Taylor H. Ware, Ph.D.
Assistant Professor, Department of Bioengineering, The University of Texas at Dallas
(972)-883-4937 warelab.co Taylor.ware@utdallas.edu

EDUCATION

January 2010- October 2013 **Ph.D., Materials Science and Engineering**
University of Texas at Dallas (Richardson, TX)
Dissertation**:** *Smart Polymers for Implantable Electronics*
Advisor: Prof. Walter E. Voit

M.S., Materials Science and Engineering
University of Texas at Dallas (Richardson, TX)

August 2005- December 2009 **B.S., Materials Science and Engineering**
Georgia Institute of Technology (Atlanta, GA)
summa cum laude

RESEARCH AND PROFESSIONAL EXPERIENCE

August 2015- **Assistant Professor**
Department of Bioengineering
University of Texas at Dallas (Richardson, TX)

October 2013- July 2015 **Postdoctoral Research Associate**
Air Force Research Laboratory (Wright-Patterson AFB, OH)
Advisor: Prof. Timothy J. White

Concurrent Appointments and Consultantships

2017-Present **Scientific Advisor**
Poly6 Technologies, Boston, MA

2010-2013 **Co-founder & VP Research and Development**,
Syzygy Memory Plastics, Dallas, TX

2008-2009 **Undergraduate Research Assistant**
Georgia Institute of Technology, Atlanta, GA

PROFESSIONAL RECOGNITION AND HONORS

CAREER Award, 2018-2023, National Science Foundation
Young Investigator Award, 2017-2020, United States Air Force
Erik Jonsson School Research Award, 2019, – Assistant Professor Level
Ph.D. Fellow, 2013, Texas Biomedical Device Center
Graduate Research Fellowship, 2011-2013, National Science Foundation
Graduated *summa cum laude*, 2009, Georgia Institute of Technology
President's Undergraduate Research Award, 2009, Georgia Institute of Technology

SPONSORED RESEARCH ACTIVITIES (>$5.3M total as faculty, >$3.0M to Ware Lab)

Current

1. "Liquid Crystal Elastomers: Dynamic Materials for Treatment of Incontinence in Women." *NIH NIBIB Trailblazer R21*, **PI: Taylor H. Ware (UTD)**, Co-I Mario Romero-Ortega (UTD), Co-I Philippe Zimmern (UTSW). August 2019 – July 2022. Total dollar value $600,000. Ware Lab dollar value: $545,942.

2. "Designing Living-Synthetic, Shape-Morphing Composites" *National Science Foundation DMR-BMAT*, **PI: Taylor H. Ware (UTD)**, Co-PI Zachary Campbell (UTD). September 2019 – August 2022. Total dollar value: $462,234. Ware Lab dollar value: $308,156.

3. "CAREER: Designing Microscale, Shape-Morphing Liquid Crystal Elastomers for Implantable Micromechanical Systems" *National Science Foundation DMR-Bmat*, **PI: Taylor H. Ware**, May 2018 – April 2023. Ware Lab Dollar value: $499,949.

4. "Liquid Crystal Elastomer – Liquid Metal Composites for Soft-Matter Embodied Intelligence" *Army Research Office* PI: Carmel Majidi (Carnegie Mellon) **Co-PI: Taylor H. Ware**. May 2018 – April 2020. Total dollar value: $439,655. Ware Lab dollar value: $180,000.

5. "(YIP) Designing Microstructure in Ordered Polymer Actuators" *Air Force Office of Scientific Research Low-Density Materials Program*, **PI: Taylor H. Ware** August 2017 – July 2020. Ware Lab Dollar value: $359,941.

6. "Collaborative Research: Microfabrication and Self-Assembly of Shape-Changing Hydrogels with Chromonic Liquid Crystalline Order" *National Science Foundation CMMI-MEP*, **PI: Taylor H. Ware (UTD and lead)**, PI: M. Ravi Shankar (U. Pittsburgh), PI: Robin Selinger (Kent St.) September 2017 – August 2020. Total dollar value: $458,914. Ware Lab dollar value: $175,711.

7. "Collaborative Research: Passive RFID Real-Time Temperature-Sensing Based on Programmable Liquid Crystal Elastomers" *National Science Foundation ECCS-CCSS*, PI: Stavros V. Georgakopoulos (FIU and lead), **PI: Taylor H. Ware (UTD)**
July 2017 – June 2020. Total dollar value: $420,000. Ware Lab dollar value: $209,615.

