

Completed and Planned Ph.D. and MS Degrees

from

NSF IUCRC HVT Center

between

2014 and August 2022

Completed PhDs = **38**

(Additional 3 will be completed before the End of Phase 1 in Summer 2023)

Completed MS = **15**

University of Illinois at Urbana-Champaign

Completed PhDs:

1. Ankit Saharan, Homogenization and Elastic-Plastic Transitions in Random and FGM Microstructures, Ph.D. in Mechanical Engineering, UIUC, completed in 2014.
2. Vinesh Nishawala, Transient Wave Propagation on Random Fields with Fractal and Hurst Effects, Ph.D. in Mechanical Engineering, UIUC, completed in 2016.
3. Sohan Kale, Avalanches, Percolation, and Stochastic Damage Evolution in Disordered Media, Ph.D. in Mechanical Engineering (*Outstanding Mechanical Engineering Dissertation Award Winner*), UIUC, completed in 2016.
4. Jun Zhang, Scale-Dependent Homogenization of Elastic-Viscoelastic Random Composites, Ph.D. in Theoretical and Applied Mechanics, UIUC, completed in 2017.
5. Mete Bakir, Design and Characterization of Aromatic Thermosetting Copolyester Resin for Polymer Matrix Nanocomposites, Ph.D. in Mechanical Engineering, UIUC, completed in August 2018.
6. Dansong Zhang, Thermomechanics and Dynamics of Helically-Wound Cables, Ph.D. in Mechanical Engineering, UIUC, completed in December 2018.
7. Fereshteh Sabet, Modeling of Bone and 3D printed Bioinspired Composites, Ph.D. in Theoretical and Applied Mechanics, UIUC, Ph.D. in Theoretical and Applied Mechanics, defended in August 2019, completed May 2021
8. Diab Abueidda, Characterization and Modeling of Lightweight Cellular Materials based on Triply Periodic minimal Surfaces, Ph.D. in Mechanical Engineering, UIUC, completed in

December 2019.

9. Jacob Meyer, Characterization of Aromatic Thermosetting Copolyesters and their Bonding via Interchain Transesterification Reactions, Ph.D. in Mechanical Engineering, UIUC, defended in January 2020, completed in May 2021.
10. Bharath Raghavan, Rheological properties, stochastic characteristics, and Second Law violations of atomic fluids in Couette flow,” Ph.D. in Mechanical Engineering, completed in April 2020.
11. Xian Zhang, Hyperbolic and parabolic problems on random fields with fractal and Hurst effects, Ph.D. in Theoretical and Applied Mechanics, UIUC, July 2021.
12. Pouyan Karimi, Scale effects in electromagnetic and mechanical properties of composites, Ph.D. in Theoretical and Applied Mechanics, UIUC, September 2021.
13. Siyuan Pang, Mechanical and Compositional Analysis of Bone Nanostructure and Designs for Bio-inspired Co-continuous Composites, Ph.D. in Mechanical Engineering, defended in May 2022.
14. Amiri-Hezaveh, Amirhossein, Convolution Method in Elastodynamics, Ph.D. in Theoretical and Applied Mechanics, UIUC, December 2021.

Completed Masters:

1. Srikanth Raviprasad, Experimental and Numerical Investigation of Ballistic Impacts: An Introduction to Novel Polymer Foam Core Sandwich Structures and Adaptive SPH Formulation, M.S. degree in Aerospace Engineering, UIUC, completed in May 2017.
2. Gabriela Couvertier-Santos, Characterization of Mechanical Properties of Covetic Wires, M.S. degree in Mechanical Engineering, UIUC, completed in August 2017.
3. Christopher Kozuch, Impact of Microstructural Parameters on Topology Optimization of Structures Made of Composites with Elliptical Inclusions, M.S. in Mechanical Engineering, UIUC, completed in May 2018.

