle Materials Based on Microcracking and Breakage Mechanics." *Journal of Dynamic Behavior of Materials*, doi: <https://doi.org/10.1007/s40870-020-00251-x>.
- 2 [9] Cil, M. B. Hurley, R. and Brady, L. (2020) "Constitutive Model for Brittle Granular Materials Considering Competition between Breakage and Dilation." *Journal of Engineering Mechanics*, 146(1), 04019110-. doi: [https://doi.org/10.1061/\(ASCE\)EM.1943-7889.0001690](https://doi.org/10.1061/(ASCE)EM.1943-7889.0001690).
- 3 [6] Schaefer, M. and Haber, R. (2020) "Amorphization Mitigation in Boron-Rich Boron Carbides Quantified by Raman Spectroscopy." __, doi: <https://doi.org/10.3390/ceramics3030027>.
- 4 [3] Straker, M. Chauhan, A. Sinha, M. Phelan, W. A. Chandrashekhare, M. Hemker, K. J. Marvel, C. and Spencer, M. (2020) "Growth of high purity zone-refined Boron Carbide single crystals by Laser Diode Floating Zone method." *Journal of Crystal Growth*, 543, 125700-. doi: <https://doi.org/10.1016/j.jcrysgro.2020.125700>.
- 5 [4] Sun X., Chauhan A., Mallick D.D., Tonge A.L., McCauley J.W., Hemker K.J., LaSalvia J.C., Ramesh K.T. (2020) "Granular flow of an advanced ceramic under ultra-high strain rates and high pressures." *Journal of the Mechanics and Physics of Solids*, 143, doi: <https://doi.org/10.1016/j.jmps.2020.104031>.
- 6 [7] Yang, B. Celik, A. M. Du, J. LaSalvia, J. Hwang, C. and Haber, R. (2020) "Advancing the mechanical properties of Si/B co-doped boron carbide through TiB2 reinforcement." __, doi: <https://doi.org/10.1016/j.matlet.2020.127480>.
- 7 [0] Yang, B. Marvel, C. Shen, Y. Du, J. Hwang, C. Gronskoe, E. Xie, K. Mercurio, S. An, Q. Harmer, M. and Haber, R. (2020) "Activating dislocation mediated plasticity in boron carbide (B4C) via Al-doping." __,
- 8 [0] Yasar, Z. and Haber, R. (2020) "Effect of Acid Etching time and concentration of oxygen content for powder on the microstructure and elastic properties of silicon carbide densified by spark plasma sintering method." __, doi: <http://www.sciencepublishinggroup.com/journal/paperinfo?journalid=123&doi=10.11648/j.ijmsa.20200901.12>.
- 9 [6] Yasar, Z. and Haber, R. (2020) "Effect of Carbon Addition and Mixture Method on the Microstructure and Mechanical Properties of Silicon Carbide." __, doi: <https://doi.org/10.3390/ma13173768>.
- 10 [2] Xiang, S. Yang, B. Lien, H. Shial, K. Gronskoe, E. Haber, R. and Xie, K. (2020) "The effect of boron and aluminum additions on the microstructure of arc melted boron carbide." __, doi: <https://ceramics.onlinelibrary.wiley.com/doi/full/10.1111/jace.17062>.

2019

- 1 [0] Celik, A. M. Hwang, C. and Haber, R. (2019) "Effect of sintering conditions on densification and mechanical properties of monolithic TiB₂ ceramics." *...*
- 2 [18] Chauhan, A. Schaefer, M. Haber, R. and Hemker, K. J. (2019) "Experimental Observations of Amorphization in Stoichiometric and Boron-Rich Boron Carbide." *...* doi: <https://doi.org/10.1016/j.actamat.2019.09.052>.
- 3 [7] Chauhan, A. Sun, A. Ramesh, K. and Hemker, K. J. (2019) "Dynamic failure mechanisms of granular boron carbide under multi-axial high-strain-rate loading." *Scripta Materialia*, 173, 125-128. doi: <https://doi.org/10.1016/j.scriptamat.2019.08.003>.
- 4 [7] Cil, M. B. Hurlley, R. and Brady, L. (2019) "A rate-dependent constitutive model for brittle granular materials based on breakage mechanics." *Journal of the American Ceramic Society*, doi: <http://doi.org/10.1111/jace.16376>.
- 5 [16] Eswar, P. and Ramesh, K. (2019) "Hardness and mechanical anisotropy of hexagonal SiC single crystal polytypes." *Journal of Alloys and Compounds*, 770, 158-165. doi: <https://doi.org/10.1016/j.jallcom.2018.08.102>.
- 6 [8] Huq, F. Liu, J. Tonge, A. and Brady, L. (2019) "A micromechanics based model to predict micro-crack coalescence in brittle materials under dynamic compression." *Engineering Fracture Mechanics*, doi: <https://doi.org/10.1016/j.engfracmech.2019.106515>.
- 7 [5] Hwang C., DiPietro S., Xie K.Y., Yang Q., Celik A.M., Khan A.U., Dornich V., Walck S., Hemker K.J., Haber R.A. (2019) "Small amount TiB₂ addition into B4C through sputter deposition and hot pressing." *Journal of the American Ceramic Society*, 102(8), 4421-4426. doi: <https://doi.org/10.1111/jace.16457>.
- 8 [5] Hwang, C. DiPietro, S. Xie, K. Yang, B. Celik, A. M. Khan, A. Dornich, V. Walck, S. Hemker, K. J. and Haber, R. (2019) "Small amount TiB₂ addition into B4C through sputter deposition and hot pressing." *...* doi: <https://doi.org/10.1111/jace.16457>.
- 9 [13] Hwang, C. Yang, B. Xiang, S. Dornich, V. Khan, A. Xie, K. Hemker, K. J. and Haber, R. (2019) "Fabrication of dense B4C-preceramic polymer derived SiC composite." *...* doi: <https://doi.org/10.1016/j.jeurceramsoc.2018.12.029>.
- 10 [5] Krinsky, E. Ramesh, K. Bratcher, M. Foster, M. A. and Hogan, J. (2019) "Quantification of damage and its effects on the compressive strength of an advanced ceramic." *Engineering Fracture Mechanics*, 208, 107-118. doi: <https://doi.org/10.1016/j.engfracmech.2019.01.007>.
- 11 [1] Leong, A. Asare, E. Rex, R. Xiao, X. Ramesh, K. and Hufnagel, T. (2019) "Determination of size distributions of non-spherical pores or particles from single x-ray phase contrast images." *Optics Express*, 27(12), 17322-17347. doi: <https://doi.org/10.1364/OE.27.017322>.
- 12 [11] Marvel, C. Behler, K. LaSalvia, J. Dornich, V. Haber, R. Watanabe, M. and Harmer, M. (2019) "Extending Z-factor microanalysis to boron-rich ceramics: Quantification of bulk stoichiometry and grain boundary composition." *...* doi: <https://doi.org/10.1016/j.ultramic.2019.04.008>.
- 13 [1] Toksoy, M. and Haber, R. (2019) "Modification of Commercial Boron Carbide Powder by Using Rapid Carbothermal Reduction." *...* doi: <https://ceramics.onlinelibrary.wiley.com/doi/epdf/10.1111/ijac.13130>.
- 14 [12] Xiang S., Ma L., Yang B., Dieudonne Y., Pharr G.M., Lu J., Yadav D., Hwang C., LaSalvia J.C., Haber R.A., Hemker K.J., Xie K.Y. (2019) "Tuning the deformation mechanisms of boron carbide via silicon doping." *Science Advances*, 5(10), doi: <https://doi.org/10.1126/sciadv.aay0352>.
- 15 [0] Xiang, S. Ma, L. Yang, B. Hwang, C. Hemker, K. J. Haber, R. and Xie, K. (2019) "Revealing the microstructural information of the quasi-plastic zone in a boron carbide using the advanced precession electron diffraction technique." *...* doi: <https://doi.org/10.1017/S1431927619004677>.
- 16 [2] Yang, B. Hwang, C. Khan, A. Dornich, V. Gronske, E. and Haber, R. (2019) "Anisotropy and residual stress in B4C-ZrB₂ eutectic." *...* doi: <https://doi.org/10.1016/j.matchar.2019.109797>.
- 17 [10] Yang, B. Hwang, C. Marvel, C. Chauhan, A. Dornich, V. Khan, A. LaSalvia, J. Harmer, M. Hemker, K. J. and Haber, R. (2019) "Fabrication and characterization of arc melted Si/B co-doped boron carbide." *...* doi: <https://doi.org/10.1016/j.jeurceramsoc.2019.08.024>.
- 18 [14] Zeng, Q. Tonge, A. and Ramesh, K. (2019) "A multi-mechanism constitutive model for the dynamic failure of quasi-brittle materials. Part I: Amorphization as a failure mode." *Journal of the Mechanics and Physics of Solids*, 130, 370-392. doi: <https://doi.org/10.1016/j.jmps.2019.06.012>.
- 19 [9] Zeng, Q. Tonge, A. and Ramesh, K. (2019) "A multi-mechanism constitutive model for the dynamic failure of quasi-brittle materials. Part II: Integrative model." *Journal of the Mechanics and Physics of Solids*, 131, 20-42. doi: <https://doi.org/10.1016/j.jmps.2019.06.015>.

2018

- 1 [10] Ayyagari Venkata S, R. Daphalapurkar, N. and Ramesh, K. (2018) "The effective compliance of spatially evolving planar wing-cracks." *Journal of the Mechanics and Physics of Solids*, 111, 503-529. doi: <https://doi.org/10.1016/j.jmps.2017.11.016>.
- 2 [3] Cerededa Senas, D. Kats, D. Daphalapurkar, N. and Brady, L. (2018) "A micro-mechanical modeling approach for dynamic fragmentation in brittle multi-phase materials." *International Journal of Solids and Structures*, 134, 116-129. doi: <https://doi.org/10.1016/j.ijsolstr.2017.10.026>.
- 3 [4] Hwang, C. Ornek, M. Reddy, M. Dornich, V. Miller, S. Hemker, K. J. and Haber, R. (2018) "Effect of synthesis conditions of BCNO on the formation and structural ordering of BN at 1200 °C and 1 GPa." *Diamond and Related Materials*, 87, 156-162. doi: <https://doi.org/10.1016/j.diamond.2018.06.002>.
- 4 [29] Khan, A. Etzold, A. Yang, X. Dornich, V. Xie, K. Hwang, C. Behler, K. Chen, M. An, Q. LaSalvia, J. Hemker, K. J. Goddard, W. A. and Haber, R. (2018) "Locating Si atoms in Si-doped boron carbide: A route to understand amorphization mitigation mechanism." *Acta Materialia*, 187, 106-113. doi: <https://doi.org/10.1016/j.actamat.2018.07.021>.
- 5 [13] Leong, A. Robinson, A. Fezzaa, K. Sun, T. Sinclair, N. Casem, D. Lambert, P. Hustedt, C. Daphalapurkar, N. Ramesh, K. and Hufnagel, T. (2018) "Quantitative In Situ Studies of Dynamic Fracture in Brittle Solids Using Dynamic X-ray Phase Contrast Imaging." *EXPERIMENTAL MECHANICS*, 58, {1423-1437}. doi: <https://doi.org/10.1007/s11340-018-0414-3>.
- 6 [0] Marvel, C. Etzold, A. Dornich, V. Behler, K. LaSalvia, J. Haber, R. Watanabe, M. and Harmer, M. (2018) "Z-factor development and quantification of a boron carbide and silicon hexaboride diffusion couple." *...* doi: <https://doi.org/10.1017/S1431927618004208>.
- 7 [8] Ornek M., Hwang C., Xie K.Y., Pratas S., Calado J., Burgess A., Dornich V., Hemker K.J., Haber R.A. (2018) "Formation of metastable wurtzite phase boron nitride by emulsion detonation synthesis." *Journal of the American Ceramic Society*, 101(8), 3276-3281. doi: <https://doi.org/10.1111/jace.15560>.

2017

- 1 [12] An, Q. and Goddard, W. A. (2017) "Ductility in Crystalline Boron Subphosphide (B12P₂) for Large Strain Indentation." *J. Phys. Chem. C*, 121(30), 16644-16649. doi: <https://doi.org/10.1021/acs.jpcc.7b05429>.
- 2 [9] An, Q. and Goddard, W. A. (2017) "Improved Ductility of B12 Icosahedra-based Superhard Materials through Icosahedral Slip." *J. Phys. Chem. C*, 121(21), 11831-11838. doi: <https://doi.org/10.1021/acs.jpcc.7b01761>.
- 3 [21] An, Q. and Goddard, W. A. (2017) "Nanotwins soften boron-rich boron carbide (B13C₂)." *Applied Physics Letters*, 110(11), 11902-11902. doi: <http://dx.doi.org/10.1063/1.4978644>.
- 4 [2] An, Q. Reddy, M. Xie, K. Hemker, K. J. and Goddard, W. A. (2017) "An et al. Reply." *Phys. Rev. Lett.*, 118(8), 89602-89602. doi: <https://doi.org/10.1103/PhysRevLett.118.089602>.
- 5 [2] An, Q. Reddy, M. Xie, K. Hemker, K. J. and Goddard, W. A. (2017) "Erratum: New Ground-State Crystal Structure of Elemental Boron [Phys. Rev. Lett. 117, 085501 (2016)]." *Phys. Rev. Lett.*, 118(15), 59902-59902. doi: <https://doi.org/10.1103/PhysRevLett.118.159902>.
- 6 [6] Cerededa Senas, D. Brady, L. and Daphalapurkar, N. (2017) "Modeling dynamic fragmentation of heterogeneous brittle materials." *International Journal of Impact Engineering*, 99, 85-101. doi: <https://doi.org/10.1016/j.ijimpeng.2016.09.012>.
- 7 [20] Farbaniec, L. Hogan, J. Xie, K. Shaeffer, M. Hemker, K. J. and Ramesh, K. (2017) "Damage evolution of hot-pressed boron carbide under confined dynamic compression." *International Journal of Impact Engineering*, 99, 75-84. doi: <https://doi.org/10.1016/j.ijimpeng.2016.09.008>.
- 8 [11] Hernández-Rivera, E. Coleman, S. and Tschopp, M. (2017) "Using Similarity Metrics to Quantify Differences in High-Throughput Data Sets: Application to X-ray Diffraction Patterns." *ACS Combinatorial Science*, 19(1), 25-36. doi: <http://dx.doi.org/10.1021/acscombsci.6b00142>.
- 9 [28] Hogan, J. Farbaniec, L. Mallick, D. Dornich, V. Kuwelkar, K. Sano, T. McCauley, J. W. and Ramesh, K. (2017) "Fragmentation of an advanced ceramic under ballistic impact: Mechanisms and microstructure." *International Journal of Impact Engineering*, 102, 47-54. doi: <https://doi.org/10.1016/j.ijimpeng.2016.12.008>.
- 10 [0] Khan, A. Dornich, V. and Haber, R. (2017) "Boron carbide based ceramics: Problems and possible solutions." *...* doi: <https://web.a.ebscohost.com/ehost/pdfviewer/pdfviewer?vid=1&sid=9456eb7f-0060-43e4-9ada-dd6d0786e4a5%40sessionmgr4006>.

- 11 [2] Lamberson, L. and Ramesh, K. (2017) "Dynamic electromechanical behavior of single-crystal α -quartz." *International Journal of Impact Engineering*, 110, 338-345. doi: <https://doi.org/10.1016/j.ijimpeng.2017.01.029>.
- 12 [0] Ma, L. Xie, K. Toksoy, M. Kuwelkar, K. Haber, R. and Hemker, K. J. (2017) "The effect of Si on the microstructure and mechanical properties of spark plasma sintered boron carbide." *...* doi: <https://reader.elsevier.com/reader/sd/pii/S1044580317317771?token=F7B5EEC9C45F3F155504422D91B674E4C78CD24DDE4BE4D021DB7F7627A1F7945C6EAF6A3A1ECFBD1DF9C52541DD2CEC>.
- 13 [2] Ramesh, K. Stickle, A. and Kimberley, J. (2017) "Rocks, Shocks and Asteroids, and Some Interesting Research Directions in Mechanics." *Experimental Mechanics*, 57(8), 1149-1159. doi: <http://dx.doi.org/10.1007/s11340-017-0324-9>.
- 14 [19] Swab, J. Meredith, C. Casem, D. and Gamble, W. (2017) "Static and dynamic compression strength of hot-pressed boron carbide using a dumbbell-shaped specimen." *Journal of Materials Science*, 52(17), 10073-10084. doi: <http://dx.doi.org/10.1007/s10853-017-1210-7>.
- 15 [0] Taylor, D. (2017) "Convergence acceleration of molecular dynamics methods for shocked materials using velocity scaling." *Molecular Physics*, 115(5), 603-617. doi: <http://dx.doi.org/10.1080/00268976.2016.1241905>.
- 16 [1] Taylor, D. (2017) "Molecular dynamics simulation of the Hugoniot states of boron suboxide." *Materials Letters*, 188, 331-333. doi: <https://doi.org/10.1016/j.matlet.2016.11.118>.
- 17 [8] Toksoy, M. Rafaniello, B. Xie, K. Ma, L. Hemker, K. J. and Haber, R. (2017) "Densification and characterization of rapid carbothermal synthesized boron carbide." *International Journal of Applied Ceramic Technology*, 14(3), 443-453. doi: <http://dx.doi.org/10.1111/ijac.12654>.
- 18 [0] Tonge, A. and Ramesh, K. (2017) "Corrigendum to: Multi-scale defect interactions in high-rate brittle material failure. Part I: Model formulation and application to AlON." *Journal of the Mechanics and Physics of Solids*, 106, 313-314. doi: <https://doi.org/10.1016/j.jmps.2017.05.020>.
- 19 [0] Tonge, A. and Ramesh, K. (2017) "Multi-scale defect interactions in high-rate brittle material failure. Part I: Model formulation and application to AlON (vol 86, pg 117, 2016)." *Journal of the Mechanics and Physics of Solids*, 106, 313-314. doi: <https://doi.org/10.1016/j.jmps.2017.05.020>.
- 20 [50] Xie, K. Domnich, V. Farbaniec, L. Chen, B. Kuwelkar, K. Ma, L. McCauley, J. W. Haber, R. Ramesh, K. and Chen, M. (2017) "Microstructural Characterization of Boron-rich Boron Carbide." *Acta Materialia*, 136, 202-214. doi: <http://dx.doi.org/10.1016/j.actamat.2017.06.063>.