8. "Mechanically and Chemically Robust Packaging for Next Generation Neural Interfaces" *DARPA SBIR subcontract from Qualia Medical* **PI: Taylor H. Ware** (PI on subcontract). Co-PI: Joseph J. Pancrazio. 8/2018 – 7/2021. Total award dollar value: $649,394. Ware Lab dollar value: $432,496.

9. "SBIR Phase II: Low-cost Polymer Films for Foldable Cover Lenses Used in Flexible Displays." *National Science Foundation SBIR*, *Subcontract from Ares Materials* **PI: Taylor H. Ware** (PI on subcontract). April 2019 – March 2021. Ware Lab dollar value: $199,992.

10. "MRI: Acquisition of Plasma Enhanced Atomic Layer Deposition (PEALD) for Extremely Conformal Deposition of Metal and Nitride Films on 3D-Nanostructure Devices" *National Science Foundation*, PI: Jiyoung Kim (UTD), **Co-PI: Taylor H. Ware (UTD),** Co-PI Qing Gu (UTD), Co-PI Chadwin Young (UTD). October 2019 – September 2021. Total dollar value: $297,500. Ware Lab dollar value: $0.

11. "Investigating brain tumor drug delivery by optical modulation of blood-brain barrier using plasmonic nanobubbles" *CPRIT*, PI: Zhenpeng Qin, **Co-PI Taylor H. Ware**, Co-PI Shashank Sirsi, Co-PI Heather Hayenga April 2019- March 2022. Total Dollar value: $900,000. Ware Lab dollar value: $40,000.

Past

1. "SBIR Phase I: Spatially-heterogeneous modulus substrates for stretchable electronics fabrication." *National Science Foundation SBIR*, *Subcontract from Ares Materials* **PI: Taylor H. Ware** (PI on subcontract). July 2017 – June 2018. UTD award dollar value: $49,322.

2. "Liquid Crystal Elastomer Linear Actuators" Sponsored Research Agreement. *Leggett & Platt, Inc.* **PI: Taylor H. Ware**, April 2018 – March 2019. Dollar value: $55,000.

3. "Research Support Gift for the Characterization of Decellularized Tissues" *Seed Biotech, Inc.* **PI: Taylor H. Ware** August 2016. Dollar value: $47,000.

4. "Synthesis and Characterization of Biomimetic Acrylic Triple Shape Memory Polymers" National Science Foundation Graduate Research Fellowship, **Fellow: Taylor H. Ware** (Fellow). May 2011 – October 2013. Dollar value: $120,000.

BOOKS AUTHORED OR CO-AUTHORED

1. Ware, T. H. (2017). "Photoinduced Shape Programming." In *Photomechanical Materials, Composites, and Systems*, edited by Timothy J. White, 327-68. John Wiley & Sons, Ltd.

REFEREED JOURNAL ARTICLES (h-index =27, >2500 citations, Google Scholar 8/2019)

[1]= mentored grad student, [2]= mentored post-doc, [3]= mentored undergraduate, *= corresponding author

Published

48. Tabrizi, M., T. H. Ware, and M. R. Shankar (2019). "Voxelated Molecular Patterning in 3-Dimensional Freeforms." *ACS Applied Materials and Interfaces*. 11 (31):28236-28245.

47. Mu J., M. J. de Andrade, S. Fang, X. Wang, E. Gao, N. Li, S. H. Kim, H. Wang, C. Hou, Q. Zhang, M. Zhu, D. Qian, H. Lu, D. Kongahage, S. Talebian, J. Foroughi, G. Spinks, H. Kim[1], T. H. Ware, H. J. Sim, D. Y. Lee, Y. Jang, S. J. Kim, and R. H. Baughman (2019). "Sheath-Run Artificial Muscles." Science 365 (6449):150-155.

46. Shafiq Y., J. Gibson, H. Kim[1], C. P. Ambulo[1], T. H. Ware, and S. V. Georgakopoulos (2019). "A Reusable Battery-Free RFID Temperature Sensor." IEEE Transactions on Antennas and Propagation: DOI 10.1109/TAP.2019.2921150.

45. Boothby J. M.[1], J. Samuel[3], and T. H. Ware* (2019). "Molecularly-ordered hydrogels with controllable, anisotropic stimulus response." Soft Matter 15:4508-4517.