University of Connecticut

Completed PhDs:

1. Lihua Chen, Electronic Structure and Vibrational Behavior of Polyethylene: Role of Chemical Morphological and Interfacial Complexity, PhD in Material Science, UConn, completed in August 2017.
2. Mattewos Tefferi, Characterization of Conduction Properties of DC Cable Dielectric Materials, PhD in Electrical Engineering, UConn, completed in December 2018.
3. Zongze Li, High Electric Field Conduction and Polarization in Polymer Dielectrics, Ph.D in Electrical Engineering, UConn, completed in November 2019.

4. Jindong Huo, Multiphysics Modelling of Arc-Solid Interaction and Gas Dynamics of Arc Interruption, Ph.D. in Materials Science, completed in September 2020.
5. Hiep Nguyen, 2D- Nanostructured Insulation Material for High Torque Density Electric Propulsion Motors, Ph.D. in Electrical Engineering, completed in November 2021.
6. Tohid Shahsavarian, Streamer and Partial Discharge Investigations on HVDC/MVDC Electrical and Electronic Applications at Harsh Environmental Conditions, completed in March 2022.
7. Mohamadreza Arab_Baferani, Novel Nanodielectrics for High-Voltage/Medium-Voltage Direct-Current Cable Insulation, completed in October 2022.

University of Denver

Completed PhDs:

1. Middleton, James, Aging of a Polymer Core Composite Conductor under Combined Ozone and Temperature Conditions, PhD in Materials Science, DU, completed in July 2014.
2. Hoffman, Joseph., On Thermal Aging Prevention in Polymer Core Composite Conductor Rods, PhD in Nanoscale Science and Engineering, DU, completed in Sept. 2015.
3. Hakansson, Eva., Galvanic Corrosion of Aluminum/Carbon Composite Systems, PhD in Mechanical Engineering, DU, completed in June 2016.
4. Bleszynski, Monika., Nanoengineering of Next Generation Silicone Rubber Materials for Extreme Applications, PhD in Mat Sci, MME Dept, DU, completed on June 28, 2018.
5. Lu, Tianyi, Synergistic Aging of GRP Composites, PhD in Mat Sci, MME Dept., DU, completed in Nov. 2018.
6. Henderson, Chrissy, Protection of High-Voltage Transformer Bushings and other Brittle Structures Against Impact, PhD in Engineering, completed in Fall 2019.
7. Daniel Waters; Monitoring of Polymer Core Composite Conductors under Excessive Mechanical Loads using Fiber Bragg Grating Sensors, PhD in Mechanical Engineering, completed in Oct 2021.
8. Sabuj Khadka, Monitoring of State Transitions in Extreme Environment Application Materials Using Fiber Bragg Grating Sensors, complete on Feb 18, 2022.

Planned PhDs:

9. Jide Williams, Application of Polymer Matrix Composites in Large Power Transformer Tanks, expected completion in Winter 2023.

10. Matt Reil, Energetics of Nanoparticle Interactions with Polymeric Materials, expected completion in Spring 2023
11. Billy Grell, Effect of Powder Oxidation on Mechanical Properties of EMB Ti-6-4 Alloys, expected completion in Spring/Summer 2023.

Completed Masters:

1. Kosak, J. Stress Corrosion Cracking in Polymer Matrix Glass Fiber Composites. MS Thesis in Mechanical Engineering, MME Dep., DU, completed in May 2014.
2. Lu, Tianyi, Degradation of High Voltage Glass Fiber-Reinforced Polymer Matrix Composites by Aggressive Environmental Conditions, MS in Materials Science, Department of Mechanical and Materials Engineering, DU, completed in July 2014.
3. Bleszynski, Monika, Aging Assessment of High Voltage Single Component Room Temperature Vulcanized Silicone Rubber (RTV-1) Subjected to Aqueous Salt, MS in Engineering, MME Dep., DU, completed Dec 9, 2015.
4. Waters, D., Low-Velocity Impact to High-Temperature Low-Sag Overhead Conductors, MS in Mechanical Engineering, MME Dep., DU, completed in Feb 2016.
5. Clark, Edward, Variable Oxidation & Defects in Ti-6Al-4V Material in Electron Beam Melting Additive Manufacturing, MME Dep., DU, completed in March 2017.
6. Woll, Theodore "Robert", Ice Adhesion Analysis of Severely Aged PDMS Rubbers; MS in Materials Science, MME Dept., DU, completed in June 2018.
7. Reil, Matt. Graphene/Oxide Interactions with Polymer Matrix Composites Modeled Using Molecular Dynamics; MS in Materials Science, MME Dept., DU, completed in August 2020.