2016

- 1 [44] An, Q. Goddard, W. A. Xie, K. Sim, G. Hemker, K. J. Munhollon, T. Toksoy, M. and Haber, R. (2016) "Superstrength through Nanotwinning." *Nano Letters*, 16(12), 7573-7579. doi: <http://pubs.acs.org/doi/abs/10.1021/acs.nanolett.6b03414>.
- 2 [30] An, Q. Reddy, M. Dong, H. Chen, M. Oganov, A. and Goddard, W. A. (2016) "Nanotwinned Boron Suboxide (B₆O): New Ground State of B₆O." *Nano Letters*, 16(7), 4236-4242. doi: <http://dx.doi.org/10.1021/acs.nanolett.6b01204>.
- 3 [26] An, Q. Reddy, M. Qian, J. Hemker, K. J. Chen, M. and Goddard, W. A. (2016) "Nucleation of amorphous shear bands at nanotwins in boron suboxide." *Nature Communications*, 7, 1-7. doi: <https://doi.org/10.1038/ncomms11001>.
- 4 [38] An, Q. Reddy, M. Xie, K. Hemker, K. J. and Goddard, W. A. (2016) "New Ground-State Crystal Structure of Elemental Boron." *Phys. Rev. Lett.*, 117(8), 85501-85501. doi: <https://doi.org/10.1103/PhysRevLett.117.085501>.
- 5 [33] An, Q. Samwer, K. Demetriou, M. Floyd, M. Duggins, D. Johnson, W. and Goddard, W. A. (2016) "How the toughness in metallic glasses depends on topological and chemical heterogeneity." *Proceedings of the National Academy of Sciences*, 113(26), 7053-7058. doi: <http://dx.doi.org/10.1073/pnas.1607506113>.
- 6 [11] Coleman, S. Hernandez, E. Behler, K. and Tschopp, M. (2016) "Challenges of Engineering Grain Boundaries in Boron-Based Armor Ceramics." *JOM*, 68(6), 1605-1615. doi: <http://dx.doi.org/10.1007/s11837-016-1856-7>.
- 7 [12] Farbaniec, L. Hogan, J. McCauley, J. W. and Ramesh, K. (2016) "Anisotropy of Mechanical Properties in a Hot-Pressed Boron Carbide." *International Journal of Applied Ceramic Technology*, 13(6), 1008-1016. doi: <http://dx.doi.org/10.1111/ijac.12585>.
- 8 [15] Gao, H. Etzold, A. Munhollon, T. Goddard, W. A. and Haber, R. (2016) "Processing factors influencing the free carbon contents in boron carbide powder by rapid carbothermal reduction." *Diamond and Related Materials*, 61, 14-20. doi: <https://doi.org/10.1016/j.diamond.2015.11.005>.
- 9 [3] Hilton, C. McCauley, J. W. Swab, J. Shanholtz, E. and Chen, M. (2016) "Using Hardness Tests to Quantify Bulk Plasticity and Predict Transition Velocities in SiC Materials." *International Journal of Applied Ceramic Technology*, 10(1), 114-122. doi: <http://dx.doi.org/10.1111/j.1744-7402.2012.02817.x>.
- 10 [23] Hogan, J. Farbaniec, L. Daphalapurkar, N. and Ramesh, K. (2016) "On Compressive Brittle Fragmentation." *Journal of the American Ceramic Society*, 99(6), 2159-2169. doi: <https://doi.org/10.1111/jace.14171>.
- 11 [32] Hogan, J. Farbaniec, L. Sano, T. Shaeffer, M. and Ramesh, K. (2016) "The effects of defects on the uniaxial compressive strength and failure of an advanced ceramic." *Acta Materialia*, 102, 263-272. doi: <https://doi.org/10.1016/j.actamat.2015.09.028>.
- 12 [11] Huq, F. Brannon, R. and Brady, L. (2016) "An efficient binning scheme with application to statistical crack mechanics." *International Journal for Numerical Methods in Engineering*, 105(1), 33-62. doi: <http://dx.doi.org/10.1002/nme.4959>.
- 13 [21] Li, G. An, Q. Goddard, W. A. Hanus, R. Zhai, P. Zhang, Q. and Snyder, G. (2016) "Atomistic explanation of brittle failure of thermoelectric skutterudite CoSb₃." *Acta Materialia*, 103, 775-780. doi: <https://doi.org/10.1016/j.actamat.2015.11.021>.
- 14 [8] Liu, J. and Brady, L. (2016) "Effective anisotropic compliance relationships for wing-cracked brittle materials under compression." *International Journal of Solids and Structures*, 100, 151-168. doi: <http://dx.doi.org/10.1016/j.ijsolstr.2016.08.012>.
- 15 [1] Liu, J. and Brady, L. (2016) "Perturbation-based surrogate models for dynamic failure of brittle materials in a multiscale and probabilistic context." *International Journal for Multiscale Computational Engineering*, 14(3), 273-290. doi: <https://doi.org/10.1615/IntJMCompEng.2016015857>.
- 16 [16] Madhav Reddy K., Hwang C., Ornek M., Miller S.L., Mayo W.E., Burgess A., Haber R.A., Hemker K.J. (2016) "Observations of nanocrystalline cubic boron nitride formed with plasma spraying." *Acta Materialia*, 116, 155-165. doi: <https://doi.org/10.1016/j.actamat.2016.06.038>.
- 17 [0] McDonald, J. and Satapathy, S. (2016) "Surface waves and their influence on cone cracking in brittle materials." *International Journal of Impact Engineering*, 93, 144-152. doi: <https://doi.org/10.1016/j.ijimpeng.2016.03.003>.
- 18 [33] Tonge, A. and Ramesh, K. (2016) "Multi-scale defect interactions in high-rate brittle material failure. Part I: Model formulation and application to design of protection materials." *Journal of the Mechanics and Physics of Solids*, 86, 117-149. doi: <https://doi.org/10.1016/j.jmps.2015.10.007>.
- 19 [19] Tonge, A. and Ramesh, K. (2016) "Multi-scale defect interactions in high-rate failure of brittle materials, Part II: Application to design of protection materials." *Journal of the Mechanics and Physics of Solids*, 86, 237-258. doi: <https://doi.org/10.1016/j.jmps.2015.10.006>.
- 20 [6] Tonge, A. Ramesh, K. and Barnouin, O. (2016) "A model for impact-induced lineament formation and porosity growth on Eros." *Icarus*, 266, 76-87. doi: <https://doi.org/10.1016/j.icarus.2015.11.018>.
- 21 [22] Xie K.Y., Kuwelkar K., Haber R.A., LaSalvia J.C., Hemker K.J., Hay R. (2016) "Microstructural Characterization of a Commercial Hot-Pressed Boron Carbide Armor Plate." *Journal of the American Ceramic Society*, 99(8), 2834-2841. doi: <https://doi.org/10.1111/jace.14295>.
- 22 [25] Xie, K. An, Q. Sato, T. Breen, A. Ringer, S. Goddard, W. A. Cairney, J. and Hemker, K. J. (2016) "Breaking the icosahedra in boron carbide." *Proceedings of the National Academy of Sciences*, 113(43), 12012-12016. doi: <https://doi.org/10.1073/pnas.1607980113>.
- 23 [54] Zhao, S. Kad, B. Remington, B. LaSalvia, J. Wehrenberg, C. Behler, K. and Meyers, M. (2016) "Directional amorphization of boron carbide subjected to laser shock compression." *Proceedings of the National Academy of Sciences*, 113(43), 12088-12093. doi: <http://dx.doi.org/10.1073/pnas.1604613113>.

2015

- 1 [88] An, Q. and Goddard, W. A. (2015) "Atomistic Origin of Brittle Failure of Boron Carbide from Large-Scale Reactive Dynamics Simulations: Suggestions toward Improved Ductility." *Phys. Rev. Lett.*, 115, 5501-5506. doi: <http://dx.doi.org/10.1103/PhysRevLett.115.105501>.
- 2 [7] Aydelotte, B. and Schuster, B. (2015) "Impact and Penetration of SiC: The Role of Rod Strength in the Transition from Dwell to Penetration." *Procedia Engineering*, 103, 19-26. doi: <https://doi.org/10.1016/j.proeng.2015.04.004>.
- 3 [14] Beaudet, T. Smith, J. and Adams, J. (2015) "Surface energy and relaxation in boron carbide (101?) from first principles." *Solid State Communications*, 219, 43-47. doi: <https://doi.org/10.1016/j.ssc.2015.06.021>.

- 4 [0] Brady, L. Katcoff, Z. Mayercsik, N. and Kurtis, K. (2015) "Micromechanical Model and Associated Validation for Dynamic Failure of Brittle Materials Containing Pores and Slit-Like Flaws." *Journal of Engineering Mechanics*, 141(10), 5-10. doi: [https://doi.org/10.1061/\(ASCE\)EM.1943-7889.0000927#sthash.xrzgreat.dpuf](https://doi.org/10.1061/(ASCE)EM.1943-7889.0000927#sthash.xrzgreat.dpuf).
- 5 [8] Cao, B. Daphalapurkar, N. and Ramesh, K. (2015) "Ultra-high-strain-rate shearing and deformation twinning in nanocrystalline aluminum." *Meccanica*, 50(2), 561-574. doi: <http://dx.doi.org/10.1007/s11012-014-9952-7>.
- 6 [5] Casem, D. Dwivedi, A. Swab, J. Wright, J. and Mondal, A. (2015) "Analysis of a Three-Bar Kolsky Apparatus for High-Rate Three-Point Flexure." *Journal of Dynamic Behavior of Materials*, 1(1), 75-93. doi: <http://dx.doi.org/10.1007/s40870-014-0002-2>.
- 7 [30] Clayton, J. and Tonge, A. (2015) "A nonlinear anisotropic elastic-inelastic constitutive model for polycrystalline ceramics and minerals with application to boron carbide." *International Journal of Solids and Structures*, 64, 191-207. doi: <https://doi.org/10.1016/j.ijsolstr.2015.03.024>.
- 8 [24] Clayton, J. (2015) "Penetration resistance of armor ceramics: Dimensional analysis and property correlations." *International Journal of Impact Engineering*, 85, 124-131. doi: <https://doi.org/10.1016/j.ijimpeng.2015.06.025>.
- 9 [31] Farbaniec, L. Hogan, J. and Ramesh, K. (2015) "Micromechanisms associated with the dynamic compressive failure of hot-pressed boron carbide." *Scripta Materialia*, 106, 52-56. doi: <http://dx.doi.org/10.1016/j.scriptamat.2015.05.004>.
- 10 [9] Gao, Y. Rafaniello, B. Toksoy, M. Munhollon, T. and Haber, R. (2015) "Improvement of crystallization and particle size distribution of boric acid in the processing of a boron carbide precursor." *RSC Adv.*, 5(25), 19067-19073. doi: <http://dx.doi.org/10.1039/C4RA16279J>.
- 11 [30] Hogan, J. Farbaniec, L. Bratcher, M. and Ramesh, K. (2015) "The Effects of Microstructure and Confinement on the Compressive Fragmentation of an Advanced Ceramic." *Journal of the American Ceramic Society*, 98(3), 902-912. doi: <http://dx.doi.org/10.1111/jace.13353>.
- 12 [11] Holland, C. Gamble, E. Zok, F. Deshp, V. and McMeeking, B. (2015) "Effect of design on the performance of steel-alumina bilayers and trilayers subject to ballistic impact." *Mechanics of Materials*, 91, 241-251. doi: <http://dx.doi.org/10.1016/j.mechmat.2015.05.002>.
- 13 [41] Hu, G. Liu, J. Brady, L. and Ramesh, K. (2015) "A 3D mechanistic model for brittle materials containing evolving flaw distributions under dynamic multiaxial loading." *Journal of the Mechanics and Physics of Solids*, 78, 269-297. doi: <http://dx.doi.org/10.1016/j.jmps.2015.02.014>.
- 14 [54] Klinsmann, M. Rosato, D. Kamlah, M. McMeeking, R. and McMeeking, B. (2015) "An assessment of the phase field formulation for crack growth." *Computer Methods in Applied Mechanics and Engineering*, 294, 313-330. doi: <http://dx.doi.org/10.1016/j.cma.2015.06.009>.
- 15 [58] Ramesh, K. Hogan, J. Kimberley, J. and Stickle, A. (2015) "A review of mechanisms and models for dynamic failure, strength, and fragmentation." *Planetary and Space Science*, 107, 10-23. doi: <http://dx.doi.org/10.1016/j.pss.2014.11.010>.
- 16 [11] Schuster, B. Aydelotte, B. Leavy, B. Satapathy, S. and Zellner, M. (2015) "Concurrent Velocimetry and Flash X-ray Characterization of Impact and Penetration in an Armor Ceramic." *Procedia Engineering*, 103, 553-560. doi: <https://doi.org/10.1016/j.proeng.2015.04.072>.
- 17 [20] Tang, B. An, Q. and Goddard, W. A. (2015) "Improved Ductility of Boron Carbide by Microalloying with Boron Suboxide." *The Journal of Physical Chemistry C*, 119(43), 24649-24656. doi: <http://dx.doi.org/10.1021/acs.jpcc.5b08086>.
- 18 [34] Taylor, D. (2015) "Shock Compression of Boron Carbide: A Quantum Mechanical Analysis." *Journal of the American Ceramic Society*, 98(10), 3308-3318. doi: <http://dx.doi.org/10.1111/jace.13711>.
- 19 [3] Tonge, A. Leavy, B. LaSalvia, J. Ramesh, K. and Brannon, R. (2015) "A Quantitative Approach to Comparing High Velocity Impact Experiments and Simulations Using XCT Data." *Procedia Engineering*, 103, 610-617. doi: <https://doi.org/10.1016/j.proeng.2015.04.079>.
- 20 [37] Xie, K. An, Q. Toksoy, M. McCauley, J. W. Haber, R. Goddard, W. A. and Hemker, K. J. (2015) "Atomic-Level Understanding of "Asymmetric Twins" in Boron Carbide." *Phys. Rev. Lett.*, 115, 1-5. doi: <https://doi.org/10.1103/PhysRevLett.115.175501>.
- 21 [14] Xie, K. Livi, K. McCauley, J. W. and Hemker, K. J. (2015) "Precipitation of AlN in a commercial hot-pressed boron carbide." *Scripta Materialia*, 101, 95-98. doi: <http://dx.doi.org/10.1016/j.scriptamat.2015.02.002>.

2014

- 1 [8] An, Q. Goddard, W. A. Xiao, H. and Cheng, T. (2014) "Deformation Induced Solid-Solid Phase Transitions in Gamma Boron." *Chemistry of Materials*, 26(14), 4289-4298. doi: <http://dx.doi.org/10.1021/cm5020114>.
- 2 [112] An, Q. Goddard, W. A. and Chengcheng, T. (2014) "Atomistic Explanation of Shear-Induced Amorphous Band Formation in Boron Carbide." *Phys. Rev. Lett.*, 113, 95501-95501. doi: <https://link.aps.org/doi/10.1103/PhysRevLett.113.095501>.
- 3 [15] Batyrev, I. Taylor, D. Gazonas, G. and McCauley, J. W. (2014) "Density functional theory and evolution algorithm calculations of elastic properties of AlON." *Journal of Applied Physics*, 115(2), 23505-23505. doi: <https://doi.org/10.1063/1.4859435>.
- 4 [24] Daphalapurkar, N. Wilkerson, J. Wright, T. and Ramesh, K. (2014) "Kinetics of a fast moving twin boundary in nickel." *Acta Materialia*, 68, 82-92. doi: <https://doi.org/10.1016/j.actamat.2014.01.010>.
- 5 [16] Katcoff, C. and Brady, L. (2014) "Modeling dynamic brittle behavior of materials with circular flaws or pores." *International Journal of Solids and Structures*, 51(3), 754-766. doi: <http://dx.doi.org/10.1016/j.ijsolstr.2013.11.004>.
- 6 [0] Xie, K. Toksoy, M. Kuwelkar, K. Zhang, B. Krogstad, J. Haber, R. and Hemker, K. J. (2014) "Effect of Alumina on the Structure and Mechanical Properties of Spark Plasma Sintered Boron Carbide." *Journal of the American Ceramic Society*, 97(11), 3710-3718. doi: <http://dx.doi.org/10.1111/jace.13178>.

2013

- 1 [17] Clayton, J. (2013) "Mesoscale modeling of dynamic compression of boron carbide polycrystals." *Mechanics Research Communications*, 49, 57-64. doi: <https://doi.org/10.1016/j.mechrescom.2013.02.005>.
- 2 [62] Kimberley, J. Ramesh, K. and Daphalapurkar, N. (2013) "A scaling law for the dynamic strength of brittle solids." *Acta Materialia*, 61(9), 3509-3521. doi: <http://dx.doi.org/10.1016/j.actamat.2013.02.045>.
- 3 [42] McCauley, J. W. Strassburger, E. Patel, P. Paliwal, B. and Ramesh, K. (2013) "Experimental Observations on Dynamic Response of Selected Transparent Armor Materials." *Experimental Mechanics*, 53, 3-29. doi: <https://doi.org/10.1007/s11340-012-9658-5>.
- 4 [10] Szlufarska, I. Ramesh, K. and Warner, D. (2013) "Simulating Mechanical Behavior of Ceramics Under Extreme Conditions." *Annual Review of Materials Research*, 43(1), 131-156. doi: <https://doi.org/10.1146/annurev-matsci-071312-121714>.
- 5 [11] Tonge, A. Kimberley, J. and Ramesh, K. (2013) "A Consistent Scaling Framework for Simulating High Rate Brittle Failure Problems." *Procedia Engineering*, 58, 692-701. doi: <https://doi.org/10.1016/j.proeng.2013.05.080>.

2012

- 1 [35] Clayton, J. (2012) "Towards a nonlinear elastic representation of finite compression and instability of boron carbide ceramic." *Philosophical Magazine*, 92(23), 2860-2893. doi: <http://dx.doi.org/10.1080/14786435.2012.682171>.
- 2 [39] Clayton, J. Kraft, R. and Leavy, B. (2012) "Mesoscale modeling of nonlinear elasticity and fracture in ceramic polycrystals under dynamic shear and compression." *International Journal of Solids and Structures*, 49(18), 2686-2702. doi: <https://doi.org/10.1016/j.ijsolstr.2012.05.035>.
- 3 [0] Reddy, K. Guo, J. Shinoda, Y. Fujita, T. Hirata, A. Singh, J. McCauley, J. W. and Chen, M. (2012) "Enhanced mechanical properties of nanocrystalline boron carbide by nanoporosity and interface phases." *Nature Communications*, 1, 1052-1052. doi: <http://doi.org/10.1038/ncomms2047http://doi.org/>
- 4 [10] Swab, J. Wereszczak, A. Strong, K. Danna, D. LaSalvia, J. Ragan, M. and Ritt, P. (2012) "Knoop Hardness-Apparent Yield Stress Relationship in Ceramics." *International Journal of Applied Ceramic Technology*, 9(3), 650-655. doi: <http://dx.doi.org/10.1111/j.1744-7402.2011.02686.x>.
- 5 [0] Taylor, D. McCauley, J. W. and Wainwright, E. (2012) "The effects of stoichiometry on the mechanical properties of icosahedral boron carbide under loading." *Journal of Physics: Condensed Matter*, 24(50), 505-402. doi: <http://dx.doi.org/10.1088/0953-8984/24/50/505402>.
- 6 [6] Tonge, A. Kimberley, J. and Ramesh, K. (2012) "The mechanism of compressive unloading failure in single crystal quartz and other brittle solids." *International Journal of Solids and Structures*, 49(26), 3923-3934. doi: <https://doi.org/10.1016/j.ijsolstr.2012.08.021>.