44. Kim, H.[1], J. Gibson, J. Maeng[2], M. O. Saed[2], K. Pimentel, R. T. Rihani, J. J. Pancrazio, S. V. Georgakopoulos, and T. H. Ware* (2019). "Responsive, 3D Electronics Enabled by Liquid Crystal Elastomer Substrates." ACS Applied Materials and Interfaces 11(21):19506-19513.

43. Saed M. O.[2], C. P. Ambulo[1], H. Kim[1], R. De[3], V. Raval[3], K. Searles[3], D. A. Siddiqui, John Michael Cue, M. C. Stefan, M. R. Shankar, and T. H. Ware* (2018). "Molecularly-Engineered, 4D-Printed Liquid Crystal Elastomer Actuators." Advanced Functional Materials 29(3):1806412

42. Brinckmann, S. A., N. Patra, J. Yao, T. H. Ware, C. P. Frick, and R. S. Fertig (2018). "Stereolithography of SiOC Polymer-Derived Ceramics Filled with SiC Micronwhiskers." Advanced Engineering Materials 20(11): 1800593.

41. Rihani, R. T., H. Kim[1], B. J. Black, R. Atmaramani, M. O. Saed[2], J. J. Pancrazio and T. H. Ware* (2018). "Liquid Crystal Elastomer-Based Microelectrode Array for In Vitro Neuronal Recordings". Micromachines 9(8): 416.

40. Ambulo, C. P.[1], J. J. Burroughs[3], J. M. Boothby[1], H. Kim[1], M. R. Shankar and T. H. Ware* (2017). "Four-dimensional Printing of Liquid Crystal Elastomers." ACS Applied Materials & Interfaces 9(42): 37332-37339.
39. Kim, H.[1], J. M. Boothby[1], S. Ramachandran[3], C. D. Lee[3] and T. H. Ware* (2017). "Tough, Shape-Changing Materials: Crystallized Liquid Crystal Elastomers." Macromolecules 50(11): 4267-4275.
38. Boothby, J. M[1]. and T. H. Ware* (2017). "Dual-responsive, shape-switching bilayers enabled by liquid crystal elastomers." Soft Matter 13(24): 4349-4356.
37. Boothby, J. M.[1], H. Kim[1] and T. H. Ware* (2017). "Shape changes in chemoresponsive liquid crystal elastomers." Sensors and Actuators B: Chemical 240: 511-518.
36. Kularatne, R. S.[2], H. Kim[1], J. M. Boothby[1] and T. H. Ware* (2017). "Liquid crystal elastomer actuators: Synthesis, alignment, and applications." Journal of Polymer Science Part B: Polymer Physics 55(5): 395-411.
35. Kularatne, R. S.[2], H. Kim[1], M. Ammanamanchi, H. N. Hayenga and T. H. Ware* (2016). "Shape-Morphing Chromonic Liquid Crystal Hydrogels." Chemistry of Materials 28(23): 8489-8492.

Contribution made prior to faculty appointment

34. Ecker, M., V. Danda, A. J. Shoffstall, S. F. Mahmood, A. Joshi-Imre, C. L. Frewin, T. H. Ware, J. R. Capadona, J. J. Pancrazio and W. E. Voit (2017). "Sterilization of Thiol-ene/Acrylate Based Shape Memory Polymers for Biomedical Applications."