Michigan Technological University

Completed PhDs:

1. William Pisani, "Molecular Dynamics Modeling of PEEK, Cyanate Esters, and Carbon Nanotubes for Aerospace Applications", PhD in Mechanical Engineering – Engineering Mechanics, Michigan Technological University, December 2019
2. Oladeji Fadayomi, "Development of Aluminum Alloys with Optimal Strength and Electrical Conductivity" PhD in Department of Materials Science and Engineering, Michigan Tech University, February 2019.
3. Julie M. Tomasi, "Investigation of Mechanical, Electrical, and Thermal Properties of Particulate/Fiber/Polymer Composites", Ph.D., Department of Chemical Engineering, Michigan Technological University, April 2018.

4. Sorayot Chinkanjanarot, "Multiscale Modeling: Thermal Conductivity of Graphene/Cyclaliphatic Epoxy Composites", Ph.D. in Mechanical Engineering – Engineering Mechanics, Michigan Technological University, November 27, 2017.
5. Matthew S. Radue, "Molecular Modeling of Aerospace Polymer Matrices Including Carbon Nanotube-Enhanced Epoxy", Ph.D. in Mechanical Engineering – Engineering Mechanics, Michigan Technological University, July 2017.
6. Cameron Hadden, "Molecular Modeling of Epon 862-DETDA/Carbon Composites", Ph.D. in Mechanical Engineering – Engineering Mechanics, Michigan Technological University, May 2015.
7. Danielle Rene Klimek-McDonald, "Mechanical Properties of Graphene Nanoplatelet/Epoxy Composites", Department of Chemical Engineering, Michigan Technological University, July 17, 2015.
8. Benjamin D. Jensen, "Predicting the Mechanical Properties of Carbon-Based Materials using Molecular Dynamics", Ph.D. in Mechanical Engineering – Engineering Mechanics, Michigan Technological University, April 3, 2014
9. William Pisani, "Multiscale Computational Modeling of PEEK Materials" Ph.D. in Mechanical Engineering – Engineering Mechanics, Michigan Technological University, August 2019.

Completed Masters:

1. Omkar Bhumkar, "FEA modeling of Pressurized Borosilicate Bushing Impact", M.S. report in Mechanical Engineering – Engineering Mechanics, Michigan Technological University, April 2019.
2. Mayank Bagaria, "Split-Hopkinson Bar Testing and FEA Analysis of Borosilicate Glass Impact", M.S. report in Mechanical Engineering – Engineering Mechanics, Michigan Technological University, April 2019.
3. Sandesh Gandhi, "Simulation of Crack Pattern on Borosilicate Glass Cylinder Under Pellet Impact, Using LS-Dyna", M.S. report in Mechanical Engineering – Engineering Mechanics, Michigan Technological University, July 2017.
4. Paul M. Roehm, "Minimizing Run Time of Finite Element Analyses: Applications in Conformable CNG Tank Modeling", M.S. report in Mechanical Engineering – Engineering Mechanics, Michigan Technological University, March 2017.
5. Rachel Clark, "Heat Treatment of 4943 Aluminum Produced by GTAW- and GMAW-Based Additive Manufacturing", Master of Science, Department of Materials Science and Engineering, Michigan Technological University, August 2017.