- 7 [17] Wildman, R. and Gazonas, G. (2012) "A perfectly matched layer for peridynamics in two dimensions." *Journal of Mechanics of Materials and Structures*, 7(8), 765-781. doi: <http://dx.doi.org/10.2140/jomms.2012.7.765>.

Composites

2021

- 1 [0] Bhaduri A., Meyer C.S., Gillespie J.W., Haque B.Z.G., Shields M.D., Graham-Brady L. (2021) "Probabilistic Modeling of Discrete Structural Response with Application to Composite Plate Penetration Models." *Journal of Engineering Mechanics*, 147(11), doi: [https://doi.org/10.1061/\(ASCE\)EM.1943-7889.0001996](https://doi.org/10.1061/(ASCE)EM.1943-7889.0001996).
- 2 [0] Bhaduri, A., Gupta, A., Graham-Brady, L. (2021) "Stress Field Prediction in Composite Materials Using Deep Learning." *Composites Part B*,
- 3 [0] Chowdhury, S.C., Gillespie, Jr., J.W. (2021) "Strain-Rate Dependent Mode I Cohesive Traction Laws for Glass Fiber-Epoxy Interphase using Molecular Dynamics Simulations." *Composites Part B*,
- 4 [0] Gao, J., Fezzaa, K. and Chen, W. (2021) "Multiscale dynamic experiments on fiber-reinforced composites with damage assessment using high-speed synchrotron X-ray phase-contrast imaging." *NDT & E International*,
- 5 [0] Gao, J. Guo, Z. Hernandez, J. Zhou, F. Nie, Y. Gao, J. Lim, B. Kedir, N. Zhai, X. Wang, J. Tsai, J. De Carlo, F. Shevchenko, P. Tallman, T. Jun, M. Palmese, G. and Chen, W. (2021) "Transverse Impact by RCCs on S-Glass and Kevlar® FRC Strips." *Composites Part A*, 146(106425), doi: <https://doi.org/10.1016/j.compositesa.2021.106425>.
- 6 [0] Gao, J. Kedir, N. Hernandez, J. Gao, J. Horn, T. Kim, G. Fezzaa, K. Tallman, T. Palmese, G. Sterkenburg, R. and Chen, W. (2021) "Dynamic fracture of glass fiber-reinforced ductile polymer matrix composites and loading rate effect." *Composites Part B: Engineering*,
- 7 [0] Gao, J. Kedir, N. Kirk, C. Hernandez, J. Wang, J. Paulson, S. Zhai, X. Horn, T. Kim, G. Fezzaa, K. De Carlo, F. Shevchenko, P. Tallman, T. Sterkenburg, R. and Chen, W. (2021) "High-speed synchrotron X-ray phase-contrast imaging for evaluating microscale damage mechanisms and tracking cracking behaviors inside cross-ply GFRCS." *Composites Science and Technology*, 210(108814), doi: <https://doi.org/10.1016/j.compscitech..>
- 8 [0] Gao, J. Kedir, N. and Chen, W. (2021) "Characterization of failure of single carbon nanotube fibers under extreme transverse loading." *Journal of the Mechanics and Physics of Solids*,
- 9 [0] Gao, J., Kashcooli, Y., Palmese, G., Gillespie, Jr., J.W., O'Brien, D., Patterson, B. (2021) "Synergistic Fracture Toughness Enhancement of Epoxy-Amine Matrices Via Combination of Network Topology Modification and Silica Nanoparticle Reinforcement." *Composites Part B*,
- 10 [0] Haque (Gama), B.Z., Kubota, M., Gillespie, Jr., J.W. (2021) "Penetration Resistance of S-2 Glass/Epoxy Composites: Effect of Fabric Architecture, Matrix Non-Linearity and Fiber Sizing." *Composites Part B*,
- 11 [1] Haque, B. Z. and Gillespie, J. (2021) "Depth of Penetration of Dyneema HB26 Hard Ballistic Laminates." *Journal of Thermoplastic Composite Materials*, doi: <https://doi.org/10.1177/08927057211018532>.
- 12 [0] Kubota, M., Deitzel, J.M., Gillespie, Jr., J.W., Palmese, G.R., O'Brien, D. (2021) "Tailoring of Thin Silane Interphases in Glass/Epoxy Systems Through Vapor Deposition." *Composites Part B*,
- 13 [0] Meyer C.S., Bonyi E., Drake K., Obafemi-Babatunde T., Daodu A., Ajifa D., Bigio A., Taylor J., Haque B.Z., O'Brien D.J., Gillespie J.W., Aslan K. (2021) "Automated detection and quantification of transverse cracks on woven composites." *Journal of Reinforced Plastics and Composites*, 40(23), 898-911. doi: <https://doi.org/10.1177/07316844211017647>.
- 14 [0] Meyer, C., Haque (Gama), B.Z., O'Brien, D. (2021) "Nanoscale to Mesoscale Modeling of Ballistic Impact on Plain Weave Composite." *Composites Part B*,
- 15 [0] Meyer, C.S., Catugas, I.G., Gillespie, Jr., J.W., Haque, B.Z. (2021) "Investigation of Normal, Lateral, and Oblique Impact of Microscale Projectiles into Unidirectional Glass/Epoxy Composites." *Defense Technology*, doi: <https://doi.org/10.1016/j.dt.2021.08.012>.
- 16 [0] Meyer, C.S., Haque, B.Z., Gillespie, Jr., J.W. (2021) "Bridging Length Scales from Micro to Mesoscale through Rate-Dependent Traction-Separation Law Predictions." *Composites Part B*,
- 17 [0] Xiaofan Zhang, Yanrong Xiao, Christopher Meyer, Daniel O'Brien, Somnath Ghosh (2021) "Impact Damage Modeling in Woven Composites with Two-Level Parametrically-Upscaled Continuum Damage Mechanics Models (PUCDM)." *Composites Part B: Engineering*,
- 18 [0] Yeon, J. Chowdhury, S. C. Daksha, C. and Gillespie, J. (2021) "Development of Mg/Al/Si/O ReaxFF Parameters for Magnesium Aluminosilicate Glass using Artificial Neural Network Assisted Genetic Algorithm." *The Journal of Physical Chemistry*, 125(33), 18380-18394. doi: <https://doi.org/10.1021/acs.jpcc.1c01190>.
- 19 [0] Yeon, J., Chowdhury, S.C., Gillespie, Jr., J.W. (2021) "Mechanical Properties and Damage Analysis of S-glass Fiber: A Reactive Molecular Dynamics Study." *Composites Part B*,
- 20 [0] Zarrini S., Abrams C.F. (2021) "Roles of the Coupling Agent and Surfactant in Droplet Structure in Sizing Emulsions: A Molecular Dynamics Simulations Study." *Langmuir*, 37(33), 10183-10190. doi: <https://doi.org/10.1021/acs.langmuir.1c01592>.
- 21 [0] Zarrini, S., Abrams, C.F. (2021) "Modeling Sizing Emulsion Droplet Deposition Onto Silica Using All-Atom Molecular Dynamics Simulations." *Composites Part B*,
- 22 [0] Zhang X., O'Brien D.J., Ghosh S. (2021) "Parametrically homogenized continuum damage mechanics (PHCDM) models for unidirectional composites with nonuniform microstructural distributions." *Journal of Computational Physics*, 435, doi: <https://doi.org/10.1016/j.jcp.2021.110268>.

2020

- 1 [2] Bhaduri, A. Brandyberry, D. Shields, M. Geubelle, P. and Brady, L. (2020) "On the usefulness of gradient information in surrogate modeling: Application to uncertainty propagation in composite material models." *Probabilistic Engineering Mechanics*, (60), doi: <https://doi.org/10.1016/j.probenmech.2020.103024>.
- 2 [2] Bhaduri, A. Gardner, J. Abrams, C. and Brady, L. (2020) "Free energy calculation using space filled design and weighted reconstruction: A modified single sweep approach." *Molecular Simulations*, 46(3), 193-206. doi: <https://doi.org/10.1080/08927022.2019.1688325>.
- 3 [14] Chowdhury, S. C. Elder, R. Sirk, T. and Gillespie, J. (2020) "Epoxy resin thermo-mechanics and failure modes: Effects of cure and cross-linker length." *Composites Part B*, 186, 107814-. doi: <https://doi.org/10.1016/j.compositesb.2020.107814>.
- 4 [9] Chowdhury, S. C. Prosser, R. Sirk, T. Elder, R. and Gillespie, J. (2020) "Glass fiber-epoxy interactions in the presence of silane: A molecular dynamics study." *Applied Surface Science*, 542, doi: <https://doi.org/10.1016/j.apsusc.2020.148738>.
- 5 [0] Chu J.-M., Claus B., Lim B.H., O'Brien D., Sun T., Fezzaa K., Chen W. (2020) "Rate effects on fiber-matrix interfacial transverse debonding behavior." *Journal of Composite Materials*, 54(4), 501-517. doi: <https://doi.org/10.1177/0021998319866904>.
- 6 [6] Daksha, C. Yeon, J. Chowdhury, S. C. and Gillespie, J. (2020) "Automated ReaxFF Parametrization using Machine Learning." *Computational Materials Science Journal*, 187, doi: <https://doi.org/10.1016/j.commatsci.2020.110107>.
- 7 [2] Gao, J. Kedir, N. Kirk, C. Hernandez, J. Wang, J. Paulson, S. Zhai, X. Horn, T. Kim, G. Gao, J. Fezzaa, K. De Carlo, F. Shevchenko, P. Tallman, T. Sterkenburg, R. Palmese, G. and Chen, W. (2020) "Real-time damage characterization for GFRCS using high-speed synchrotron X-ray phase contrast imaging." *Composites Part B: Engineering*, 207(108565), 1-14. doi: <https://doi.org/10.1016/j.compositesb.2020.108565>.
- 8 [1] Gao, J. Kirk, C. Kedir, N. Paulson, S. Hernandez, J. Gao, J. Zhai, X. Wang, J. Horn, T. Kim, G. De Carlo, F. Shevchenko, P. Tallman, T. Palmese, G. Sterkenburg, R. and Chen, W. (2020) "A method for characterization of multiple dynamic constitutive parameters of FRCs." *Composites Science and Technology*, 203(108607), 1-15. doi: <https://doi.org/10.1016/j.compscitech.2020.108607>.
- 9 [9] Gao, J. Lim, B. Zhai, X. Kedir, N. and Chen, W. (2020) "Failure behaviors of single high-performance fibers under transverse dynamic cut." *Composites*, 144, 103660-. doi: <https://doi.org/10.1016/j.iimpeng.2020.103660>.

2019

- 1 [8] Bonyi, E. Meyer, C. Kioko, B. Adesina, O. Lansiquot, C. Onuk, Z. O'Brien, D. Haque, B. Z. Gillespie, J. and Aslan, K. (2019) "Assessment and quantification of ballistic impact damage of a single-layer woven fabric composite." *International Journal of Damage Mechanics*, 28(2), 249-269. doi: <https://doi.org/10.1177/1056789518758153>.
- 2 [1] Bonyi, E., Kioko, B., Meyer, C.S., Adesina, O., Obafami-Babatunde, T., Guy, J., O'Brien, D., Haque, B. Z., Gillespie, J.W., Aslan, K (2019) "Toward automated identification and quantification of meso-scale damage modes in plain weave glass/epoxy composite laminates." *International Journal of Damage Mechanics*, 29(5), 831-848. doi: <https://doi.org/10.1177/1056789519887215>.
- 3 [0] Chowdhury, S. C. Gillespie, J. and Sockalingam, S. (2019) "Inter-molecular interactions in ultrahigh molecular weight polyethylene single crystals." *Computational Materials Science*, 172, 109360-. doi: <https://doi.org/10.1016/j.commatsci.2019.109360>.
- 4 [20] Chowdhury, S. C. Wise, E. Ganesh, R. and Gillespie, J. (2019) "Effects of Surface Crack on the Mechanical Properties of Silica: A Molecular Dynamics Simulation Study." *Engineering Fracture Mechanics*, 207(1), 99-108. doi: <https://doi.org/10.1016/j.engfracmech.2018.12.025>.
- 5 [3] Haque, B. Z. Ali, M. Tamrakar, S. and Yen, C. O'Brien, D. Gillespie, J. Ganesh, R. and Yen, C. (2019) "Stochastic Micromechanical Modeling of Transverse Punch Shear Damage Behavior of Unidirectional Composites." *Journal of Composites Materials*, 53(9), 1197-1213. doi: <https://doi.org/10.1177/0021998318796174>.
- 6 [7] Li, Z. and Ghosh, S. (2019) "Developing Space-Time Boundary Conditions for Composite RVEs at High Strain-Rates." *International Journal of Solids and Structures*, 166, 197-212. doi: <https://doi.org/10.1016/j.ijsolstr.2019.02.019>.
- 7 [2] Li, Z. and Ghosh, S. (2019) "Micromechanics modeling and validation of thermal-mechanical damage in DER353 epoxy/borosilicate glass composite subject to high strain rate deformation." *International Journal of Impact Engineering*, 136, Art. No. 103414---. doi: <https://doi.org/10.1016/j.ijimpeng.2019.103414>.
- 8 [2] Sridhar, A. and Abrams, C. (2019) "Yield and Post-yield Behavior of Fatty-Acid-Functionalized Amidoamine-Epoxy Systems: A Molecular Simulation Study." *Journal of Dynamic Behavior of Materials*, 5, 143-149. doi: <https://doi.org/10.1007/s40870-019-00193-z>.
- 9 [4] Tamrakar, S. Ganesh, R. Haque, B. Z. and Gillespie, J. (2019) "Strain Rate Dependent Large Deformation Inelastic Behavior of An Epoxy Resin." *Journal of Composite Materials*, doi: <https://doi.org/10.1177/0021998319859054>.
- 10 [3] Tamrakar, S. Ganesh, R. Sockalingam, S. and Gillespie, J. (2019) "Rate dependent mode II traction separation law for S-2 glass/epoxy interface using a microdroplet test method." *Composites Part A: Applied Science and Manufacturing*, 124. doi: <https://doi.org/10.1016/j.compositesa.2019.105487>.
- 11 [13] Zhang, X. O'Brien, D. and Ghosh, S. (2019) "Parametrically Homogenized Continuum Damage Mechanics (PHCDM) Models for Composites from Micromechanical Analysis." *Computer Methods in Applied Mechanics and Engineering*, 346, 456-485. doi: <https://doi.org/10.1016/j.cma.2018.12.005>.

2018

- 1 [1] Abu-Obaid, A. and Gillespie, J. (2018) "Effects of abrasion on mechanical properties of Kevlar KM2-600 and S glass tows." *Textile Research Journal*, 89, 989-1002. doi: <https://doi.org/10.1177/0040517518760753>.
- 2 [24] An, Q. Tamrakar, S. Gillespie, J. Rider, A. and Thostenson, E. (2018) "Tailored Glass Fiber Interphases via Electrophoretic Deposition of Carbon Nanotubes: Fiber and Interphase Characterization." *Composite Science and Technology*, 166, 131-139. doi: <https://doi.org/10.1016/j.compscitech.2018.01.003>.
- 3 [9] Bhaduri, A. and Brady, L. (2018) "An efficient adaptive sparse grid collocation method through derivative estimation." *Probabilistic Engineering Mechanics*, 51, 11-22. doi: <https://doi.org/10.1016/j.proengmech.2017.11.002>.
- 4 [10] Bhaduri, A. He, Y. Shields, M. Graham-Brady, L. and Kirby, R. (2018) "Stochastic collocation approach with adaptive mesh refinement for parametric uncertainty analysis." *JOURNAL OF COMPUTATIONAL PHYSICS*, 371, 732-750. doi: <https://dx.doi.org/10.1016/j.jcp.2018.06.003>.
- 5 [16] Chowdhury, S. C. and Gillespie, J. (2018) "A molecular dynamics study of the effects of hydrogen bonds on mechanical properties of Kevlar® crystal." *Computational Material Science*, 148(1), 286-300. doi: <http://doi.org/10.1016/j.commatsci.2018.02.055>.
- 6 [20] Chowdhury, S. C. Wise, E. Ganesh, R. and Gillespie, J. (2018) "Effect of Surface Crack on the Mechanical Properties of Silica: A Molecular Dynamics Simulation Study." *Engineering Fracture Mechanics*, 207, 99-107. doi: <https://doi.org/10.1016/j.engfracmech.2018.12.025>.
- 7 [14] Chu, J. Claus, B. Parab, N. O'Brien, D. Sun, T. Fezzaa, K. and Chen, W. (2018) "Visualization of dynamic fiber-matrix interfacial shear debonding." *Journal of Materials Science*, 53(8), 5845-5859. doi: <https://doi.org/10.1007/s10853-017-1759-1>.
- 8 [7] Ganesh, R. Sockalingam, S. and Gillespie, J. (2018) "Dynamic effects of a single fiber break in unidirectional glass fiber-reinforced polymer composites: Effects of matrix plasticity." *Journal of Composite Materials*, 52(14), 1873-1886. doi: <http://doi.org/10.1177/0021998317737604>.
- 9 [0] Meyer, C. Bonyi, E. Haque, B. Z. O'Brien, D. Aslan, K. and Gillespie, J. (2018) "Ballistic Impact Experiments and Quantitative Assessments of Mesoscale Damage Modes in a Single-Layer Woven Composite." *Dynamic Behavior of Materials*, 1, 9-17. doi: https://doi.org/10.1007/978-3-319-95089-1_2.
- 10 [15] Meyer, C. Haque, B. Z. O'Brien, D. Getinet, N. Yu, J. Bonyi, E. Aslan, K. and Gillespie, J. (2018) "Mesoscale Ballistic Damage Mechanics of a Single-Ply Woven Glass/Epoxy Composite." *International Journal of Impact Engineering*, 113(1), 118-131. doi: <https://doi.org/10.1016/j.ijimpeng.2017.11.005>.
- 11 [3] Nie, Y. Parab, N. Chu, J. Kim, G. Sun, T. Fezzaa, K. Sterkenburg, R. and Chen, W. (2018) "Dynamic Crack Propagation from a Circular Defect in a Unidirectional CFRP Composite." *Journal of Composite Materials*, 52(25), 3539-3547. doi: <https://doi.org/10.1177/0021998318797394>.
- 12 [5] Srikanth, A. Kinaci, E. Vergara, J. Palmese, G. and Abrams, C. (2018) "The effect of alkyl chain length on mechanical properties of fatty-acid-functionalized amidoamine-epoxy systems." *Computational Materials Science*, 150, 70-76. doi: <https://doi.org/10.1016/j.commatsci.2018.03.073>.
- 13 [15] Tamrakar, S. Ganesh, R. Sockalingam, S. Haque, B. Z. and Gillespie, J. (2018) "Experimental Investigation of Strain Rate and Temperature Dependent Response of an Epoxy Resin Undergoing Large Deformation." *Journal of Dynamic Behavior of Materials*, 4(1), 114-128. doi: <https://doi.org/10.1007/s40870-018-0144-8>.
- 14 [0] Yeon, J. Chowdhury, S. C. Mrityunjay, D. and Gillespie, J. (2018) "Atomistic scale simulation for the inter-diffusion of Epoxy-Amine." *ASC 33rd Technical Conference*, doi: <https://doi.org/10.12783/asc33/25918>.