Macromolecular Materials and Engineering 302(2): 1600331.
33. Ware, T. H., J. S. Biggins, A. F. Shick, M. Warner and T. J. White (2016). "Localized soft elasticity in liquid crystal elastomers." Nature Communications 7: 10781.
32. Mostajeran, C., M. Warner, T. H. Ware and T. J. White (2016). "Encoding Gaussian curvature in glassy and elastomeric liquid crystal solids." Proceedings of the Royal Society A: Mathematical, Physical and Engineering Science 472(2189).
31. Lee, K. M., T. H. Ware, V. P. Tondiglia, M. K. McBride, X. Zhang, C. N. Bowman and T. J. White (2016). "Initiatorless Photopolymerization of Liquid Crystal Monomers." ACS Applied Materials & Interfaces 8(41): 28040-28046.
30. Gibson, J. S., X. Liu, S. V. Georgakopoulos, J. J. Wie, T. H. Ware and T. J. White (2016). "Reconfigurable Antennas Based on Self-Morphing Liquid Crystalline Elastomers." IEEE Access 4: 2340-2348.
29. Ahn, S.-k., T. H. Ware, K. M. Lee, V. P. Tondiglia and T. J. White (2016). "Photoinduced Topographical Feature Development in Blueprinted Azobenzene-Functionalized Liquid Crystalline Elastomers." Advanced Functional Materials 26(32): 5819-5826.
28. Yokota, T., Y. Inoue, Y. Terakawa, J. Reeder, M. Kaltenbrunner, T. Ware, K. Yang, K. Mabuchi, T. Murakawa, M. Sekino, W. Voit, T. Sekitani and T. Someya (2015). "Ultraflexible, large-area, physiological temperature sensors for multipoint measurements." Proceedings of the National Academy of Sciences 112(47): 14533-14538.
27. Wie, J. J., K. M. Lee, T. H. Ware and T. J. White (2015). "Twists and Turns in Glassy, Liquid Crystalline Polymer Networks." Macromolecules 48(4): 1087-1092.
26. Ware, T. H. and T. J. White (2015). "Programmed liquid crystal elastomers with tunable actuation strain." Polymer Chemistry 6(26): 4835-4844.
25. Ware, T. H., Z. P. Perry, C. M. Middleton, S. T. Iacono and T. J. White (2015). "Programmable Liquid Crystal Elastomers Prepared by Thiol–Ene Photopolymerization." ACS Macro Letters 4(9): 942-946.
24. Ware, T. H., M. E. McConney, J. J. Wie, V. P. Tondiglia and T. J. White (2015). "Voxelated liquid crystal elastomers." Science 347(6225): 982-984.
23. Reit, R., D. Zamorano, S. Parker, D. Simon, B. Lund, W. Voit and T. H. Ware (2015). "Hydrolytically Stable Thiol–ene Networks for Flexible Bioelectronics." ACS Applied Materials & Interfaces 7(51): 28673-28681.
22. Fuchi, K., T. H. Ware, P. R. Buskohl, G. W. Reich, R. A. Vaia, T. J. White and J. J. Joo (2015). "Topology optimization for the design of folding liquid crystal elastomer actuators." Soft Matter 11(37): 7288-7295.
21. Ellson, G., M. Di Prima, T. Ware, X. Tang and W. Voit (2015). "Tunable thiol–epoxy shape memory polymer foams." Smart Materials and Structures 24(5): 055001.
20. Ware, T., D. Simon, C. Liu, T. Musa, S. Vasudevan, A. Sloan, E. W. Keefer, R. L. Rennaker and W. Voit (2014). "Thiol-ene/acrylate substrates for softening intracortical electrodes." Journal of Biomedical Materials Research Part B: Applied Biomaterials 102(1): 1-11.
19. Ware, T., A. R. Jennings, Z. S. Bassampour, D. Simon, D. Y. Son and W. Voit (2014). "Degradable, silyl ether thiol-ene networks." RSC Advances 4(75): 39991-