HVT Journal Papers 2014-2022

Published Refereed Journal Papers - 185

University of Denver

1. Middleton, J., Hoffman, J., Burks, B. and Kumosa, M., Aging of a Polymer Core Composite Conductor; Mechanical Properties and Residual Stresses, *Composites Part A*, Vol. 69 (2015), pp. 159-167.
2. Hoffman, J., Middleton, J. and Kumosa, M., Effect of a Surface Coating on Flexural Performance of Thermally Aged Hybrid Glass/Carbon Epoxy Composite Rods, *Composites Science and Technology*, Vol. 106 (2015) pp. 141-148.
3. Hakansson, E., Predecki, P. and Kumosa, M., Comparison of Galvanic Corrosion Performance of HTLS ACCC and Conventional ACSR Conductors, *IEEE Transactions on Reliability*, Vol. 64, Issue 3 (2015) pp. 928-934.
4. Allen B., Bleszynski, M., Willis, E., and Kumosa, M., Investigation into the Effects of Environmental Stressors on RTV-1 Silicone-Based Caulk Materials, *IEEE Transactions on Dielectrics and Electrical Insulation*, Vol. 22, Issue 5 (October 2015) pp. 2978-2986.
5. Hakansson, E., Ricker, R., Predecki, P. and Kumosa, M., Electrochemical In-situ Assessment Method for Galvanic Corrosion in Bare Overhead Transmission Line Conductors, *CIGRE Science and Engineering*, June 2016, No 5, pp. 38-49.
6. Lu, T., Solis-Ramos, E., Yi, Y., and Kumosa, M., Synergistic Environmental Degradation of High Voltage Glass Reinforced Polymer Composites, *Polymer Degradation and Stability*, Vol. 131, Sep. 2016, pp. 1-8.
7. Bleszynski, M. and Kumosa, M., Silicone Rubber RTV Aging in the Presence of Aqueous Salt, *IEEE Transactions on Dielectrics and Electrical Insulation*, Vol. 23. No. 5 (2016) pp. 2822-2829.
8. Hakansson, E, Hoffman, J., Predecki, P. and Kumosa, M., The Role of Corrosion Product Deposition in Galvanic Corrosion, *Corrosion Science*, Vol. 114 (2016) pp. 10-16.
9. Solis-Ramos, E. and Kumosa, M., Synergistic Effects in Stress Corrosion Cracking of Glass Reinforced Polymer Composites, *J. Polymer Degradation in Stability*, Vol. 136 (2017) pp. 146-157.
10. Waters, D., Hoffman, J., Hakansson, E. and Kumosa, M., Low Velocity Impact To Transmission Line Conductors, *Int. J. Impact Engineering*, Vol. 106 (2017) pp. 64-72.
11. Grell, W., E. Solis-Ramos, E., Clark, E, Lucon, E. Garboczi, E., Predecki, P., Loftus, Z., and Kumosa, M., Effects of Powder Oxidation on Impact Toughness of Electron Beam Melt Ti-6Al-4V, *J. Additive Manufacturing*, Vol. 17 (2017) pp. 123-134.
12. Bleszynski, M and Kumosa, M., Silicone Rubber Aging in Electrolyzed Aqueous Salt Environments, *Polymer Degradation and Stability*, Vol. 146 (2017) pp. 61-68.