2017

- 1 [8] Chen, W. Hudspeth, M. Guo, Z. Lim, B. Horner, S. and Zheng, J. (2017) "Multi-scale experiments on soft body armors under projectile normal impact." *International Journal of Impact Engineering*, 108, 63-72. doi: <https://doi.org/10.1016/j.ijimpeng.2017.04.018>.
- 2 [22] Chowdhury, S. C. and Gillespie, J. (2017) "Silica - silane coupling agent interphase properties using molecular dynamics simulations." *Journal of Materials Science*, 52, 12981-12988. doi: <https://doi.org/10.1007/s10853-017-1412-z>.
- 3 [9] Chowdhury, S. C. Elder, R. Sirk, T. van Duin, A. and Gillespie, J. (2017) "Modeling of glycidoxypropyltrimethoxy silane compositions using molecular dynamics simulations." *Computational Materials Science*, 140, 82-88. doi: <http://dx.doi.org/10.1016/j.commatsci.2017.08.033>.
- 4 [19] Ganesh, R. Sockalingam, S. Haque, B. Z. and Gillespie, J. (2017) "Dynamic effects of single fiber break in unidirectional glass fiber-reinforced composites." *Journal of Composite Materials*, 51(9), 1307-1320. doi: <http://dx.doi.org/10.1177/0021998316669218>.
- 5 [9] Srikanth, A. Vergara, J. Palmese, G. and Abrams, C. (2017) "The effect of alkyl chain length on material properties of fatty-acid-functionalized amidoamine-epoxy systems." *European Polymer Journal*, 89, 1-12. doi: <https://doi.org/10.1016/j.eurpolymj.2017.01.037>.
- 6 [0] Tamrakar, S. Ganesh, R. Sockalingam, S. Haque, B. Z. and Gillespie, J. (2017) "Thermo-mechanical response of epoxy resin at different rates of loading." *Materials and Design*,
- 7 [5] Yang, J. Srikanth, A. Jang, C. and Abrams, C. (2017) "Relationships between molecular structure and thermomechanical properties of bio-based thermosetting polymers." *Journal of Polymer Science, Part B: Polymer Physics*, 55, 285-292. doi: <https://doi.org/10.1002/polb.24270>.
- 8 [11] Yeager, M. Simacek, P. and Advani, S. (2017) "Role of fiber distribution and air evacuation time on capillary driven flow into fiber tows." *Composites Part A: Applied Science and Manufacturing*, 93, 144-152. doi: <https://doi.org/10.1016/j.compositesa.2016.11.016>.

2016

- 1 [36] Bain, E. Knorr, D. Richardson, A. Masser, K. Yu, J. and Lenhart, J. (2016) "Failure processes governing high-rate impact resistance of epoxy resins filled with core-shell rubber nanoparticles." *Journal of Materials Science*, 51(5), 2347-2370. doi: <http://dx.doi.org/10.1007/s10853-015-9544-5>.
- 2 [28] Chen, W. (2016) "Experimental Methods for Characterizing Dynamic Response of Soft Materials." *Journal of Dynamic Behavior of Materials*, 2(1), 2-14. doi: <https://doi.org/10.1007/s40870-016-0047-5>.
- 3 [69] Chowdhury, S. C. Haque, B. Z. and Gillespie, J. (2016) "Molecular dynamics simulations of the structure and mechanical properties of silica glass using ReaxFF." *Journal of Materials Science*, 51(22), 10139-10159. doi: <https://link.springer.com/article/10.1007/s10853-016-0242-8>.
- 4 [1] Grujicic, M. Ramaswami, S. Snipes, J. Avuthu, V. Yen, C. and Cheeseman, B. (2016) "Application of the materials-by-design approach to armor-grade polymer-matrix composites for enhancement of ballistic-penetration resistance." *International Journal of Structural Integrity*, 7(1), 142-174. doi: <http://dx.doi.org/10.1108/IJSI-02-2015-0005>.
- 5 [9] Guo, S. Casem, D. Hudspeth, M. Farbaniec, L. Sun, J. and Chen, W. (2016) "Transverse compression of two high-performance ballistic fibers." *Textile Research Journal*, 86(5), 502-511. doi: <http://dx.doi.org/10.1177/0040517515592814>.
- 6 [39] Haque, B. Z. Chowdhury, S. C. and Gillespie, J. (2016) "Molecular Simulations of Stress Wave Propagation and Perforation of Graphene Sheets under Transverse Impact." *Carbon*, 102, 126-140. doi: <https://doi.org/10.1016/j.carbon.2016.02.033>.
- 7 [0] Jang, C. and Abrams, C. (2016) "Thermal and mechanical properties of thermosetting polymers using coarse-grained simulation." *The European Physical Journal Special Topics*, 225, 1775-1783. doi: <https://doi.org/10.1140/epjst/e2016-60143-0>.
- 8 [5] Jang, C. Sharifi, M. Palmese, G. and Abrams, C. (2016) "Toughness enhancement of thermosetting polymers using a novel partially reacted substructure curing protocol: A combined molecular simulation and experimental study." *Polymer*, 90, 249-255. doi: <https://doi.org/10.1016/j.polymer.2016.03.023>.
- 9 [7] Levine, S. Nie, Y. and Chen, W. (2016) "Dynamic Transverse Debonding of a Single Fiber." *Journal of Dynamic Behavior of Materials*, 2(4), 521-531. doi: <https://link.springer.com/article/10.1007/s40870-016-0086-y>.
- 10 [21] Li, Z. Ghosh, S. Getinet, N. and O'Brien, D. (2016) "Micromechanical modeling and characterization of damage evolution in glass fiber epoxy matrix composites." *Mechanics of Materials*, 99, 37-52. doi: <https://doi.org/10.1016/j.mechmat.2016.05.006>.
- 11 [13] Masser, K. Bain, E. Beyer, F. Savage, A. Yu, J. and Lenhart, J. (2016) "Influence of nano-scale morphology on impact toughness of epoxy blends." *Polymer*, 103, 337-346. doi: <https://doi.org/10.1016/j.polymer.2016.09.076>.
- 12 [9] Misumi, J. Ganesh, R. Sockalingam, S. and Gillespie, J. (2016) "Experimental characterization of tensile properties of epoxy resin by using micro-fiber specimens." *Journal of Reinforced Plastics and Composites*, 35(24), 1792-1801. doi: <http://dx.doi.org/10.1177/0731684416669248>.
- 13 [5] Sun, J. Hudspeth, M. and Chen, W. (2016) "Biaxial Shear/Tension Failure Behavior of Spectra Single Fibers." *Composites Part A: Applied Science and Manufacturing*, 88, 286-294. doi: <https://doi.org/10.1016/j.compositesa.2016.06.009>.
- 14 [79] Tamrakar, S. An, Q. Thostenson, E. Rider, A. and Gillespie, J. (2016) "Tailoring Interfacial Properties by Controlling Carbon Nanotube Coating Thickness on Glass Fibers Using Electrophoretic Deposition." *ACS Applied Materials & Interfaces*, 8(2), 1501-1510. doi: <http://dx.doi.org/10.1021/acsami.5b10903>.
- 15 [20] Tamrakar, S. Haque, B. Z. and Gillespie, J. (2016) "High rate test method for fiber-matrix interface characterization." *Polymer Testing*, 52, 174-183. doi: <http://dx.doi.org/10.1016/j.polymertesting.2016.04.016>.
- 16 [13] Yeager, M. Hwang, W. and Advani, S. (2016) "Prediction of capillary pressure for resin flow between fibers." *Composites Science and Technology*, 126, 130-138. doi: <https://doi.org/10.1016/j.compscitech.2016.02.014>.

2015

- 1 [21] Elder, R. Andzelm, J. and Sirk, T. (2015) "A molecular simulation study of the glass transition of cross-linked poly(dicyclopentadiene) networks." *Chemical Physics Letters*, 637, 103-109. doi: <https://doi.org/10.1016/j.cplett.2015.07.058>.
- 2 [30] Gao, H. Gillespie, J. Jensen, R. Li, W. Haque, B. Z. and McKnight, S. (2015) "Effect of fiber surface texture on the mechanical properties of glass fiber reinforced epoxy composite." *Composites Part A: Applied Science and Manufacturing*, 74, 10-17. doi: <https://doi.org/10.1016/j.compositesa.2015.03.023>.
- 3 [2] Ghosh, S. (2015) "Foundational aspects of a multi-scale modeling framework for composite materials." *Integrating Materials and Manufacturing Innovation*, 4(9), 1-28. doi: <http://dx.doi.org/10.1186/s40192-015-0036-x>.
- 4 [14] Haque, B. Z. and Gillespie, J. (2015) "A new penetration equation for ballistic limit analysis." *Journal of Thermoplastic Composite Materials*, 28(7), 950-972. doi: <http://dx.doi.org/10.1177/0892705713495430>.
- 5 [0] Haque, B. Z. and Gillespie, J. (2015) "Penetration and Perforation of Composite Structures." *Mechanical Engineering Research Journal*, 9, 37-42. doi: <http://www.cuet.ac.bd/merj/files/MERJ-Vol-9,%202013,%20page%2037-42.pdf>.
- 6 [21] Hudspeth, M. Claus, B. Parab, N. Lim, B. Sun, T. Fezza, K. and Chen, W. (2015) "In Situ Visual Observation of Fracture Processes in Several High-Performance Fibers." *Journal of Dynamic Behavior of Materials*, 1(1), 55-64. doi: <http://dx.doi.org/10.1007/s40870-015-0009-3>.
- 7 [30] Jang, C. Sirk, T. Andzelm, J. and Abrams, C. (2015) "Comparison of Crosslinking Algorithms in Molecular Dynamics Simulation of Thermosetting Polymers." *Macromolecular Theory and Simulations*, 24, 260-270. doi: <https://doi.org/10.1002/mats.201400094>.
- 8 [9] Karkkainen, R. (2015) "Dynamic micromechanical modeling of textile composite strength under impact and multi-axial loading." *Composites Part B: Engineering*, 83, 27-35. doi: <https://doi.org/10.1016/j.compositesb.2015.08.009>.
- 9 [41] Knorr, D. Masser, K. Elder, R. Sirk, T. Hindenlang, M. Yu, J. Richardson, A. Boyd, S. Spurgeon, W. and Lenhart, J. (2015) "Overcoming the structural versus energy dissipation trade-off in highly crosslinked polymer networks: Ultrahigh strain rate response in polydicyclopentadiene." *Composites Science and Technology*, 114, 17-25. doi: <https://doi.org/10.1016/j.compscitech.2015.03.021>.
- 10 [25] Masser, K. Knorr, D. Hindenlang, M. Yu, J. Richardson, A. Strawhecker, K. Beyer, F. and Lenhart, J. (2015) "Relating structure and chain dynamics to ballistic performance in transparent epoxy networks exhibiting nanometer scale heterogeneity." *Polymer*, 58, 96-106. doi: <https://doi.org/10.1016/j.polymer.2014.12.027>.
- 11 [6] Mc Aninch, I. Palmese, G. Lenhart, J. and La Scala, J. (2015) "Epoxy-amine networks with varying epoxy polydispersity." *Journal of Applied Polymer Science*, 132(8), 1097-4628. doi: <http://dx.doi.org/10.1002/app.41503>.
- 12 [31] Sharifi, M. Jang, C. Abrams, C. and Palmese, G. (2015) "Epoxy Polymer Networks with Improved Thermal and Mechanical Properties via Controlled Dispersion of Reactive Toughening Agents." *Macromolecules*, 48(20), 7495-7502. doi: <http://dx.doi.org/10.1021/acs.macromol.5b00677>.
- 13 [1] Yeager, M. and Advani, S. (2015) "Numerical model of fiber wetting with finite resin volume." *Integrating Materials and Manufacturing Innovation*, 4(3), 1-16. doi: <http://dx.doi.org/10.1186/s40192-015-0032-1>.

2014

- 1 [50] Dey, M. Deitzel, J. Gillespie, J. and Schweiger, S. (2014) "Influence of sizing formulations on glass/epoxy interphase properties." *Composites Part A: Applied Science and Manufacturing*, 63, 59-67. doi: <http://dx.doi.org/10.1016/j.compositesa.2014.04.006>.
- 2 [26] Jang, C. Sharifi, M. Palmese, G. and Abrams, C. (2014) "Crosslink network rearrangement via reactive encapsulation of solvent in epoxy curing: A combined molecular simulation and experimental study." *Polymer*, 55(16), 3859-3868. doi: <http://dx.doi.org/10.1016/j.polymer.2014.06.022>.
- 3 [40] Sharifi, M. Jang, C. Abrams, C. and Palmese, G. (2014) "Toughened epoxy polymers via rearrangement of network topology." *J. Mater. Chem. A*, 2, 16071-16082. doi: <http://dx.doi.org/10.1039/C4TA03051F>.
- 4 [40] Sockalingam, S. Gillespie, J. and Keefe, M. (2014) "On the transverse compression response of Kevlar KM2 using fiber-level finite element model." *International Journal of Solids and Structures*, 51(13), 2504-2517. doi: <https://doi.org/10.1016/j.ijsolstr.2014.03.020>.
- 5 [56] Sockalingam, S. Mody, P. Gillespie, J. and Keefe, M. (2014) "Finite element analysis of the microdroplet test method using cohesive zone model of the fiber/matrix interface." *Composites Part A: Applied Science and Manufacturing*, 56, 239-247. doi: <https://doi.org/10.1016/j.compositesa.2013.10.021>.

2013

- [11] Bogetti, T. Staniszewski, J. Burkins, M. Hoppel, C. Gillespie, J. and Tamrakar, S. (2013) "Predicting the nonlinear response and progressive failure of composite laminates under triaxial loading: Correlation with experimental results." *Journal of Composite Materials*, 47, 793-804. doi: <http://dx.doi.org/10.1177/0021998312462616>.
- [27] McAninch, I. Palmese, G. Lenhart, J. and Lascaia, J. (2013) "Characterization of epoxies cured with bimodal blends of polyetheramines." *Journal of Applied Polymer Science*, 130(3), 1621-1631. doi: <http://dx.doi.org/10.1002/app.39322>.

2012

- [25] Bogetti, T. Staniszewski, J. Burns, B. Hoppel, C. Gillespie, J. and Tierney, J. (2012) "Predicting the nonlinear response and progressive failure of composite laminates under tri-axial loading." *Journal of Composite Materials*, 46(19), 2443-2459. doi: <https://doi.org/10.1177/0021998312449889>.
- [0] Haque, B. Z. and Gillespie, J. (2012) "A Quasi-Static Penetration Model of Ballistic Penetration of Thick-Section Composites." *Failure in Composites*, 4, doi: https://www.researchgate.net/publication/286697762_A_quasi-static_penetration_model_of_ballistic_penetration_of_thick-section_composites.
- [8] Haque, B. Z. and Gillespie, J. (2012) "A combined theoretical-semiempirical penetration model of ballistic penetration of thick section composites." *Journal of Thermoplastic Composite Materials*, 25(5), 631-659. doi: <http://dx.doi.org/10.1177/0892705712450296>.
- [6] Haque, B. Z. Harrington, J. and Gillespie, J. (2012) "Multi-hit ballistic impact on S-2 glass/SC15 thick-section composites: finite element analyses." *The Journal of Strain Analysis for Engineering Design*, 47(7), 495-512. doi: <http://dx.doi.org/10.1177/0309324712456823>.
- [5] Karkkainen, R. and McWilliams, B. (2012) "Dynamic micromechanical modeling of textile composites with cohesive interface failure." *Journal of Composite Materials*, 46(18), 2203-2218. doi: <https://doi.org/10.1177/0021998311430544>.
- [7] Karkkainen, R. and Yen, C. (2012) "Dynamic modeling for rate-dependent and mode-dependent cohesive interface failure analysis." *Journal of Composite Materials*, 46(18), 2193-2201. doi: <https://doi.org/10.1177/0021998311430543>.
- [0] Lopatnikov, S. Shevchenko, N. and Gillespie, J. (2012) "Device and Method for Investigation of Mechanical Properties of Fibers under High-Strain Rate Tensile Load." *Cornell University Library*, 1, 1-6. doi: <https://arxiv.org/pdf/1201.0916.pdf>.

Integrative

2019

- [2] Mallick, D. and Ramesh, K. (2019) "Dynamic fragmentation of boron carbide using laser-driven flyers." *—*, doi: <https://doi.org/10.1016/j.jimpeng.2019.103416>.
- [13] Mallick, D. Zhao, M. Bosworth, B. Schuster, B. Foster, M. A. and Ramesh, K. (2019) "A Simple Dual-Beam Time-Multiplexed Photon Doppler Velocimeter for Pressure-Shear Plate Impact Experiments." *Experimental Mechanics*, 59(1), 41-49. doi: <https://doi.org/10.1007/s11340-018-0435-y>.
- [15] Mallick, D. Zhao, M. Parker, J. Kannan, V. Bosworth, B. Sagapuram, D. Foster, M. A. and Ramesh, K. (2019) "Laser-Driven Flyers and Nanosecond-Resolved Velocimetry for Spall Studies in Thin Metal Foils." *Experimental Mechanics*, 59(5), 611-628. doi: <https://doi.org/10.1007/s11340-019-00519-x>.
- [2] Yu, H. (2019) "Silver Nanoparticle Surface Enabled Self-Assembly of Organic Dye Molecules." *Materials*, 12(16), 1-14. doi: <https://doi.org/10.3390/ma12162592>.