40002.
18. Reeder, J., M. Kaltenbrunner, T. Ware, D. Arreaga-Salas, A. Avendano-Bolivar, T. Yokota, Y. Inoue, M. Sekino, W. Voit and T. Sekitani (2014). "Mechanically adaptive organic transistors for implantable electronics." Advanced Materials 26(29): 4967-4973.
17. Haque, M. H., P. Upadhyaya, S. Roy, T. Ware, W. Voit and H. Lu (2014). "The changes in flexural properties and microstructures of carbon fiber bismaleimide composite after exposure to a high temperature." Composite Structures 108: 57-64.
16. Ware, T., D. Simon, R. L. Rennaker and W. Voit (2013). "Smart polymers for neural interfaces." Polymer Reviews 53(1): 108-129.
15. Ware, T., D. Simon, K. Hearon, T. H. Kang, D. J. Maitland and W. Voit (2013). "Thiol-Click Chemistries for Responsive Neural Interfaces." Macromolecular Bioscience 13(12): 1640-1647.
14. Simon, D., T. Ware, R. Marcotte, B. R. Lund, D. W. Smith, M. Di Prima, R. L. Rennaker and W. Voit (2013). "A comparison of polymer substrates for photolithographic processing of flexible bioelectronics." Biomedical Microdevices 15(6): 925-939.
13. Hearon, K., L. D. Nash, B. L. Volk, T. Ware, J. P. Lewicki, W. E. Voit, T. S. Wilson and D. J. Maitland (2013). "Electron beam crosslinked polyurethane shape memory polymers with tunable mechanical properties." Macromolecular Chemistry and Physics 214(11): 1258-1272.
12. Avendano-Bolivar, A., T. Ware, D. Arreaga-Salas, D. Simon and W. Voit (2013). "Mechanical cycling stability of organic thin film transistors on shape memory polymers." Advanced Materials 25(22): 3095-3099.
11. Hearon, K., C. J. Besset, A. T. Lonnecker, T. Ware, W. E. Voit, T. S. Wilson, K. L. Wooley and D. J. Maitland (2013). "A Structural Approach to Establishing a Platform Chemistry for the Tunable, Bulk Electron Beam Cross-Linking of Shape Memory Polymer Systems." Macromolecules 46(22): 8905-8916.
10. Ware, T., D. Simon, K. Hearon, C. Liu, S. Shah, J. Reeder, N. Khodaparast, M. P. Kilgard, D. J. Maitland and R. L. Rennaker (2012). "Three-Dimensional Flexible Electronics Enabled by Shape Memory Polymer Substrates for Responsive Neural Interfaces." Macromolecular materials and engineering 297(12): 1193-1202.
9. Ware, T., D. Simon, D. E. Arreaga-Salas, J. Reeder, R. Rennaker, E. W. Keefer and W. Voit (2012). "Fabrication of responsive, softening neural interfaces." Advanced Functional Materials 22(16): 3470-3479.
8. Ware, T., K. Hearon, A. Lonnecker, K. L. Wooley, D. J. Maitland and W. Voit (2012). "Triple-shape memory polymers based on self-complementary hydrogen bonding." Macromolecules 45(2): 1062-1069.
7. Lima, M. D., N. Li, M. Jung de Andrade, S. Fang, J. Oh, G. M. Spinks, M. E. Kozlov, C. S. Haines, D. Suh, J. Foroughi, S. J. Kim, Y. Chen, T. Ware, M. K. Shin, L. D. Machado, A. F. Fonseca, J. D. W. Madden, W. E. Voit, D. S. Galvão and R. H. Baughman (2012). "Electrically, Chemically, and Photonically Powered Torsional and Tensile Actuation of Hybrid Carbon Nanotube Yarn Muscles." Science 338(6109): 928-932.
6. Dei, D. K., B. R. Lund, J. Wu, D. Simon, T. Ware, W. E. Voit, D. MacFarlane, S. M. Liff and D. W. Smith Jr (2012). "High performance and multipurpose triarylamine-

enchained semifluorinated polymers." ACS Macro Letters 2(1): 35-39.

5. Ware, T., G. Ellson, A. Kwasnik, S. Drewicz, K. Gall and W. Voit (2011). "Tough shape-memory polymer—fiber composites." Journal of Reinforced Plastics and Composites 30(5): 371-380.
4. Hearon, K., K. Gall, T. Ware, D. J. Maitland, J. P. Bearinger and T. S. Wilson (2011). "Post-polymerization crosslinked polyurethane shape memory polymers." Journal of Applied Polymer Science 121(1): 144-153.
3. Ware, T., W. Voit and K. Gall (2010). "Effects of sensitizer length on radiation crosslinked shape–memory polymers." Radiation Physics and Chemistry 79(4): 446-453.
2. Voit, W., T. Ware and K. Gall (2010). "Radiation crosslinked shape-memory polymers." Polymer 51(15): 3551-3559.
1. Voit, W., T. Ware, R. R. Dasari, P. Smith, L. Danz, D. Simon, S. Barlow, S. R. Marder and K. Gall (2010). "High-Strain Shape-Memory Polymers." Advanced Functional Materials 20(1): 162-171.

REFEREED CONFERENCE PROCEEDINGS

1. Fuchi, K., P. R. Buskohl, T. Ware, R. A. Vaia, T. J. White, G. W. Reich and J. J. Joo (2014). "Inverse design of LCN films for origami applications using topology optimization." ASME Paper No. SMASIS2014-7497.