13. Lu, T., Solis-Ramos, E., YI, Y., and Kumosa, M., Particle Removal Mechanisms in Synergistic Aging of Polymers and Glass Reinforced Polymer Composites under Combined UV and Water, *Composites Science and Technology*, Vol. 153 (2017) pp. 273-181.
14. Bakir, M., Henderson, NC, Meyer, J. J., Oh, J., Miljkovic, N., Kumosa, M., Economy, J., and Jasiuk, I., Effects of Environmental Aging on Physical Properties of Aromatic Thermosetting Copolyester Matrix Neat and Nanocomposite Foams, *Polymer Degradation and Stability*, Vol. 147 (2018) pp. 49-56.
15. Bleszynski, M. and Kumosa, M., Aging Resistant TiO₂/Silicone Rubber Composites, *Composites Science and Technology*, Vol. 164 (2018) pp. 74-81.
16. Lu, T., Solis-Ramos, E., YI, Y., and Kumosa, M., UV Degradation Model for Polymers and Polymer Matrix Composites, *Polymer Degradation and Stability*, Vol 154 (2018) pp. 2013-210.
17. Waters, D., Hoffman, J. and Kumosa, M., Monitoring of Overhead Transmission Conductors Subjected to Static and Impact Loads using Fiber Bragg Grating Sensors, *IEEE Transactions on Instrumentation and Measurement*, Vol. 68, No. 2 (2019, pp. 595-605.
18. Henderson, C., DeFrance, C., Hoffman, J., Predecki, P. and Kumosa, M., Ballistic Fragmentation Confinement of Coated Brittle Transformer Bushing Models, *Int. J. Impact Engineering*, Vol. 122 (Dec 2018) pp. 363-373.
19. Henderson, C., DeFrance, C., Predecki, P. and Kumosa, M., Damage Prevention in Transformer Bushings Subjected to High-Velocity Impact, *Int. J. Impact Engineering*, Vol. 130 (2019) pp. 1-10.
20. Bleszynski, M., Woll, R., Middleton, J. and Kumosa, M. Effect of Crosslinking, Embedded TiO₂ Particles and Aging on PDMS Icephobic Barriers, *Polymer Degradation and Stability*, Vol 166 (2019) pp. 272-282.
21. Bleszynski, M. and Kumosa, M., New Approach to Moisture Accumulation Assessment, *Materials & Design*, available on line, DOI: 10.1016/j.matdes.2019.108162
22. Henderson, C., Monteith, J., Solis-Ramos, E., Godard, R., Predecki, P. and Kumosa, M., Impact Protection of Borosilicate Glass Plates with Elastomeric Coatings in Drop Tower Tests, *Int. J. Impact Engineering*, Vol. 137 (2020) 103460.
23. Hoffman, J., Waters, D., Khadka, S., and Kumosa, M., Shape Sensing of Modern Electrical Transmission Lines Using FBG Sensors, *IEEE Transactions on Instrumentation and Measurement*, Vol. 61. Issue 1 (2020) pp. 249-257. \\
24. Clark, E, Bleszynski, M, Valdez, F. and Kumosa, M., Recycling Carbon and Glass Fiber/Polymer Composite Waste into Cementitious Materials, *Resources, Conservation and Recycling*, Vol. 155 (April 2020) 104659.
25. Hoffman, J. Khadka, S. and Kumosa, M., Determination of Gel Point and Completion of Curing in a Single Fiber Polymer, *Composites Science and Technology*, Vol. 188 (2020) 107997.
26. Khadka, S., Hoffman, J. and Kumosa, M., FBG Monitoring of Curing in Single Fiber Polymer Composites, *Composites Science and Technology*, 198 (2020) 108308.