2017

- [0] Barnes, B. Becker, R. Knap, J. and Brennan, J. (2017) "LAMMPS integrated materials engine (LIME) for efficient automation of particle-based simulations: application to equation of state generation." *Modelling and Simulation in Materials Science and Engineering*, 25(5), 55006-55006. doi: <https://doi.org/10.1088/1361-651X/aa6e36>.
- [5] Mallick, D. Shaeffer, M. Dean, S. and Ramesh, K. (2017) "Investigating the velocity envelope of laser-driven micro-flyers for hypervelocity impact experiments." *Procedia Engineering*, 207, 215-222. doi: <https://doi.org/10.1016/j.proeng.2017.09.776>.
- [6] Voisin, T. Grapes, M. Zhang, Y. Lorenzo, N. Ligda, J. Schuster, B. and Weihs, T. (2017) "TEM sample preparation by femtosecond laser machining and ion milling for high-rate TEM straining experiments." *Ultramicroscopy*, 175, 1-8. doi: <https://doi.org/10.1016/j.ultramic.2016.12.001>.
- [5] Wildman, R. O'Grady, J. and Gazonas, G. (2017) "A hybrid multiscale finite element/peridynamics method." *International Journal of Fracture*, 207(1), 41-53. doi: <http://dx.doi.org/10.1007/s10704-017-0218-y>.

2016

- [6] Carey, N. Budavari, T. Daphalapurkar, N. and Ramesh, K. (2016) "Data integration for materials research." *Integrating Materials and Manufacturing Innovation*, 5(1), 7-7. doi: <https://doi.org/10.1186/s40192-016-0049-0>.
- [53] Clayton, J. and Knap, J. (2016) "Phase field modeling and simulation of coupled fracture and twinning in single crystals and polycrystals." *Computer Methods in Applied Mechanics and Engineering*, 312, 447-467. doi: <https://doi.org/10.1016/j.cma.2016.01.023>.
- [16] Knap, J. Spear, C. Becker, R. and Powell, D. (2016) "A computational framework for scale-bridging in multi-scale simulations." *International Journal for Numerical Methods in Engineering*, 108(13), 1649-1666. doi: <http://dx.doi.org/10.1002/nme.5270>.

2015

- [21] Clayton, J. and Knap, J. (2015) "Nonlinear phase field theory for fracture and twinning with analysis of simple shear." *Philosophical Magazine*, 95(24), 2661-2696. doi: <http://dx.doi.org/10.1080/14786435.2015.1076176>.
- [94] Clayton, J. and Knap, J. (2015) "Phase field modeling of directional fracture in anisotropic polycrystals." *Computational Materials Science*, 98, 158-169. doi: <https://doi.org/10.1016/j.commatsci.2014.11.009>.
- [0] Strack, O. Leavy, B. and Brannon, R. (2015) "Aleatory uncertainty and scale effects in computational damage models for failure and fragmentation." *International Journal for Numerical Methods in Engineering*, 102, 468-495. doi: <http://dx.doi.org/10.1002/nme.4699>.
- [14] Zhang, L. Jasa, J. Gazonas, G. Jerusalem, A. and Negahban, M. (2015) "Extracting continuum-like deformation and stress from molecular dynamics simulations." *Computer Methods in Applied Mechanics and Engineering*, 283, 1010-1031. doi: <https://doi.org/10.1016/j.cma.2014.10.018>.

2014

- [46] Brennan, J. Lisal, M. Moore, J. Izvekov, S. Schweigert, I. and Larentzos, J. (2014) "Coarse-Grain Model Simulations of Nonequilibrium Dynamics in Heterogeneous Materials." *The Journal of Physical Chemistry Letters*, 5(12), 2144-2149. doi: <https://doi.org/10.1021/jz500756s>.
- [0] Clayton, J. (2014) "An alternative three-term decomposition for single crystal deformation motivated by non-linear elastic dislocation solutions." *The Quarterly Journal of Mechanics and Applied Mathematics*, 67(1), 127-158. doi: <https://doi.org/10.1093/qjmath/hbt026>.
- [28] Izvekov, S. and Rice, B. (2014) "Multi-scale coarse-graining of non-conservative interactions in molecular liquids." *The Journal of Chemical Physics*, 140(10), 104-104. doi: <http://dx.doi.org/10.1063/1.4866142>.
- [5] Weile, D. Hopkins, D. Gazonas, G. and Powers, B. (2014) "On the proper formulation of Maxwellian electrodynamics for continuum mechanics." *Continuum Mechanics and Thermodynamics*, 26(3), 387-401. doi: <http://dx.doi.org/10.1007/s00161-013-0308-7>.

- 5 [28] Wildman, R. and Gazonas, G. (2014) "A finite difference-augmented peridynamics method for reducing wave dispersion." *International Journal of Fracture*, 190(1), 39-52. doi: <http://dx.doi.org/10.1007/s10704-014-9973-1>.
- 6 [0] Zimmerman, J. Sabau, A. Zaeem, M. Tschopp, M. and Spearot, D. (2014) "Algorithm Development in Computational Materials Science." *JOM*, 66(3), 397-398. doi: <http://dx.doi.org/10.1007/s11837-013-0846-2>.

2013

- 1 [12] Beaudet, T. Mattson, W. and Rice, B. (2013) "New form of polymeric nitrogen from dynamic shock simulation." *The Journal of Chemical Physics*, 138(5), 54503-54503. doi: <http://dx.doi.org/10.1063/1.4789307>.
- 2 [1] Grinfeld (a.k.a. Greenfield), M. (2013) "Thermodynamic models of phase transformations and failure waves." *Wave Motion*, 50(7), 1118-1126. doi: <https://doi.org/10.1016/j.wavemoti.2013.04.010>.
- 3 [6] Satapathy, S. and Hsieh, K. (2013) "Jump conditions for Maxwell equations and their consequences." *AIP Advances*, 3(1), 12120-12120. doi: <http://dx.doi.org/10.1063/1.4789794>.
- 4 [23] Taylor, D. (2013) "Intermolecular Forces and Molecular Dynamics Simulation of 1,3,5-Triamino-2,4,6-trinitrobenzene (TATB) Using Symmetry Adapted Perturbation Theory." *The Journal of Physical Chemistry A*, 117(16), 3507-3520. doi: <http://dx.doi.org/10.1021/jp4005289>.

2012

- 1 [6] Gazonas, G. and Velo, A. (2012) "Analytical solutions for the resonance response of Goupillaud-type elastic media using z-transform methods." *Wave Motion*, 49(1), 135-151. doi: <https://doi.org/10.1016/j.wavemoti.2011.08.002>.
- 2 [18] McWilliams, R. Kadry, Y. Mahmod, M. Goncharov, A. and Ciezak-Jenkins, J. (2012) "Structural and chemical properties of the nitrogen-rich energetic material triaminoguanidinium 1-methyl-5-nitriminotetrazolate under pressure." *The Journal of Chemical Physics*, 137(5), 54501-54501. doi: <http://dx.doi.org/10.1063/1.4732097>.

Metals

2021

- 1 [0] Adibi S., Wilkerson J.W. (2021) "Time-temperature superposition for cavitation resistance of metals with nonequilibrium vacancy concentrations." *Extreme Mechanics Letters*, 47, doi: <https://doi.org/10.1016/j.eml.2021.101350>.
- 2 [0] Eswarappa Prameela S., Peng Y., Hollenweger Y., Burigede L., Chen J., Kecskes L., Kochmann D.M., Falk M., Weihs T.P. (2021) "Strengthening magnesium by design: integrating alloying and dynamic processing." *Mechanics of Materials*,
- 3 [0] Eswarappa Prameela S., Ramesh K.T., Weihs T.P. (2021) "Young scholars benefit from collaboration." *Nature Materials*, 20(8), 1169-1170. doi: <https://doi.org/10.1038/s41563-021-01009-z>.
- 4 [4] Eswarappa Prameela S., Yi P., Falk M.L., Weihs T.P. (2021) "Strategic control of atomic-scale defects for tuning properties in metals." *Nature Reviews Physics*, 3(3), 148-149. doi: <https://doi.org/10.1038/s42254-021-00287-5>.
- 5 [0] Kang M., Dixit N., Hazeli K., Xie K., Hemker K., Ramesh K.T. (2021) "The mechanical behavior of single crystal and polycrystalline pure magnesium." *Mechanics of Materials*, 163, doi: <https://doi.org/10.1016/j.mechmat.2021.104078>.
- 6 [0] Kecskes L.J., Krywopusk N.M., Hollenweger Y., Krynicki J.N., Prameela S.E., Yi P., Liu B., Falk M.L., Kochmann D.M., Weihs T.P. (2021) "Recrystallization mechanisms, grain refinement, and texture evolution during ECAE processing of Mg and its alloys." *Mechanics of Materials*, 162, doi: <https://doi.org/10.1016/j.mechmat.2021.104067>.
- 7 [1] Mallick D.D., Prameela S.E., Ozturk D., Williams C.L., Kang M., Valentino G.M., Lloyd J.T., Wilkerson J.W., Weihs T.P., Ramesh K.T. (2021) "Spall strength in alloyed magnesium: A compendium of research efforts from the CMEDE 10-year effort." *Mechanics of Materials*, 162, doi: <https://doi.org/10.1016/j.mechmat.2021.104065>.
- 8 [2] Nguyen T., Francom D.C., Luscher D.J., Wilkerson J.W. (2021) "Bayesian calibration of a physics-based crystal plasticity and damage model." *Journal of the Mechanics and Physics of Solids*, 149, doi: <https://doi.org/10.1016/j.jmps.2020.104284>.
- 9 [1] Ravaji B., Datta S., Foster C., Lloyd J.T., Wilkerson J.W., Joshi S.P. (2021) "Texture effects and rate-dependent behaviors of notched magnesium bars." *Mechanics of Materials*, 162, doi: <https://doi.org/10.1016/j.mechmat.2021.104042>.
- 10 [2] Ravaji, B. Joshi, SP (2021) "A Crystal Plasticity Investigation of Grain Size-Texture Interaction in Magnesium Alloys." *Acta Materialia*, 208, doi: <https://doi.org/10.1016/j.actamat.2021.116743>.
- 11 [0] Wei, Q, Ramesh, KT, Hufnagel, TC, Wilkerson, JW, El-Awady, J, Kimberley, J, Ravaji, B, Joshi, SP (2021) "Insights from the MEDE Program: An Overview of Microstructure-Property Linkages in the Dynamic Behaviors of Magnesium Alloys.." *Mechanics of Materials*, 163, doi: <https://doi.org/10.1016/j.mechmat.2021.104084>.
- 12 [0] Xie K.Y., Hazeli K., Dixit N., Ma L., Ramesh K.T., Hemker K.J. (2021) "Twin boundary migration mechanisms in quasi-statically compressed and plate-impacted mg single crystals." *Science Advances*, 7(42), doi: <https://doi.org/10.1126/sciadv.abg3443>.

2020

- 1 [8] Adibi, S. and Wilkerson, J. (2020) "Evolving structure-property relationships in metals with nonequilibrium concentrations of vacancies." *Journal of Applied Physics*, 127(13), doi: <https://doi.org/10.1063/5.0004014>.
- 2 [3] Baweja, S, Ramesh, VR, Indurkar, PP, Joshi, SP (2020) "A Numerical Study of Strain-rate and Triaxiality Effects in Magnesium Alloys." *Journal of Dynamic Behavior of Materials*, 6, 459-471. doi: <https://doi.org/10.1007/s40870-020-00259-3>.
- 3 [1] Courte L., Bhattacharya K., Dondl P. (2020) "Bounds on precipitate hardening of line and surface defects in solids." *Zeitschrift fur Angewandte Mathematik und Physik*, 71(3), doi: <https://doi.org/10.1007/s00033-020-01327-3>.
- 4 [0] Eswarappa Prameela S., McGuigan P.M., Brusini A., Glenn T.W., Weihs T.P. (2020) "Looking at education through the microscope." *Nature Reviews Materials*, 5(12), 865-867. doi: <https://doi.org/10.1038/s41578-020-00246-z>.
- 5 [2] Eswarappa Prameela S., Weihs T.P. (2020) "A defect determines strength." *Nature Physics*, 16(7), 816-. doi: <https://doi.org/10.1038/s41567-020-0961-2>.
- 6 [7] Fite J., Eswarappa Prameela S., Slotwinski J.A., Weihs T.P. (2020) "Evolution of the microstructure and mechanical properties of additively manufactured AlSi10Mg during room temperature holds and low temperature aging." *Additive Manufacturing*, 36, doi: <https://doi.org/10.1016/j.addma.2020.101429>.
- 7 [11] Indurkar, PP, Baweja, S, Perez, R, Joshi, SP (2020) "Predicting Textural Variability Effects in Plasticity and Stability of Hexagonal Metals: Application to Magnesium and its Alloys.." *International Journal of Plasticity*, 132(102762), doi: <https://doi.org/10.1016/j.ijplas.2020.102762>.
- 8 [4] Kumar S., Tutcuoglu A.D., Hollenweger Y., Kochmann D.M. (2020) "A meshless multiscale approach to modeling severe plastic deformation of metals: Application to ECAE of pure copper." *Computational Materials Science*, 173, doi: <https://doi.org/10.1016/j.commatsci.2019.109329>.
- 9 [4] Kumar S., Vidyasagar A., Kochmann D.M. (2020) "An assessment of numerical techniques to find energy-minimizing microstructures associated with nonconvex potentials." *International Journal for Numerical Methods in Engineering*, 121(7), 1595-1628. doi: <https://doi.org/10.1002/nme.6280>.
- 10 [3] Mallick, D. Parker, J. Wilkerson, J. and Ramesh, K. (2020) "Estimating Void Nucleation Statistics in Laser-Driven Spall." *Journal of Dynamic Behavior of Materials*, doi: <https://doi.org/10.1007/s40870-020-00248-6>.
- 11 [2] Mallick, D. Wilkerson, J. and Williams, C. (2020) "A Concise Note on Deformation Twinning and Spall Failure in Magnesium at the Extremes." *Journal of Dynamic Behavior of Materials*, doi: <https://doi.org/10.1007/s40870-020-00261-9>.

- 12 [11] Mallick, D. Williams, C. and Wilkerson, J. (2020) "A Brief Review of Spall Failure in Pure and Alloyed Magnesium." *Journal of Dynamic Behavior of Materials*, doi: <https://doi.org/10.1007/s40870-020-00233-z>.
- 13 [14] Nguyen, T. Luscher, D. and Wilkerson, J. (2020) "A physics-based model and simple scaling law to predict the pressure dependence of single crystal spall strength." *Journal of the Mechanics and Physics of Solids*, 137, doi: <https://doi.org/10.1016/j.jmps.2020.103875>.
- 14 [6] Nitol, M. Adibi, S. Barrett, C. and Wilkerson, J. (2020) "Solid solution softening in dislocation-starved Mg–Al alloys." *Mechanics of Materials*, doi: <https://doi.org/10.1016/j.mechmat.2020.103588>.
- 15 [2] Olinger, A. Foster, C. and Wilkerson, J. (2020) "Homogenized Modeling of Anisotropic Impact Damage in Rolled AZ31B with Aligned Second-Phase Particles." *Journal of Dynamic Behavior of Materials*, doi: <https://doi.org/10.1007/s40870-020-00267-3>.
- 16 [3] Ponga M., Bhattacharya K., Ortiz M. (2020) "Large scale ab-initio simulations of dislocations." *Journal of Computational Physics*, 407, doi: <https://doi.org/10.1016/j.jcp.2020.109249>.
- 17 [9] Prameela S.E., Yi P., Medeiros B., Liu V., Kecskes L.J., Falk M.L., Weihs T.P. (2020) "Deformation assisted nucleation of continuous nanoprecipitates in Mg–Al alloys." *Materialia*, 9, doi: <https://doi.org/10.1016/j.mtla.2019.100583>.
- 18 [7] Williams, C. Kale, C. Turnage, S. Shannahan, L. Li, B. Solanki, K. Becker, R. Hufnagel, T. and Ramesh, K. (2020) "Real-time observation of twinning-detwinning in shock-compressed magnesium via time-resolved in situ synchrotron XRD experiments." *Phys. Rev. Materials*, 4(8), 083603- doi: <https://doi.org/10.1103/PhysRevMaterials.4.083603>.
- 19 [0] Zhao M., Ramesh K.T. (2020) "Deformation and Failure Mechanisms in a Magnesium Alloy Under Uniaxial Compressive Loading." *Journal of Dynamic Behavior of Materials*, 6(3), 303-316. doi: <https://doi.org/10.1007/s40870-020-00246-8>.