PATENTS & PATENT APPLICATIONS

5. Ware T, Ambulo C, Shankar M R, Boothby J, Burroughs J. A METHOD FOR ADDITIVE MANUFACTURING OF LIQUID CRYSTAL ELASTOMERS. US Provisional Patent App. 62/547,782 2017.

4. Ware T, McConney M, Wie J, Ahn S, White T. VOXELATED LIQUID CRYSTAL ELASTOMERS. US Patent. 9,902,906, 2018.

3. Ware T, McConney M, Wie J, White T. METHODS OF MAKING VOXELATED LIQUID CRYSTAL ELASTOMERS. US Patent App. 15/135,108 2015.

2. Voit WE, Ware T. SOFTENING MATERIALS BASED ON THIOL-ENE COPOLYMERS. US Patent 9931771; 2018.

1. Voit WE, Ware T, Gall K. SHAPE MEMORY POLYMERS AND PROCESS FOR PREPARING. US Patent 8299191; 2011.

INVITED TALKS

1. T H Ware (2019). Controlled Shape-Morphing in Elastomers and in Living Composites. US National Congress on Computational Mechanics: Austin, TX.

2. T H Ware (2019). Controlling the Stimulus Response of Liquid Crystal Elastomers in 3D on the Microscale and the Macroscale. Gordon Conference on Liquid Crystals: New London, NH.

3. T H Ware (2018). Reversible and Irreversible Shape Memory Without Mechanical Programming: Controlling Order in Polymer Networks. Shape Memory Applications Research and Technology Conference: Hong Kong, SAR.

4. T H Ware (2018). Intelligence in materials: Living and non-Living. International Symposium on Stimuli-Responsive Materials: Windsor, CA.

5. T H Ware (2018) 4D Printing of Liquid Crystal Elastomers. ANTEC-NPE: Orlando, FL.

6. T H Ware (2017) Patterning Shape Change with Molecular Order in Semicrystalline Networks, Elastomers, and Hydrogels. Liquid Crystal Institute: Kent State University: Kent, OH.

7. T H Ware (2017) Shape-Morphing Liquid Crystal Hydrogels and Elastomers. University of North Texas: Denton, TX.

8. T H Ware (2017) Programming Stimulus Response in Liquid Crystal Elastomers and Hydrogels. International Liquid Crystal Elastomer Conference: 2017 Houston, TX

9. T H Ware (2016) Programmed Stimulus Response in Liquid Crystal Elastomers and Hydrogels. ACS SWRM: 2016 Galveston, TX

10. T H Ware (2016) Programmed Stimulus Response in Liquid Crystal Elastomers and Hydrogels. University of Pittsburgh: Pittsburgh, PA

11. T H Ware (2016) Designing the Chemomechanical Response of Liquid Crystal Elastomers. MRS Spring 2016: Phoenix, AZ

12. T H Ware (2015). Programmed Anisotropy in Liquid Crystal Elastomers. MIT Lincoln Laboratories: Lexington, MA

13. T H Ware (2015). Programmed Anisotropy in Liquid Crystal Elastomers. Washington University: University City, MO

14. T H Ware, T J White (2015). Programmable Shape Change and Mechanics in Liquid Crystal Elastomers. International Symposium on Stimuli-Responsive Materials: Sonoma, CA

15. T H Ware, M E McConney, J J Wie, T J White (2014). Digital Programming of Liquid Crystal Elastomer Actuators, International Symposium on Stimuli-Responsive Materials: Sonoma, CA

16. T H Ware, D Simon, W Voit (2013). Shape Memory Polymer Substrates for Softening, 3D Neural Interfaces" Lawrence Livermore National Laboratory: Livermore, CA

17. T H Ware (2013). Shape Memory Polymer Substrates for Softening, 3D Neural Interfaces" Air Force Research Laboratory: Wright-Patterson AFB, OH

CONTRIBUTED ORAL PRESENTATIONS (PRESENTING AUTHOR)

1. T H Ware (2018). Intelligence in materials: Living and non-Living. Polymers for Advanced Technologies. College Station, TX.

2. T H Ware (2018) Liquid Crystal Elastomers as Substrates for Robust, Stretchable Electronics. ILCC 2018 Kyoto, JP

3. T H Ware (2018) Programmable Shape Change in Chromonic Liquid Crystal Hydrogels. MRS Spring 2018 Phoenix, AZ

4. T H Ware (2017) Programming Stimulus Response in Liquid Crystal Elastomers and Hydrogels. ACS Fall 2017 Washington, D.C.