27. Bleszynski, M., Reill., M., and Kumosa, M., Hydroxyl Group Separation Distances in Anti-Freeze Compounds and their Effects on Ice Nucleation, *Int. J. Molecular Sciences*, Vol. 21 (2020), pp. 8488.
28. Bleszynski, M., Mann, Shaun and Kumosa, M., Visualizing Silicone Rubber Damage Using Hyperspectral Imaging, *Polymers* 2020, 12(9), 2071; <https://doi.org/10.3390/polym12092071>.
29. Waters, D, Hoffman, J, and Kumosa, M., Effect of Fiber Misalignment on Bending Strength of Pultruded Hybrid Polymer Matrix Composite Rods, *Composites Part A, Composites part A: Applied Science and Manufacturing*, vol 143 (2021) 106287.
30. Bleszynski, M. and Reil, M. Computational Assessment of Modified Antifreeze Glycoproteins on Ice Nucleation, *Biophysica* 1 (2), 168-178.
31. Khadka, S., Kumosa, M., and J. Hoffman, J., Determination of Residual Stresses in a Single FBG Fiber/Epoxy Composite System, *Composites Science and Technology*, <https://www.sciencedirect.com/science/article/abs/pii/S0266353821004942>
32. Williams, J, Hoffman, J., Predecki, P., and KUMOSA, M., Application of Polymer Matrix Composites in Large Power Transformer Tanks, *IEEE Transactions on Power Delivery*,_10.1109/TPWRD.2022.3147410.
33. Khadka, S., Hoffman, J., Predecki, P. and KUMOSA. M., Monitoring Solidification of Tin-Bismuth Alloys Using FBG Sensors, *Materialia*, Vol 21 (2022) 101320.
34. Waters, D, Kumosa, M., and Hoffman, M., Evaluating Strain Limits of Embedded FBG Sensors in Pultruded Hybrid Composite Rods, *IEEE Transactions on Power Delivery*, 0 Print ISSN: 0885-8977 Online ISSN: 1937-4208 Digital Object Identifier: 10.1109/TPWRD.2022.3166070.
35. Reil, M, Hoffman, M, Predecki, P., and Kumosa, Graphene, and Graphene Oxide Energetic Interactions with Polymers Through Molecular Dynamics Simulations, *Computational Materials Science*, Vol 211 (2022) 111548.
36. Hoffman, J, Khadka, S, Predecki, P. and Kumosa, M. On Estimating Axial Strains Using FBG Sensors in Single Fiber Composites, *Materialia*, (2022), 151526.

Michigan Technological University

37. Fadayomi, O., P.G. Sanders, G.M. Odegard, "Microstructure and properties of precipitation-hardened Zr and Zn-Zr based aluminum alloys", *Journal of Alloys and Compounds*, Vol. 788, pp. 1218-1230 (2019)
38. Pisani, W.A., M.S. Radue; S. Chinkanjanarot; B.A. Bednarczyk; E.J. Pineda; K. Waters; R. Pandey; J.A. King; G.M. Odegard, "Multiscale Modeling of PEEK using Reactive Molecular Dynamics Modeling and Micromechanics", *Polymer*, Vol. 163, pp. 96-105 (2019)
39. Fadayomi, O., R. Clark, V. Thole, P.G. Sanders, G.M. Odegard, "Investigation of Al-Zn-Zr and Al-Zn-Ni Alloys for High Electrical Conductivity and Strength Application", *Materials Science and Engineering A: Structural Materials: Properties, Microstructure and Processing*, Vol. 743, pp. 785-797 (2019)
40. Chinkanjanarot, S., J.M. Tomasi, J.A. King, G.M. Odegard, "Thermal Conductivity of Graphene Nanoplatelet/Cycloaliphatic Epoxy Composites: Multiscale Modeling", *Carbon*, Vol. 140, pp. 653-663 (2018).