2019

- 1 [1] Ghosh, S. and Bhattacharya, K. (2019) "Influence of thermomechanical loads on the energetics of precipitation in magnesium-aluminum alloys." *Acta Materialia*, 193, 28-39. doi: <https://doi.org/10.1016/j.actamat.2020.03.007>.
- 2 [8] Indurkar, P. and Joshi, S. P. (2019) "Void Growth and Coalescence in Porous Plastic Solids With Sigmoidal Hardening." *Journal of Applied Mechanics*, 86(9), 1-12. doi: <https://doi.org/10.1115/1.4043519>.
- 3 [11] Kannan, V. Ma, X. Krywopusk, N. Kecskes, L. Weihs, T. and Ramesh, K. (2019) "The effect of strain rate on the mechanisms of plastic flow and failure of an ECAE AZ31B magnesium alloy." *Journal of Materials Science*, 54(20), 13394-13419. doi: <https://doi.org/10.1007/s10853-019-03838-5>.
- 4 [20] Lloyd J.T., Matejunas A.J., Becker R., Walter T.R., Priddy M.W., Kimberley J. (2019) "Dynamic tensile failure of rolled magnesium: Simulations and experiments quantifying the role of texture and second-phase particles." *International Journal of Plasticity*, 114, 174-195. doi: <https://doi.org/10.1016/j.ijplas.2018.11.002>.
- 5 [44] Ma X.L., Eswarappa Prameela S., Yi P., Fernandez M., Krywopusk N.M., Kecskes L.J., Sano T., Falk M.L., Weihs T.P. (2019) "Dynamic precipitation and recrystallization in Mg-9wt.%Al during equal-channel angular extrusion: A comparative study to conventional aging." *Acta Materialia*, 172, 185-199. doi: <https://doi.org/10.1016/j.actamat.2019.04.046>.
- 6 [22] Nguyen, T. Luscher, D. and Wilkerson, J. (2019) "The role of elastic and plastic anisotropy in intergranular spall failure." *Acta Materialia*, 168, 1-12. doi: <https://doi.org/10.1016/j.actamat.2019.01.033>.
- 7 [25] Selvarajou, B. Joshi, S. P. and Benzerga, A. (2019) "Void growth and coalescence in hexagonal close packed crystals." *Journal of the Mechanics and Physics of Solids*, 125(1), 198-224. doi: <https://doi.org/10.1016/j.jmps.2018.12.012>.
- 8 [0] Tang, X. Nguyen, T. Yao, X. and Wilkerson, J. (2019) "Effects of free volume softening on the dynamic void growth in metallic glasses." *Journal of the Mechanics and Physics of Solids*,
- 9 [2] Tutcuoglu, A. Hollenweger, Y. Stoy, A. and Kochmann, D. (2019) "High- vs. low-fidelity models for dynamic recrystallization in copper." *Materialia*, 7, doi: <https://doi.org/10.1016/j.mtla.2019.100411>.
- 10 [10] Wilkerson, J. (2019) "Anomalous size effects in nanoporous materials induced by high surface energies." *Journal of Materials Research*, 34(13), 2337-2346. doi: <https://doi.org/10.1557/jmr.2019.100>.
- 11 [5] Yi, P. and Falk, M. L. (2019) "Thermally activated twin thickening and solute softening in magnesium alloys - a molecular simulation study." *Scripta Materialia*, 162, 195-199. doi: <https://doi.org/10.1016/j.scriptamat.2018.11.021>.
- 12 [0] Yi, P. Eswarappa, S. Weihs, T. and Falk, M. L. (2019) "Precipitation enhanced by stress induced local melting near dislocation in Mg-Al alloys." _

2018

- 1 [16] Ananthan, V. Tutcuoglu, A. and Kochmann, D. (2018) "Deformation patterning in finite-strain crystal plasticity by spectral homogenization with application to magnesium." *Computer Methods in Applied Mechanics and Eng.*, 335, doi: <https://doi.org/10.1016/j.cma.2018.03.003>.
- 2 [6] Daphalapurkar, N. Patil, S. Nguyen, T. Eswar, P. and Ramesh, K. (2018) "A crystal plasticity model for body-centered cubic molybdenum: Experiments and simulations." *Materials Science & Engineering A*, 738, 283-294. doi: <https://doi.org/10.1016/j.msea.2018.09.099>.
- 3 [0] Kannan, V. Hazeli, K. and Ramesh, K. (2018) "The mechanics of dynamic twinning in single crystal magnesium." *Journal of the Mechanics and Physics of Solids*, 120, 154-178. doi: <https://doi.org/10.1016/j.jmps.2018.03.010>.
- 4 [11] Srivastava K., Rao S.I., El-Awady J.A. (2018) "Unveiling the role of super-jogs and dislocation induced atomic-shuffling on controlling plasticity in magnesium." *Acta Materialia*, 161, 182-193. doi: <https://doi.org/10.1016/j.actamat.2018.09.010>.
- 5 [11] Tutcuoglu, A. Ananthan, V. Bhattacharya, K. and Kochmann, D. (2018) "Stochastic modeling of discontinuous dynamic recrystallization at finite strains in hcp metals." *Journal of the Mechanics and Physics of Solids*, 122, 590-. doi: <https://doi.org/10.1016/j.jmps.2018.09.032>.
- 6 [14] Vidyasagar A., Krodol S., Kochmann D.M. (2018) "Microstructural patterns with tunable mechanical anisotropy obtained by simulating anisotropic spinodal decomposition." *Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences*, 474(2218), doi: <https://doi.org/10.1098/rspa.2018.0535>.
- 7 [25] Zhao, M. Kannan, V. and Ramesh, K. (2018) "The dynamic plasticity and dynamic failure of a magnesium alloy under multiaxial loading." *Acta Materialia*, 154, 124-136. doi: <https://doi.org/10.1016/j.actamat.2018.05.012>.

2017

- 1 [94] Barrett, C. Imandoust, A. Oppedal, A. Inal, K. Tschopp, M. and Kadiri, H. (2017) "Effect of grain boundaries on texture formation during dynamic recrystallization of magnesium alloys." *Acta Materialia*, 128, 270-283. doi: <https://doi.org/10.1016/j.actamat.2017.01.063>.
- 2 [9] Chang, Y. Lloyd, J. Becker, R. and Kochmann, D. (2017) "Modeling microstructure evolution in magnesium: Comparison of detailed and reduced-order kinematic models." *Mechanics of Materials*, 108, 40-57. doi: <https://doi.org/10.1016/j.mechmat.2017.02.007>.
- 3 [15] Dixit, N. Farbaniec, L. and Ramesh, K. (2017) "Twinning in single crystal Mg under microsecond impact along the $\langle a \rangle$ axis." *Materials Science and Engineering A-Structural Materials Properties Microstructure and Processing*, 693, 22-25. doi: <http://dx.doi.org/10.1016/j.msea.2017.03.074>.
- 4 [13] Fan, H. Tang, J. Tian, X. Wang, Q. Tian, X. and El-Awady, J. (2017) "Core structures and mobility of dislocations in magnesium." *Scripta Materialia*, 135, 37-40. doi: <https://doi.org/10.1016/j.scriptamat.2017.03.012>.
- 5 [38] Fan, H. Wang, Q. Tian, X. and El-Awady, J. (2017) "Temperature effects on the mobility of pyramidal dislocations in magnesium." *Scripta Materialia*, 127, 68-71. doi: <https://doi.org/10.1016/j.scriptamat.2016.09.002>.
- 6 [19] Farbaniec, L. Williams, C. Kecskes, L. Becker, R. and Ramesh, K. (2017) "Spall response and failure mechanisms associated with a hot-extruded AMX602 Mg alloy." *Materials Science and Engineering: A*, 707, 725-731. doi: <https://doi.org/10.1016/j.msea.2017.09.105>.
- 7 [15] Lloyd, J. and Priddy, M. (2017) "Simulating strain localization in rolled magnesium." *Acta Materialia*, 129, 149-158. doi: <https://doi.org/10.1016/j.actamat.2017.02.043>.

- 8 [29] Nguyen, T. Luscher, D. and Wilkerson, J. (2017) "A dislocation-based crystal plasticity framework for dynamic ductile failure of single crystals." *Journal of the Mechanics and Physics of Solids*, 108, 1-29. doi: <https://doi.org/10.1016/j.jmps.2017.07.020>.
- 9 [11] Paudel, Y. Barrett, C. Tschopp, M. Inal, K. and Kadiri, H. (2017) "Beyond initial twin nucleation in hcp metals: Micromechanical formulation for determining twin spacing during deformation." *Acta Materialia*, 133, 134-146. doi: <https://doi.org/10.1016/j.actamat.2017.05.013>.
- 10 [44] Sim, G. Kim, G. Lavenstein, S. Hamza, M. Fan, H. and El-Awady, J. (2017) "Anomalous hardening in magnesium driven by a size-dependent transition in deformation modes." *Acta Materialia*, doi: <https://doi.org/10.1016/j.actamat.2017.10.033>.
- 11 [20] Srivastava, K. and El-Awady, J. (2017) "Deformation of magnesium during c-axis compression at low temperatures." *Acta Materialia*, 133, 282-292. doi: <https://doi.org/10.1016/j.actamat.2017.05.039>.
- 12 [0] Srivastava, K. and El-Awady, J. (2017) "Dislocation Orientation Effects on the on the anisotropy of Pyramidal Slip in Magnesium." *Physical Review Letters*,
- 13 [0] Wang, F. Barrett, C. Hazeli, K. Molodov, K. Al-Samman, T. Oppedal, A. Molodov, D. Kotsos, A. Ramesh, K. El, K. and Agnew, S. (2017) "The Effect of $\sqrt{10}$ Twin Boundary on the Evolution of Defect Substructure." *Magnesium Technology*, 1, 175-180. doi: http://dx.doi.org/10.1007/978-3-319-52392-7_27.
- 14 [29] Wang, F. Hazeli, K. Molodov, K. Barrett, C. Al-Samman, T. Molodov, D. Kotsos, A. Ramesh, K. El, K. and Agnew, S. (2017) "Characteristic dislocation substructure in $\sqrt{10}$ magnesium." *Scripta Materialia*, 143, 8185-8185. doi: <http://dx.doi.org/10.1016/j.scriptamat.2017.09.015>.
- 15 [9] Wang, P. Gao, W. Wilkerson, J. Liechti, K. and Huang, R. (2017) "Cavitation of water by volume-controlled stretching." *Extreme Mechanics Letters*, 11, 59-67. doi: <https://doi.org/10.1016/j.eml.2016.12.004>.
- 16 [14] Wang, W. Wang, Y. Shang, S. Darling, K. Kim, H. Tang, B. Kou, H. Mathaudhu, S. Hui, X. Li, J. Kecskes, L. and Liu, Z. (2017) "Strengthening Mg by self-dispersed nano-lamellar faults." *Materials Research Letters*, 5(6), 415-425. doi: <http://dx.doi.org/10.1080/21663831.2017.1308973>.
- 17 [41] Wilkerson, J. (2017) "On the micromechanics of void dynamics at extreme rates." *International Journal of Plasticity*, 95, 21-42. doi: <http://dx.doi.org/10.1016/j.ijplas.2017.03.008>.
- 18 [0] Yi, P. Cammarata, R. and Falk, M. L. (2017) "Solute softening and defect generation during prismatic slip in magnesium alloys." *Modelling and Simulation in Materials Science and Engineering*, 25, doi: <https://doi.org/10.1088/1361-651X/aa87fc>.

2016

- 1 [21] Aubry, S. Rhee, M. Hommes, G. Bulatov, V. and Arsenlis, A. (2016) "Dislocation dynamics in hexagonal close-packed crystals." *Journal of the Mechanics and Physics of Solids*, 94, 105-126. doi: <http://dx.doi.org/10.1016/j.jmps.2016.04.019>.
- 2 [24] Becker, R. and Lloyd, J. (2016) "A reduced-order crystal model for HCP metals: Application to Mg." *Mechanics of Materials*, 98, 98-110. doi: <https://doi.org/10.1016/j.mechmat.2016.04.009>.
- 3 [8] Bleckmann, M. Eichhorst, M. Schuch, M. Kreuzer, W. Hammond, V. Spiller, C. Meyer, L. and Herzig, N. (2016) "The influence of selected ECAP-processing routes on the material properties of Magnesium Elektron 675." *Materials Science and Engineering: A*, 660, 108-117. doi: <https://doi.org/10.1016/j.msea.2016.02.059>.
- 4 [3] Coleman, S. Tschopp, M. Weinberger, C. and Spearot, D. (2016) "Bridging atomistic simulations and experiments via virtual diffraction: understanding homophase grain boundary and heterophase interface structures." *Journal of Materials Science*, 51(3), 1251-1260. doi: <http://dx.doi.org/10.1007/s10853-015-9087-9>.
- 5 [15] El-Awady, J. Fan, H. and Hussein, A. (2016) "Advances in Discrete Dislocation Dynamics Modeling of Size-Affected Plasticity." *Multiscale Materials Modeling for Nanomechanics*, 245, 337-371. doi: http://dx.doi.org/10.1007/978-3-319-33480-6_11.
- 6 [103] Fan, H. Aubry, S. Arsenlis, A. and El-Awady, J. (2016) "Grain size effects on dislocation and twinning mediated plasticity in magnesium." *Scripta Materialia*, 112, 50-53. doi: <http://dx.doi.org/10.1016/j.scriptamat.2015.09.008>.
- 7 [36] Farbaniec, L. Williams, K. Kecskes, L. Ramesh, K. and Becker, R. (2016) "Microstructural effects on the spall properties of ECAP-processed AZ31B magnesium alloy." *International Journal of Impact Engineering*, 98, 34-41. doi: <http://dx.doi.org/10.1016/j.ijimpeng.2016.08.001>.
- 8 [0] Lamberson, L. Eliasson, V. and Weerasooriya, T. (2016) "Quantitative Visualization of Dynamic Material Behavior." *Experimental Mechanics*, 56(1), 1-2. doi: <http://dx.doi.org/10.1007/s11340-015-0118-x>.
- 9 [0] Liu, B. Arsenlis, T. and Aubry, S. (2016) "Computing forces on interface elements exerted by dislocations in an elastically anisotropic crystalline material." *Modelling and Simulation in Materials Science and Engineering*, 24(5), 55013-55013. doi: <http://stacks.iop.org/0965-0393/24/i=5/a=055013>.
- 10 [8] Lloyd, J. and Becker, R. (2016) "Stress-based crystal analysis of yielding in rolled Mg AZ31B." *Philosophical Magazine*, 96(4), 370-386. doi: <http://dx.doi.org/10.1080/14786435.2015.1132854>.
- 11 [25] Meredith, C. Lloyd, J. and Sano, T. (2016) "The quasi-static and dynamic response of fine-grained Mg alloy AMX602: An experimental and computational study." *Materials Science and Engineering: A*, 673, 73-82. doi: <https://doi.org/10.1016/j.msea.2016.07.035>.
- 12 [19] Mo, C. Wisner, B. Cabal, M. Hazeli, K. Ramesh, K. El, K. Al-Samman, T. Molodov, K. Molodov, D. and Kotsos, A. (2016) "Acoustic Emission of Deformation Twinning in Magnesium." *Materials*, 9(8), 662-662. doi: <http://dx.doi.org/10.3390/ma9080662>.
- 13 [13] Ponga, M. Bhattacharya, K. and Ortiz, M. (2016) "A sublinear-scaling approach to density-functional-theory analysis of crystal defects." *Journal of the Mechanics and Physics of Solids*, 95, 530-556. doi: <http://dx.doi.org/10.1016/j.jmps.2016.05.029>.
- 14 [14] Shen, J. Gärtnerová, V. Kecskes, L. Kondoh, K. Jäger, A. and Wei, Q. (2016) "Residual stress and its effect on the mechanical properties of Y-doped Mg alloy fabricated via back-pressure assisted equal channel angular pressing (ECAP-BP)." *Materials Science and Engineering: A*, 669, 110-117. doi: <https://doi.org/10.1016/j.msea.2016.05.067>.
- 15 [24] Wilkerson, J. and Ramesh, K. (2016) "A closed-form criterion for dislocation emission in nano-porous materials under arbitrary thermomechanical loading." *Journal of the Mechanics and Physics of Solids*, 86, 94-116. doi: <http://dx.doi.org/10.1016/j.jmps.2015.10.005>.
- 16 [40] Wilkerson, J. and Ramesh, K. (2016) "Unraveling the Anomalous Grain Size Dependence of Cavitation." *Phys. Rev. Lett.*, 117, 1-5. doi: <http://dx.doi.org/10.1103/PhysRevLett.117.215503>.
- 17 [5] Wu, C. Aubry, S. Arsenlis, A. and Chung, P. (2016) "Binary dislocation junction formation and strength in hexagonal close-packed crystals." *International Journal of Plasticity*, 79, 176-195. doi: <https://doi.org/10.1016/j.ijplas.2015.12.003>.
- 18 [9] Xie, K. Alam, Z. Caffee, A. and Hemker, K. J. (2016) "Deformation behavior of Mg single crystals compressed along c-axis." *Magnesium Technology*, 16, 209-211. doi: <http://dx.doi.org/10.1002/9781119274803.ch42>.
- 19 [73] Xie, K. Alam, Z. Caffee, A. and Hemker, K. J. (2016) "Pyramidal I slip in c-axis compressed Mg single crystals." *Scripta Materialia*, 112, 75-78. doi: <http://dx.doi.org/10.1016/j.scriptamat.2015.09.016>.
- 20 [18] Yi, P. Cammarata, R. and Falk, M. L. (2016) "Atomistic simulation of solid solution hardening in Mg/Al alloys: Examination of composition scaling and thermo-mechanical relationships." *Acta Materialia*, 105, 378-389. doi: <https://doi.org/10.1016/j.actamat.2015.12.038>.

2015

- 1 [41] Aitken, Z. Fan, H. El-Awady, J. and Greer, J. (2015) "The effect of size, orientation and alloying on the deformation of AZ31 nanopillars." *Journal of the Mechanics and Physics of Solids*, 76, 208-223. doi: <http://dx.doi.org/10.1016/j.jmps.2014.11.014>.
- 2 [38] Chang, Y. and Kochmann, D. (2015) "A variational constitutive model for slip-twinning interactions in hcp metals: Application to single- and polycrystalline magnesium." *International Journal of Plasticity*, 73, 39-61. doi: <https://doi.org/10.1016/j.ijplas.2015.03.008>.
- 3 [125] Dixit, N. Xie, K. Hemker, K. J. and Ramesh, K. (2015) "Microstructural evolution of pure magnesium under high strain rate loading." *Acta Materialia*, 87, 56-67. doi: <http://dx.doi.org/10.1016/j.actamat.2014.12.030>.
- 4 [35] Fan, H. and El-Awady, J. (2015) "Molecular Dynamics Simulations of Orientation Effects During Tension, Compression, and Bending Deformations of Magnesium Nanocrystals." *J. Appl. Mech.*, 82(10), 1-11. doi: <http://dx.doi.org/10.1115/1.4030930>.

- 5 [53] Fan, H. and El-Awady, J. (2015) "Towards resolving the anonymity of pyramidal slip in magnesium." *Materials Science and Engineering: A*, 644, 318-324. doi: <https://doi.org/10.1016/j.msea.2015.07.080>.
- 6 [39] Fan, H. Aubry, S. Arsenlis, A. and El-Awady, J. (2015) "Orientation influence on grain size effects in ultrafine-grained magnesium." *Scripta Materialia*, 97, 25-28. doi: <http://dx.doi.org/10.1016/j.scriptamat.2014.10.031>.
- 7 [83] Fan, H. Aubry, S. Arsenlis, T. and El-Awady, J. (2015) "The role of twinning deformation on the hardening response of polycrystalline magnesium from discrete dislocation dynamics simulations." *Acta Materialia*, 92, 126-139. doi: <https://doi.org/10.1016/j.actamat.2015.03.039>.
- 8 [1] Paul, J. and Kimberley, J. (2015) "A Desktop Tensile Kolsky Bar for the Dynamic Testing of Metallic Foils." *Journal of Dynamic Behavior of Materials*, 1(4), 439-446. doi: <http://dx.doi.org/10.1007/s40870-015-0038-y>.
- 9 [27] Ponga, M. Ortiz, M. and Ariza, M. (2015) "Finite-temperature non-equilibrium quasi-continuum analysis of nanovoid growth in copper at low and high strain rates." *Mechanics of Materials*, 90, 253-267. doi: <https://doi.org/10.1016/j.mechmat.2015.02.007>.
- 10 [10] Wang, W. Shang, S. Wang, Y. Kim, H. Darling, K. Kecskes, L. Mathaudhu, S. Hui, X. and Liu, Z. (2015) "Solid-Solution Hardening in Mg-Gd-TM (TM = Ag, Zn, and Zr) Alloys: An Integrated Density Functional Theory and Electron Work Function Study." *JOM*, 67(10), 2433-2441. doi: <http://dx.doi.org/10.1007/s11837-015-1555-9>.
- 11 [26] Winey, M. Renganathan, P. and Gupta, Y. (2015) "Shock wave compression and release of hexagonal-close-packed metal single crystals: Inelastic deformation of c-axis magnesium." *Journal of Applied Physics*, 117(10), 1-1. doi: <http://dx.doi.org/10.1063/1.4914525>.
- 12 [45] van Beers, P. Kouznetsova, V. Geers, M. Tschopp, M. and McDowell, D. (2015) "A multiscale model of grain boundary structure and energy: From atomistics to a continuum description." *Acta Materialia*, 82, 513-529. doi: <https://doi.org/10.1016/j.actamat.2014.08.045>.