5. T H Ware (2017) Chromonic Liquid Crystal Hydrogels as Anisotropic, Active Biomaterials. Society for Biomaterials Minneapolis, MN.

6. T H Ware (2017) Programming Stimulus Response in Chromonic Liquid Crystal Hydrogels. ACS Spring 2017 San Francisco, CA.

7. T H Ware (2017) Programming Stimulus Response in Chromonic Liquid Crystal Hydrogels. MRS Spring 2017 Phoenix, AZ

8. T H Ware (2016) Chromonic Liquid Crystal Hydrogels. ILCC 2016: Kent, OH

9. T H Ware (2016) Porous Liquid Crystal Elastomers. CIMTEC 2016: Perugia, Italy

10. T H Ware (2016) Liquid crystal elastomer composites with aligned, anisotropic fillers as multifunctional actuators. ACS Spring 2016: San Diego, CA

11. T H Ware (2015). Liquid Crystal Elastomers as Multifunctional Actuators. MRS Fall 2015: Boston, MA (Oral Presentation)

12. T H Ware, M E McConney, J J Wie, T J White (2014). Main-Chain Liquid Crystal Elastomer Actuators with Photopatterned Director Orientation, Materials Research Society: Boston, MA

13. T H Ware, D Simon, W Voit (2013). Shape Memory Polymer Substrates for Softening, 3D Neural Interfaces" MRS: San Francisco, CA

14. T H Ware, Hearon K, Voit W (2011). Triple Shape Memory Polymers based on Self-Complimentary Hydrogen Bonding. Society for Biomaterials, Orlando, FL

15. T H Ware, Gall K, Voit W (2010). Triple Shape Polymers with Self-Complementary Ureidopyrimidone Groups. TMS, Seattle, WA

16. T H Ware, Hearon K, Maitland D, Voit W (2011). Triple Shape Memory Polymers based on Self-Complementary Hydrogen Bonding. North American Thermal Analysis Society, Des Moines, IA.

17. T H Ware, Hearon K, Maitland DJ, Voit W (2011). Triple Shape Memory Polymers Based on Self-Complimentary Hydrogen Bonding. TMS, San Diego, CA

TEACHING AND SERVICE

Postdoctoral advisor:

Ruvini Kularatne (2016-2017), Mohand Saed (2017-2018), Jimin Maeng (2018-Present), Xili Li (2018-Present)

Doctoral advisor:

1. Dr. Jennifer Boothby defended 6/2019
2. Dr. Hyun Kim, defended 6/2019
3. Cedric Ambulo, 8/2016-Present
4. Laura Rivera, 8/2017-Present
5. Mustafa Abdelrahman 5/2018-Present
6. Suitu Wang 8/2018-Present
7. Mahjabeen Javed 8/2018-Present
8. Seelay Tasmim 8/2019-Present

Masters advisor:

Matthew Trisnadi – defended 5/2018

Classroom teaching:

BMEN 4360, Biomaterials and Medical Devices: Spring 2016, Fall 2016, Spring 2017, Spring 2018, Spring 2019

BMEN 6321, Polymers for Biomedical Applications: Fall 2017, Fall 2018, Fall 2019

- I developed this course.

Service:

Outreach: Trinity River Mission in Dallas, TX - Presented scientific concepts to monthly ~ 200 students with experimental activities; Introduced engineering education to families of students

Referee: Science, Nature, Nature Communications, Journal of the American Chemical Society, Angewandte Chemie, Advanced Materials, Advanced Functional Materials, Journal of Materials Chemistry C, Macromolecules, Sensors & Actuators: B, Journal of Polymer

Science: Part B, ACS Applied Materials and Interfaces, Macromolecular Materials and Engineering, Soft Matter, Matter, ACS Macro Letters, Journal of the Mechanical Behavior of Biomaterials

Grant reviewer: Army Research Office, Air Force Office of Scientific Research, National Science Foundation (CMMI & EFRI), ACS Petroleum Research Fund, European Research Council

Organizer: Shape-shifting polymeric systems symposium, ACS National Meeting August 2017

Co-organizer: Shape Memory Applications, Research, and Technology Conference December 2016; Minisymposium on Photoresponsive Materials April 2017

Organizing Committee: International Liquid Crystal Elastomer Conference, October 2017