41. Tomasi, J.M., A.S. Krieg, N.J. Jensen, I. Miskioglu, J.A. King, G.M. Odegard, "Accelerated Hygrothermal Aging of Talc Nanoparticle/Cycloaliphatic Epoxy Composites", *Polymer composites*, Vol. 40, no. 7, pp. 2946-2953 (2019)
42. Krieg, A., J. King, D. Jaszczak, I. Miskioglu, O. Mills, G.M. Odegard, "Tensile and Conductivity Properties of Carbon Black/Epoxy, Graphene Nanoplatelet/Epoxy, and Carbon Black/Graphene Nanoplatelet/Epoxy Composites", *Journal of Composites Materials*, Vol. 52, no. 28, pp. 3909-3918 (2018)
43. Radue, M.S., G.M. Odegard, "Multiscale Modeling of Carbon Fiber/Carbon Nanotube/Epoxy Hybrid Composites: Comparison of Epoxy Matrices", *Composites Science and Technology*, Vol. 166, pp. 20-26 (2018).
44. Chinkanjanarot, S., M.S. Radue, S. Gowtham, J.M. Tomasi, D.R. Klimek-McDonald, J.A. King, G.M. Odegard, "Multiscale Thermal Modeling of Cured Cycloaliphatic Epoxy/Carbon Fiber Composites", *Journal of Applied Polymer Science*, Vol. 135, no. 25, 46371 (2018).
45. Tomasi, J.M., J.A. King, A.S. Krieg, I. Miskioglu, G.M. Odegard, "Thermal, Electrical, and Mechanical Properties of Talc- and Glass Microsphere-Reinforced Cycloaliphatic Epoxy Nanocomposites", *Polymer Composites*, Vol. 39, no. S3, pp. E1581-E1588 (2018).
46. King, J.A., J.M. Tomasi, D.R. Klimek-McDonald, I. Miskioglu, G.M. Odegard, T.R. King, J.W. Sutherland "Effects of Carbon Fillers on Conductivity and Tensile Properties of Polyetheretherketone (PEEK) Composites", *Polymer Composites*, Vol. 39, no. S2, pp. E807-E816 (2018).
47. Klimek-McDonald, D.R., J.A. King, I. Miskioglu, E.J. Pineda, G.M. Odegard, "Determination and Modeling of Mechanical Properties for Graphene Nanoplatelet/Epoxy Composites", *Polymer Composites*, Vol. 39, no. 6, pp. 1845-1851 (2018).
48. Radue, M.S., B.D. Jensen, S. Gowtham, D.R. Klimek-McDonald, J.A. King, G.M. Odegard, "Comparing the Mechanical Response of Di-, Tri-, and Tetra-functional Resin Epoxies with Reactive Molecular Dynamics", *Journal of Polymer Science Part B: Polymer Physics*, Vol. 56, pp. 255-264 (2018).
49. J.M. Tomasi, I.D. Helman, W.A. Pisani, D.R. Klimek-McDonald, S. Chinkanjanarot, I. Miskioglu, J.A. King, G.M. Odegard, "Accelerated hydrothermal aging of cycloaliphatic epoxy/graphene nanoparticle composites", *Polymer Degradation and Stability*, Vol. 133, pp. 131-135 (2016).
50. King, J.A., W.A. Pisani, D.R. Klimek-McDonald, W.F. Perger, G.M. Odegard, D.G. Turpeinen, "Shielding Effectiveness of Carbon Filled Polypropylene Composites", *Journal of Composite Materials*, Vol. 50, no. 16, pp. 2177-2189 (2015).
51. Hadden, C.M., D.R. Klimek-McDonald, E.J. Pineda, J.A. King, A.M. Reichenadter, I. Miskioglu, S. Gowtham, G.M. Odegard, "Mechanical Properties of Graphene Nanoplatelet/Carbon Fiber/Epoxy Hybrid Composites: Multiscale Modeling and Experiments", *Carbon*, Vol. 95, pp. 100-112 (2015).
52. King, J.A., W.A. Pisani, D.R. Klimek-McDonald, W.F. Perger, G.M. Odegard, "Shielding Effectiveness of Carbon Filled Polycarbonate Composites", *Journal of Applied Polymer Science*, Vol. 132, no. 43, 42719 (2015).

53. King, J.A., D.R. Klimek, I. Miskioglu, G.M. Odegard, “Mechanical Properties of Graphene Nanoplatelet/Epoxy Composites”, *Journal of Composite Materials*, Vol. 49, no. 6, pp. 659-668 (2015).