2014

- 1 [35] Agnew, S. Whittington, W. Oppedal, A. El, K. Shaeffer, M. Ramesh, K. Bhattacharyya, J. Delorme, R. and Davis, B. (2014) "Dynamic Behavior of a Rare-Earth-Containing Mg Alloy, WE43B-T5, Plate with Comparison to Conventional Alloy, AM30-F." *JOM*, 66(2), 277-290. doi: <http://dx.doi.org/10.1007/s11837-013-0830-x>.
- 2 [0] Aubry, S. Fitzgerald, S. and Arsenlis, A. (2014) "Methods to compute dislocation line tension energy and force in anisotropic elasticity." *Modelling and Simulation in Materials Science and Engineering*, 22(1), 15001-15001. doi: <http://stacks.iop.org/0965-0393/22/i=1/a=015001>.
- 3 [13] Clayton, J. (2014) "Shock Compression of Metal Crystals: A Comparison of Eulerian and Lagrangian Elastic-Plastic Theories." *International Journal of Applied Mechanics*, 6(5), 1450-48. doi: <http://dx.doi.org/10.1142/S1758825114500483>.
- 4 [29] Coleman, S. Sichani, M. and Spearot, D. (2014) "A Computational Algorithm to Produce Virtual X-ray and Electron Diffraction Patterns from Atomistic Simulations." *JOM*, 66(3), 408-416. doi: <http://dx.doi.org/10.1007/s11837-013-0829-3>.
- 5 [0] Crone, J. Chung, P. Knap, J. Aubry, S. Hommes, G. and Arsenlis, T. (2014) "A multiply parallel implementation of finite element-based discrete dislocation dynamics for arbitrary geometries." *Modelling and Simulation in Materials Science and Engineering*, 22(3), 35014-35014. doi: <https://doi.org/10.1088/0965-0393/22/3/035014>.
- 6 [38] Eswar, P. Liu, B. Dixit, N. Shaffer, M. Mathaudhu, S. and Ramesh, K. (2014) "The Dynamic Flow and Failure Behavior of Magnesium and Magnesium Alloys." *JOM*, 66(2), 291-304. doi: <http://dx.doi.org/10.1007/s11837-013-0850-6>.
- 7 [26] Lambert, P. Hustedt, C. Vecchio, K. Huskins, E. Casem, D. Gruner, S. Tate, M. Philipp, H. Woll, A. Purohit, P. Weiss, J. Kannan, V. Ramesh, K. Kenesei, P. Okasinski, J. Almer, J. Zhao, M. Ananiadis, A. and Hufnagel, T. (2014) "Time-resolved x-ray diffraction techniques for bulk polycrystalline materials under dynamic loading." *Review of Scientific Instruments*, 85(9), 93901-93901. doi: <http://dx.doi.org/10.1063/1.4893881>.
- 8 [43] Lloyd, J. Clayton, J. Austin, R. and McDowell, D. (2014) "Plane wave simulation of elastic-viscoplastic single crystals." *Journal of the Mechanics and Physics of Solids*, 69, 14-32. doi: <https://doi.org/10.1016/j.jmps.2014.04.009>.
- 9 [15] Prasad, K. and Ramesh, K. (2014) "In-situ observations and quantification of twin boundary mobility in polycrystalline magnesium." *Materials Science and Engineering: A*, 617, 121-126. doi: <https://doi.org/10.1016/j.msea.2014.08.043>.
- 10 [0] Queyreau, S. Marian, J. Wirth, B. and Arsenlis, T. (2014) "Analytical integration of the forces induced by dislocations on a surface element." *Modelling and Simulation in Materials Science and Engineering*, 22(3), 35004-35004. doi: <http://stacks.iop.org/0965-0393/22/i=3/a=035004>.
- 11 [105] Tang, Y. and El-Awady, J. (2014) "Formation and slip of pyramidal dislocations in hexagonal close-packed magnesium single crystals." *Acta Materialia*, 71, 319-332. doi: <https://doi.org/10.1016/j.actamat.2014.03.022>.
- 12 [26] Tang, Y. and El-Awady, J. (2014) "Highly anisotropic slip-behavior of pyramidal I dislocations in hexagonal close-packed magnesium." *Materials Science and Engineering: A*, 618, 424-432. doi: <https://doi.org/10.1016/j.msea.2014.09.032>.
- 13 [29] Venturini, G. Wang, K. Romero, I. Ariza, M. and Ortiz, M. (2014) "Atomistic long-term simulation of heat and mass transport." *Journal of the Mechanics and Physics of Solids*, 73, 242-268. doi: <http://dx.doi.org/10.1016/j.jmps.2014.09.008>.
- 14 [32] Wang, W. Shang, S. Wang, Y. Darling, K. Kecskes, L. Mathaudhu, S. Hui, X. and Liu, Z. (2014) "Electronic structures of long periodic stacking order structures in Mg: A first-principles study." *Journal of Alloys and Compounds*, 586, 656-662. doi: <https://doi.org/10.1016/j.jallcom.2013.10.068>.
- 15 [76] Wang, W. Shang, S. Wang, Y. Mei, Z. Darling, K. Kecskes, L. Mathaudhu, S. Hui, X. and Liu, Z. (2014) "Effects of Alloying Elements on Stacking Fault Energies and Electronic Structures of Binary Mg Alloys: A First-Principles Study." *Materials Research Letters*, 2(1), 29-36. doi: <http://dx.doi.org/10.1080/21663831.2013.858085>.
- 16 [48] Wilkerson, J. and Ramesh, K. (2014) "A dynamic void growth model governed by dislocation kinetics." *Journal of the Mechanics and Physics of Solids*, 70, 262-280. doi: <http://dx.doi.org/10.1016/j.jmps.2014.05.018>.
- 17 [17] Williams, C. Chen, C. Ramesh, K. and Dandekar, D. (2014) "On the shock stress, substructure evolution, and spall response of commercially pure 1100-O aluminum." *Materials Science and Engineering: A*, 618, 596-604. doi: <https://doi.org/10.1016/j.msea.2014.09.030>.
- 18 [14] Winey, M. and Gupta, Y. (2014) "Shock wave compression of hexagonal-close-packed metal single crystals: Time-dependent, anisotropic elastic-plastic response of beryllium." *Journal of Applied Physics*, 116(3), 33505-33505. doi: <http://dx.doi.org/10.1063/1.4889886>.
- 19 [4] Wright, T. Daphalapurkar, N. and Ramesh, K. (2014) "Stability of ideal fcc twin boundaries." *Journal of the Mechanics and Physics of Solids*, 73, 228-241. doi: <http://dx.doi.org/10.1016/j.jmps.2014.09.007>.
- 20 [0] Zhang, J. Ramesh, K. and Joshi, S. P. (2014) "Stochastic size-dependent slip-twinning competition in hexagonal close packed single crystals." *Modelling and Simulation in Materials Science and Engineering*, 22(7), 75003-75003. doi: <http://stacks.iop.org/0965-0393/22/i=7/a=075003>.

2013

- 1 [0] Aubry, S. and Arsenlis, A. (2013) "Use of spherical harmonics for dislocation dynamics in anisotropic elastic media." *Modelling and Simulation in Materials Science and Engineering*, 21(6), 65013-65013. doi: <http://stacks.iop.org/0965-0393/21/i=6/a=065013>.
- 2 [31] Bhatia, M. Solanki, K. Moitra, A. and Tschopp, M. (2013) "Investigating Damage Evolution at the Nanoscale: Molecular Dynamics Simulations of Nanovoid Growth in Single-Crystal Aluminum." *Metallurgical and Materials Transactions A*, 44(2), 617-626. doi: <http://dx.doi.org/10.1007/s11661-012-1082-z>.
- 3 [57] Byer, C. and Ramesh, K. (2013) "Effects of the initial dislocation density on size effects in single-crystal magnesium." *Acta Materialia*, 61(10), 3808-3818. doi: <http://dx.doi.org/10.1016/j.actamat.2013.03.019>.
- 4 [15] Casem, D. and Zellner, M. (2013) "Kolsky Bar Wave Separation Using a Photon Doppler Velocimeter." *Experimental Mechanics*, 53(8), 1467-1473. doi: <http://dx.doi.org/10.1007/s11340-013-9735-4>.
- 5 [35] Clayton, J. and Knap, J. (2013) "Phase-field analysis of fracture-induced twinning in single crystals." *Acta Materialia*, 61(14), 5341-5353. doi: <https://doi.org/10.1016/j.actamat.2013.05.023>.
- 6 [7] Guo, Y. Behm, N. Ligda, J. Li, Y. Pan, Z. Horita, Z. and Wei, Q. (2013) "Critical issues related to instrumented indentation on non-uniform materials: Application to niobium subjected to high pressure torsion." *Materials Science and Engineering: A*, 586, 149-159. doi: <https://doi.org/10.1016/j.msea.2013.05.023>.

- <https://doi.org/10.1016/j.msea.2013.08.015>.
- 7 [31] Kadiri, H. Barrett, C. and Tschopp, M. (2013) "The candidacy of shuffle and shear during compound twinning in hexagonal close-packed structures." *Acta Materialia*, 61(20), 7646-7659. doi: <https://doi.org/10.1016/j.actamat.2013.09.002>.
 - 8 [117] Kim, C. Sohn, I. Nezafati, M. Ferguson, J. Schultz, B. Bajestani-Gohari, Z. Rohatgi, P. and Cho, K. (2013) "Prediction models for the yield strength of particle-reinforced unimodal pure magnesium (Mg) metal matrix nanocomposites (MMNCs)." *Journal of Materials Science*, 48(12), 4191-4204. doi: <http://dx.doi.org/10.1007/s10853-013-7232-x>.
 - 9 [4] Vignes, R. Becker, R. Stölken, J. and Kumar, M. (2013) "An assessment of diamond anvil cell measurements on material strength." *Journal of Applied Physics*, 113(21), 213-503. doi: <http://dx.doi.org/10.1063/1.4807786>.
 - 10 [14] Williams, C. Chen, C. Ramesh, K. and Dandekar, D. (2013) "The effects of cold rolling on the microstructural and spall response of 1100 aluminum." *Journal of Applied Physics*, 114(9), 93502-93502. doi: <http://dx.doi.org/10.1063/1.4817844>.
 - 11 [16] Wu, C. Chung, P. Aubry, S. Munday, L. and Arsenlis, A. (2013) "The strength of binary junctions in hexagonal close-packed crystals." *Acta Materialia*, 61(9), 3422-3431. doi: <https://doi.org/10.1016/j.actamat.2013.02.033>.

2012

- 1 [47] Casem, D. Grunschel, S. and Schuster, B. (2012) "Normal and Transverse Displacement Interferometers Applied to Small Diameter Kolsky Bars." *Experimental Mechanics*, 52(2), 173-184. doi: <http://dx.doi.org/10.1007/s11340-011-9524-x>.
- 2 [17] Daphalapurkar, N. and Ramesh, K. (2012) "Orientation dependence of the nucleation and growth of partial dislocations and possible twinning mechanisms in aluminum." *Journal of the Mechanics and Physics of Solids*, 60(2), 277-294. doi: <http://dx.doi.org/10.1016/j.jmps.2011.10.009>.
- 3 [2] Grujicic, M. Pandurangan, B. Cheeseman, B. and Yen, C. (2012) "Spall-Fracture Physics and Spallation-Resistance-Based Material Selection." *Journal of Materials Engineering and Performance*, 21(9), 1813-1823. doi: <http://dx.doi.org/10.1007/s11665-011-0068-0>.
- 4 [20] Panigrahi, S. Kumar, K. Kumar, N. Yuan, W. Mishra, R. DeLorme, R. Davis, B. Howell, R. and Cho, K. (2012) "Transition of deformation behavior in an ultrafine grained magnesium alloy." *Materials Science and Engineering: A*, 549, 123-127. doi: <https://doi.org/10.1016/j.msea.2012.04.017>.
- 5 [92] Razavi, S. Foley, D. Karaman, I. Hartwig, K. Duygulu, O. Kecskes, L. Mathaudhu, S. and Hammond, V. (2012) "Effect of grain size on prismatic slip in Mg-3Al-1Zn alloy." *Scripta Materialia*, 67(5), 439-442. doi: <https://doi.org/10.1016/j.scriptamat.2012.05.017>.
- 6 [34] Williams, C. Ramesh, K. and Dandekar, D. (2012) "Spall response of 1100-O aluminum." *Journal of Applied Physics*, 111(12), 123-528. doi: <http://dx.doi.org/10.1063/1.4729305>.

Polymers

2021

- 1 [0] Haque, B.Z., Gillespie, Jr., J.W. (2021) "Perforation Mechanics of UHMWPE Soft Ballistic Sub-Laminate and Soft Ballistic Armor Pack: A Finite Element Study." *Journal of Thermoplastic Composites*, doi: <https://doi.org/10.1177/08927057211042058>.

2020

- 1 [1] O'Connor T.C., Robbins M.O. (2020) "Molecular models for creep in oriented polyethylene fibers." *Journal of Chemical Physics*, 153(14), doi: <https://doi.org/10.1063/5.0021286>.

2019

- 1 [0] Abu-Obaid, A. Ganesh, R. and Gillespie, J. (2019) "Investigation of Axial Compressive Behavior of Kevlar Fibers Using Dynamic Loop Test." *Textile Research Journal*, 1-14. doi: <https://doi.org/10.1177/0040517518821898>.
- 2 [11] Galvani Cunha, M. and Robbins, M. O. (2019) "Determination of pressure-viscosity relation of 2,2,4-trimethylhexane by all-atom molecular dynamics simulations." *Fluid Phase Equilib.*, 495, 28-32. doi: <https://doi.org/10.1016/j.fluid.2019.05.008>.
- 3 [17] Jadhao, V. and Robbins, M. O. (2019) "Rheological Properties of Liquids Under Conditions of Elasto-hydrodynamic Lubrication." *Tribology Letters*, 67, doi: <https://doi.org/10.1007/s11249-019-1178-3>.
- 4 [17] O'Connor T.C., Hopkins A., Robbins M.O. (2019) "Stress Relaxation in Highly Oriented Melts of Entangled Polymers." *Macromolecules*, 52(22), 8540-8550. doi: <https://doi.org/10.1021/acs.macromol.9b01161>.

2018

- 1 [6] Dong, H. Wang, Z. O'Connor, T. C. Azoug, A. Robbins, M. O. and Nguyen, T. (2018) "Micromechanical models for the stiffness and strength of {UHMWPE} microfibrils." *Journal of the Mechanics and Physics of Solids*, 116, 70-98. doi: <https://doi.org/10.1016/j.jmps.2018.03.015>.
- 2 [7] McDaniel, P. Deitzel, J. Gillespie, J. and Strawhecker, K. (2018) "Nanoscale Interfibrillar Adhesion in UHMWPE Fibers." *Journal of Polymer Science Part B: Polymer Physics*, 56(5), 391-401. doi: <https://doi.org/10.1002/polb.24552>.
- 3 [30] O'Connor, T. Alvarez, N. and Robbins, M. O. (2018) "Relating Chain Conformations to Extensional Stress in Entangled Polymer Melts." *Phys. Rev. Lett.*, 121(4), doi: <http://doi.org/10.1103/PhysRevLett.121.047801>.
- 4 [9] O'Connor, T. Elder, R. Slizberg, Y. Sirk, T. Andzelm, J. and Robbins, M. O. (2018) "Molecular origins of anisotropic shock propagation in crystalline and amorphous polyethylene." *Phys. Rev. Materials*, 2(3), doi: <https://doi.org/10.1103/PhysRevMaterials.2.035601>.
- 5 [8] Polakovic, T. Gregory, D. McDaniel, P. Deitzel, J. and Gillespie, J. (2018) "A Single Fiber Peel Test to Assess Ultra High Molecular Weight Polyethylene Fiber Mesoscale Interactions." *Journal of Applied Polymer Science*, 135(16), 46-156. doi: <https://doi.org/10.1002/app.46156>.
- 6 [4] Sockalingam, S. Thomas, F. Casem, D. Gillespie, J. and Weerasooriya, T. (2018) "Failure of Dyneema® SK76 single fiber under multiaxial transverse loading." *Textile Research Journal*, 89(13), 2659-2673. doi: <https://doi.org/10.1177/0040517518798653>.
- 7 [7] Staniszewski, J. Sockalingam, S. Bogetti, T. and Gillespie, J. (2018) "Modeling the Fibrillation of Kevlar KM2 Single Fibers Subjected to Transverse Compression." *Fibers and Polymers*, 19(7), 1479-1489. doi: <https://doi.org/10.1007/s12221-018-8127-x>.

2017

- 1 [19] Bogetti, T. Walter, M. Staniszewski, J. and Cline, J. (2017) "Interlaminar shear characterization of ultra-high molecular weight polyethylene (UHMWPE) composite laminates." *Composites Part A: Applied Science and Manufacturing*, 98, 105-115. doi: <https://doi.org/10.1016/j.compositesa.2017.03.018>.
- 2 [8] Brayton, A. Yeh, I. Andzelm, J. and Rutledge, G. (2017) "Vibrational Analysis of Semicrystalline Polyethylene Using Molecular Dynamics Simulation." *Macromolecules*, 50(17), 6690-6701. doi: <https://dx.doi.org/10.1021/acs.macromol.7b00995>.
- 3 [0] Chowdhury, S. C. Sockalingam, S. and Gillespie, J. (2017) "Molecular Dynamics Modeling of the Effect of Axial and Transverse Compression on the Residual Tensile Properties of Ballistic Fiber." *Fibers*, 5(7), 1-16. doi: <http://www.mdpi.com/2079-6439/5/17/htm>.
- 4 [7] Deitzel, J. McDaniel, P. and Gillespie, J. (2017) "Chapter 10: High Performance Polyethylene Fibers." *Structure and Properties of High-Performance Fibers*, 1(1), 167-185. doi: <https://doi.org/10.1016/B978-0-08-100550-7.00007-3>.
- 5 [11] Elder, R. O'Connor, T. C. Chantawansri, T. Slizberg, Y. Sirk, T. Yeh, I. Robbins, M. O. and Andzelm, J. (2017) "Shock-wave propagation and reflection in semicrystalline polyethylene: A molecular-level investigation." *Phys. Rev. Materials*, 1, 43606-43606. doi: <http://dx.doi.org/10.1103/PhysRevMaterials.1.043606>.

- 6 [7] Haque, B. Z. Ali, M. and Gillespie, J. (2017) "Modeling Transverse Impact on UHMWPE Soft Ballistic Sub-Laminate." *Journal of Thermoplastic Composite Materials*, 30(11), 1441-1483. doi: <https://doi.org/10.1177/0892705716637114>.
- 7 [0] Jadhao, V. and Robbins, M. O. (2017) "Correction for Jadhao and Robbins, Probing large viscosities in glass-formers with nonequilibrium simulations." *Proceedings of the National Academy of Sciences*, 114(39), 8317-8317. doi: <https://doi.org/10.1073/pnas.1715376114>.
- 8 [38] Jadhao, V. and Robbins, M. O. (2017) "Probing large viscosities in glass-formers with nonequilibrium simulations." *Proceedings of the National Academy of Sciences*, 114(30), 7952-7957. doi: <http://dx.doi.org/10.1073/pnas.1705978114>.
- 9 [2] Jadhao, V. and Robbins, M. O. (2017) "Reply to Bair: Crossover to Arrhenius behavior at high viscosities in squalane." *Proceedings of the National Academy of Sciences*, 114(42), 8807-8808. doi: <http://dx.doi.org/10.1073/pnas.1715298114>.
- 10 [0] McDaniel, P. Deitzel, J. Gillespie, J. and Strawhecker, K. (2017) "Influence of sub-filament structure on failure mechanisms for mode I and II loading conditions in UHMWPE filaments." _.
- 11 [0] McDaniel, P. Deitzel, J. Gillespie, J. and Strawhecker, K. (2017) "Measurement of Microfibril Adhesion in UHMW PE fibers through Nanomechanical testing." _.
- 12 [22] McDaniel, P. Sockalingam, S. Deitzel, J. Gillespie, J. Keefe, M. Bogetti, T. Casem, D. and Weerasooriya, T. (2017) "The effect of fiber meso/nanostructure on the transverse compression response of ballistic fibers." *Composites Part A: Applied Science and Manufacturing*, 94, 133-145. doi: <https://doi.org/10.1016/j.compositesa.2016.12.003>.
- 13 [11] Sockalingam, S. Casem, D. Weerasooriya, T. McDaniel, P. and Gillespie, J. (2017) "Experimental Investigation of the High Strain Rate Transverse Compression Behavior of Ballistic Single Fibers." *Journal of Dynamic Behavior of Materials*, 3(3), 474-484. doi: <http://dx.doi.org/10.1007/s40870-017-0126-2>.
- 14 [60] Sockalingam, S. Chowdhury, S. C. Gillespie, J. and Keefe, M. (2017) "Recent Advances in Modeling and Experiments of Kevlar Ballistic Fibrils, Fibers, Yarns and Flexible Textile Fabrics – A Review." *Textile Research Journal*, 87(8), 984-1010. doi: <https://doi.org/10.1177/0040517516646039>.
- 15 [20] Sockalingam, S. Gillespie, J. and Keefe, M. (2017) "Modeling the Fiber Length- Scale Response of Kevlar KM2 Yarn During Transverse Impact." *Textile Research Journal*, 87(8), 2242-2254. doi: <https://doi.org/10.1016/j.jpolymer.2016.04.048>.
- 16 [9] Sockalingam, S. Gillespie, J. and Keefe, M. (2017) "Role of Inelastic Transverse Compressive Behavior and Multiaxial Loading on the Transverse Impact of Kevlar KM2 Single Fiber." *Fibers*, 5(1), 1-9. doi: <http://dx.doi.org/10.3390/fib5010009>.
- 17 [37] Yeh, I. Lenhart, J. Rutledge, G. and Andzelm, J. (2017) "Molecular Dynamics Simulation of the Effects of Layer Thickness and Chain Tilt on Tensile Deformation Mechanisms of Semicrystalline Polyethylene." *Macromolecules*, 50(4), 1700-1712. doi: <http://dx.doi.org/10.1021/acs.macromol.6b01748>.

2016

- 1 [35] Elder, R. Knorr, D. Andzelm, J. Lenhart, J. and Sirk, T. (2016) "Nanovoid formation and mechanics: a comparison of poly(dicyclopentadiene) and epoxy networks from molecular dynamics simulations." *Soft Matter*, 12, 4418-4434. doi: <http://dx.doi.org/10.1039/C6SM00691D>.
- 2 [22] Hsieh, A. Chantawansri, T. Hu, W. Cain, J. and Yu, J. (2016) "New insight into the influence of molecular dynamics of matrix elastomers on ballistic impact deformation in UHMWPE composites." *Polymer*, 95, 52-61. doi: <https://doi.org/10.1016/j.polymer.2016.04.048>.
- 3 [27] O'Connor, T. C. and Robbins, M. O. (2016) "Chain Ends and the Ultimate Strength of Polyethylene Fibers." *ACS Macro Letters*, 5(3), 263-267. doi: <http://dx.doi.org/10.1021/acsmacrolett.5b00838>.
- 4 [8] Obaid, A. Yarlagadda, S. and Gillespie, J. (2016) "Combined effects of kink bands and hygrothermal conditioning on tensile strength of polyarylate liquid crystal co-polymer and aramid fibers." *Journal of Composite Materials*, 50(3), 339-350. doi: <http://dx.doi.org/10.1177/0021998315574754>.
- 5 [23] Slizberg, Y. Kröger, M. and Chantawansri, T. (2016) "Fast equilibration protocol for million atom systems of highly entangled linear polyethylene chains." *The Journal of Chemical Physics*, 144(15), 154-901. doi: <http://dx.doi.org/10.1063/1.4946802>.
- 6 [34] Sockalingam, S. Bremble, R. Gillespie, J. and Keefe, M. (2016) "Transverse compression behavior of Kevlar KM2 single fiber." *Composites Part A: Applied Science and Manufacturing*, 81, 271-281. doi: <https://doi.org/10.1016/j.compositesa.2015.11.032>.
- 7 [13] Sockalingam, S. Gillespie, J. and Keefe, M. (2016) "Influence of multiaxial loading on the failure of Kevlar KM2 single fiber." *Textile Research Journal*, 88(5), 483-498. doi: <http://dx.doi.org/10.1177/0040517516681961>.
- 8 [44] Veyssset, D. Hsieh, A. Kooi, S. Maznev, A. Masser, K. and Nelson, K. (2016) "Dynamics of supersonic microparticle impact on elastomers revealed by real-time multi-frame imaging." *Scientific Reports*, 6, 25577-25577. doi: <http://doi.org/10.1038/srep25577>.
- 9 [33] Wang, Y. Miao, Y. Huang, L. Swenson, D. Yen, C. Yu, J. and Zheng, J. (2016) "Effect of the inter-fiber friction on fiber damage propagation and ballistic limit of 2-D woven fabrics under a fully confined boundary condition." *International Journal of Impact Engineering*, 97, 66-78. doi: <https://doi.org/10.1016/j.ijimpeng.2016.06.007>.

2015

- 1 [21] Chantawansri, T. Yeh, I. and Hsieh, A. (2015) "Investigating the glass transition temperature at the atom-level in select model polyamides: A molecular dynamics study." *Polymer*, 81, 50-61. doi: <https://doi.org/10.1016/j.polymer.2015.09.069>.
- 2 [51] McDaniel, P. Deitzel, J. and Gillespie, J. (2015) "Structural Hierarchy and Surface Morphology of Highly Drawn Ultra High Molecular Weight Polyethylene Fibers Studied by Atomic Force Microscopy and Wide Angle X-Ray Diffraction." *Journal of Polymer Research*, 69, 148-158. doi: <https://doi.org/10.1016/j.jpolymer.2015.05.010>.
- 3 [109] O'Connor, T. C. Andzelm, J. and Robbins, M. O. (2015) "AIREBO-M: A reactive model for hydrocarbons at extreme pressures." *The Journal of Chemical Physics*, 142(2), 24903-24903. doi: <http://dx.doi.org/10.1063/1.4905549>.
- 4 [10] Rahman, R. and Foster, J. (2015) "A molecular dynamics based investigation of thermally vibrating graphene under different boundary conditions." *Physica E: Low-dimensional Systems and Nanostructures*, 72, 25-47. doi: <https://doi.org/10.1016/j.physe.2015.04.007>.
- 5 [3] Rahman, R. and Foster, J. (2015) "Peridynamic theory of solids from the perspective of classical statistical mechanics." *Physica A: Statistical Mechanics and its Applications*, 437, 162-183. doi: <http://dx.doi.org/10.1016/j.physa.2015.05.099>.
- 6 [42] Sockalingam, S. Gillespie, J. and Keefe, M. (2015) "Dynamic modeling of Kevlar KM2 single fiber subjected to transverse impact." *International Journal of Solids and Structures*, 67, 297-310. doi: <https://doi.org/10.1016/j.ijsolstr.2015.04.031>.
- 7 [74] Yeh, I. Andzelm, J. and Rutledge, G. (2015) "Mechanical and Structural Characterization of Semicrystalline Polyethylene under Tensile Deformation by Molecular Dynamics Simulations." *Macromolecules*, 48(12), 4228-4239. doi: <http://dx.doi.org/10.1021/acs.macromol.5b00697>.

2014

- 1 [1] Chantawansri, T. and Slizberg, Y. (2014) "Computational study of the morphology and mechanical properties of dilute ABC triblock copolymers." *Korea-Australia Rheology Journal*, 26(1), 49-61. doi: <http://dx.doi.org/10.1007/s13367-014-0006-4>.
- 2 [18] Cole, D. and Strawhecker, K. (2014) "An improved instrumented indentation technique for single microfibers." *Journal of Materials Research*, 29(9), 1104-1112. doi: <http://dx.doi.org/10.1557/jmr.2014.83>.
- 3 [1] Lopatnikov, S. and Gillespie, J. (2014) "Simple analytical model for fiber tensile failure due to droplet impact." *Journal of Applied Physics*, 115(6), 63511-63511. doi: <http://dx.doi.org/10.1063/1.4863207>.
- 4 [7] McAllister, Q. Gillespie, J. and VanLandingham, M. (2014) "The energy dissipative mechanisms of particle-fiber interactions in a textile composite." *Journal of Composite Materials*, 48(28), 3553-3567. doi: <http://dx.doi.org/10.1177/0021998313511651>.
- 5 [58] Nilakantan, G. Merrill, R. Keefe, M. Gillespie, J. and Wetzel, E. (2014) "Experimental investigation of the role of frictional yarn pull-out and windowing on the probabilistic impact response of kevlar fabrics." *Composites Part B: Engineering*, 68, 215-229. doi: <https://doi.org/10.1016/j.compositesb.2014.08.033>.
- 6 [11] Rahman, R. and Foster, J. (2014) "Bridging the length scales through nonlocal hierarchical multiscale modeling scheme." *Computational Materials Science*, 92, 401-415. doi: <http://dx.doi.org/10.1016/j.commatsci.2014.05.052>.

- 7 [19] Rahman, R. and Foster, J. (2014) "Deformation mechanism of graphene in amorphous polyethylene: A molecular dynamics based study." *Computational Materials Science*, 87, 232-240. doi: <https://doi.org/10.1016/j.commatsci.2014.02.023>.
- 8 [12] Rahman, R. Haque, A. and Foster, J. (2014) "A Multiscale Modeling Scheme Based on Peridynamic Theory." *International Journal for Multiscale Computational Engineering*, 12(3), 223-248. doi: <http://dx.doi.org/10.1615/IntJMultCompEng.2014007954>.
- 9 [26] Sanborn, B. and Weerasooriya, T. (2014) "Quantifying damage at multiple loading rates to Kevlar KM2 fibers due to weaving, finishing, and pre-twist." *International Journal of Impact Engineering*, 71, 50-59. doi: <https://doi.org/10.1016/j.ijimpeng.2014.04.005>.
- 10 [20] Strawhecker, K. and Cole, D. (2014) "Morphological and local mechanical surface characterization of ballistic fibers via AFM." *Journal of Applied Polymer Science*, 131(19), 1-1. doi: <http://dx.doi.org/10.1002/app.40880>.

2013

- 1 [26] Grujicic, M. Pandurangan, B. Snipes, J. Yen, C. and Cheeseman, B. (2013) "Multi-Length Scale-Enriched Continuum-Level Material Model for Kevlar®-Fiber-Reinforced Polymer-Matrix Composites." *Journal of Materials Engineering and Performance*, 22(3), 681-695. doi: <http://dx.doi.org/10.1007/s11665-012-0329-6>.
- 2 [23] McAllister, Q. Gillespie, J. and VanLandingham, M. (2013) "The influence of surface microstructure on the scratch characteristics of Kevlar fibers." *Journal of Materials Science*, 48(3), 1292-1302. doi: <http://dx.doi.org/10.1007/s10853-012-6872-6>.
- 3 [14] McAllister, Q. Gillespie, J. and VanLandingham, M. (2013) "The sub-micron scale energy dissipative deformation mechanisms of Kevlar fibrils." *Journal of Materials Science*, 48(18), 6245-6261. doi: <http://dx.doi.org/10.1007/s10853-013-7422-6>.
- 4 [61] Nilakantan, G. and Gillespie, J. (2013) "Yarn pull-out behavior of plain woven Kevlar fabrics: Effect of yarn sizing, pullout rate, and fabric pre-tension." *Composite Structures*, 101, 215-224. doi: <https://doi.org/10.1016/j.compstruct.2013.02.018>.
- 5 [33] Nilakantan, G. Wetzel, E. Bogetti, T. and Gillespie, J. (2013) "A deterministic finite element analysis of the effects of projectile characteristics on the impact response of fully clamped flexible woven fabrics." *Composite Structures*, 95, 191-201. doi: <https://doi.org/10.1016/j.compstruct.2012.07.023>.
- 6 [42] Rahman, R. Foster, J. and Haque, A. (2013) "Molecular dynamics simulation and characterization of graphene-cellulose nanocomposites." *The Journal of Physical Chemistry A*, 117(25), 5344-5353. doi: <https://doi.org/10.1021/jp402814t>.
- 7 [71] Sirk, T. Khare, K. Karim, M. Lenhart, J. Andzelm, J. McKenna, G. and Khare, R. (2013) "High strain rate mechanical properties of a cross-linked epoxy across the glass transition." *Polymer*, 54(26), 7048-7057. doi: <https://doi.org/10.1016/j.polymer.2013.10.051>.
- 8 [6] Slizoberg, Y. and Chantawansri, T. (2013) "Computational study of imperfect networks using a coarse-grained model." *The Journal of Chemical Physics*, 139(19), 194-904. doi: <http://dx.doi.org/10.1063/1.4832140>.

2012

- 1 [12] Chantawansri, T. Slizoberg, Y. Andzelm, J. and Hsieh, A. (2012) "Coarse-grained modeling of model poly(urethane urea)s: Microstructure and interface aspects." *Polymer*, 53(20), 4512-4524. doi: <https://doi.org/10.1016/j.polymer.2012.07.056>.
- 2 [44] Grujicic, M. Hariharan, A. Pandurangan, B. Yen, C. Cheeseman, B. Wang, Y. Miao, Y. and Zheng, J. (2012) "Fiber-Level Modeling of Dynamic Strength of Kevlar® KM2 Ballistic Fabric." *Journal of Materials Engineering and Performance*, 21(7), 1107-1119. doi: <http://dx.doi.org/10.1007/s11665-011-0006-1>.
- 3 [37] McAllister, Q. Gillespie, J. and VanLandingham, M. (2012) "Evaluation of the three-dimensional properties of Kevlar across length scales." *Journal of Materials Research*, 27(14), 1824-1837. doi: <https://doi.org/10.1557/jmr.2012.80>.
- 4 [28] McAllister, Q. Gillespie, J. and VanLandingham, M. (2012) "Nonlinear indentation of fibers." *Journal of Materials Research*, 27(1), 197-213. doi: <https://doi.org/10.1557/jmr.2011.336>.
- 5 [69] Nilakantan, G. and Gillespie, J. (2012) "Ballistic impact modeling of woven fabrics considering yarn strength, friction, projectile impact location, and fabric boundary condition effects." *Composite Structures*, 94(12), 3624-3634. doi: <https://doi.org/10.1016/j.compstruct.2012.05.030>.
- 6 [33] Nilakantan, G. Keefe, M. Wetzel, E. Bogetti, T. and Gillespie, J. (2012) "Effect of statistical yarn tensile strength on the probabilistic impact response of woven fabrics." *Composites Science and Technology*, 72(2), 320-329. doi: <https://doi.org/10.1016/j.compscitech.2011.11.021>.
- 7 [40] Nilakantan, G. Wetzel, E. Bogetti, T. and Gillespie, J. (2012) "Finite element analysis of projectile size and shape effects on the probabilistic penetration response of high strength fabrics." *Composite Structures*, 94(5), 1846-1854. doi: <https://doi.org/10.1016/j.compstruct.2011.12.028>.
- 8 [85] Sirk, T. Slizoberg, Y. Brennan, J. Lisal, M. and Andzelm, J. (2012) "An enhanced entangled polymer model for dissipative particle dynamics." *The Journal of Chemical Physics*, 136(13), 134-903. doi: <https://doi.org/10.1063/1.3698476>.
- 9 [36] Slizoberg, Y. and Andzelm, J. (2012) "Fast protocol for equilibration of entangled and branched polymer chains." *Chemical Physics Letters*, 523, 139-143. doi: <https://doi.org/10.1016/j.cplett.2011.12.040>.
- 10 [10] Slizoberg, Y. Sirk, T. Brennan, J. and Andzelm, J. (2012) "Bead-spring models of entangled polymer melts: Comparison of hard-core and soft-core potentials." *Journal of Polymer Science Part B: Polymer Physics*, 50(24), 1694-1698. doi: <http://dx.doi.org/10.1002/polb.23175>.

Summary

Number of journal articles

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Ceramics	7	5	6	21	23	20	7	19	10	15
Composites	7	2	5	13	16	8	14	11	9	22
Integrative	2	4	6	4	3	4	0	4	0	0
Metals	6	11	20	12	20	18	7	12	19	12
Polymers	10	8	10	7	9	17	7	4	1	1
Total	32	30	47	57	71	67	35	50	39	50

Total

Ceramics	133
Composites	107
Integrative	27
Metals	137
Polymers	74
Total	478

Number of times journal articles were cited

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Ceramics	107	142	175	529	483	193	67	144	40	5
Composites	51	38	212	231	354	83	139	63	45	1
Integrative	24	42	107	129	75	16	0	32	0	0
Metals	212	327	550	523	458	400	83	148	97	10
Polymers	394	276	173	310	239	251	71	45	1	0
Total	788	825	1217	1722	1609	943	360	432	183	16

Total

Ceramics	1885
Composites	1217
Integrative	425
Metals	2808
Polymers	1760
Total	8095