University of Illinois at Urbana-Champaign

54. S. Kale and M. Ostoja-Starzewski, “Elastic-plastic-brittle transitions and avalanches in disordered media,” *Physical Review Letters* **112**, 045503-1-5, 2014. DOI: 10.1103/PhysRevLett.112.045503.
55. S. Kale and M. Ostoja-Starzewski, “Morphological study of elastic-plastic-brittle transitions in disordered media,” *Physical Review E* **90**, 042405-1-15, 2014. DOI: 10.1103/PhysRevE.90.042405.
56. S. Kale, F. A. Sabet, I. Jasiuk, and M. Ostoja-Starzewski (2015), “Percolation Behavior of Polydisperse Prolate and Oblate Ellipsoids,” *Journal of Applied Physics* **118** (15), 154306. DOI: 10.1063/1.4933100.
57. S. Kale, A. Saharan, S. Koric and M. Ostoja-Starzewski, “Scaling and bounds in thermal conductivity of planar Gaussian correlated microstructures,” *Journal of Applied Physics* **117**, 104301, 2015. <http://dx.doi.org/10.1063/1.4914128>.
58. J. Zhang and M. Ostoja-Starzewski, “Mesoscale bounds in viscoelasticity of random composites,” *Mechanics Research Communications* **68**, 98-104, 2015. [doi:10.1016/j.mechrescom.2015.05.005](https://doi.org/10.1016/j.mechrescom.2015.05.005)
59. S. Kale, F. Sabet, I. Jasiuk, M. Ostoja-Starzewski, “Tunneling-percolation behavior of polydisperse prolate and oblate ellipsoids,” *Journal of Applied Physics* **118**(15), 154306, 2015. DOI: 10.1063/1.4933100 [cover](#).
60. R.I. Barabash, V. Agarwal, S. Koric, I. Jasiuk and J.Z. Tischler (2016), “Finite Element Simulation and X-ray Microdiffraction Study of Strain Partitioning in a Layered Nanocomposite,” *Journal of Applied Crystallography*, 4351347 (11 pages).
61. S. Kale, F. A. Sabet, I. Jasiuk, and M. Ostoja-Starzewski (2016), “Effect of Filler Alignment on Percolation in Polymer Nanocomposites using Tunneling-Percolation Model,” *Journal of Applied Physics* **120** (4), 045105. DOI: 10.1063/1.4959610.
62. M. Bakir, J.L. Meyer, J. Economy, I. Jasiuk (2016), “Heat Induced Polycondensation Reaction with Self-generated Blowing Agent Forming Aromatic Thermosetting Copolyester Foams,” *Macromolecules* **49** (17), 6484-6496. DOI: 10.1021/acs.macromol.6b00971.
63. P. Karimi, M. Ostoja-Starzewski, I. Jasiuk (2016), “Experimental and Computational Study of Shielding Effectiveness of Polycarbonate Carbon Nanocomposites,” *Journal of Applied Physics* **120**, 145103-1-11. DOI: 10.1063/1.4964691.
64. M. Ostoja-Starzewski, “Second law violations, continuum mechanics, and permeability,” *Continuum Mechanics and Thermodynamics* **28**, 489-501, 2016. DOI: 10.1007/s00161-015-0451-4; *Erratum* **29**, 359, 2017. DOI: 10.1007/s00161-016-0534-x.
65. V. Nishawala, M. Ostoja-Starzewski, M. Leamy and P.N. Demmie, “Simulation of elastic wave propagation using cellular automata and peridynamics, and comparison with experiments,” *Wave Motion* **60**, 73-83, 2016. <https://doi.org/10.1016/j.wavemoti.2015.08.005>.

66. D. Zhang and M. Ostoja-Starzewski, "Finite element solutions to the bending stiffness of a single-layered helically wound cable with internal friction," *ASME Journal of Applied Mechanics* **83**, 031003-1-8, 2016. DOI:10.1115/1.4032023.
67. M. Ostoja-Starzewski and B. Raghavan, "Continuum mechanics versus violations of the second law of thermodynamics," (invited) *J. Thermal Stresses* **39**:6, 734-749, 2016. <http://www.tandfonline.com/doi/full/10.1080/01495739.2016.1169140>.
68. V. Nishawala and M. Ostoja-Starzewski, "Peristatic solutions for finite one and two dimensional systems," *Mathematics and Mechanics of Solids* **22**(8), 1639-1653, 2017. DOI: 10.1177/1081286516641180.
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