

# Serife Tol

Assistant Professor, Department of Mechanical Engineering  
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EDUCATION	<b>Georgia Institute of Technology</b> , Atlanta, GA, USA Ph.D. in Mechanical Engineering	August 2012 - August 2017
	<b>Middle East Technical University</b> , Ankara, Turkey M.S. in Mechanical Engineering	September 2009 - May 2012
	<b>Middle East Technical University</b> , Ankara, Turkey B.S. in Mechanical Engineering	September 2004 - June 2009
PROFESSIONAL EXPERIENCE	<b>Assistant Professor, Mechanical Engineering</b> University of Michigan, Ann Arbor, MI, USA	September 2018 - Present
	<b>Visiting Scholar, Civil and Materials Engineering</b> University of Illinois at Chicago, Chicago, IL, USA	September 2017 - July 2018
	<b>Research Assistant, Mechanical Engineering</b> Georgia Institute of Technology, Atlanta, GA, USA	August 2012 - May 2017
	<b>Test and Analysis Engineer</b> ASELSAN - Defense Systems Technologies Sector, Ankara, Turkey	January 2009 - July 2012
RESEARCH INTERESTS	Phononic crystals, Metamaterials, Metasurfaces, Smart materials, Electromechanical systems, Energy harvesting, Sensing, Design, Dynamical systems, Mechanical vibrations, Wave propagation	
GRANTS	<ul style="list-style-type: none"><li>• ONR DURIP: 3D Scanning Vibrometer System for Measurements of Multi-Dimensional Motion Manifested in Morphing Wings, Metamaterial Structures, and Autonomous Systems, <i>PI: Serife Tol, Requested Amount: \$650,500 Project date 01/15/2024 - 01/15/2025.</i></li><li>• DOE NEUP: Subwavelength Ultrasonic Imaging for Rapid Qualification of Additively Manufactured Nuclear Structures and Components, <i>PI: Serife Tol, Requested Amount: \$1,000,000 Project date 10/01/2023 - 09/30/2026.</i></li><li>• DARPA NOM4D: In-Space Design Technologies Integrated with Novel Metamaterials for High-Precision Future Structures, <i>PI: Serife Tol, Requested Amount: \$1,462,397 (Phase I) Project date 10/01/2021 - 03/31/2023; &amp; \$1,273,786 (Phase II) Project date 04/01/2023-09/30/2024.</i></li><li>• NSF CMMI 1933436: Reconfigurable Metasurfaces for Controlling Elastic Wavefront, <i>PI: Serife Tol, Requested Amount: \$356,411, Project date: 09/01/2019 - 08/31/2023.</i></li><li>• NSF CMMI 1914583/1914663: Collaborative: Conformal Gradient-Index Lenses for Ultrasonic Wave Amplification and Improved Diagnostics, <i>PI: Serife Tol, Requested Amount: \$368,517, Project date: 06/15/2019 - 05/31/2023.</i></li></ul>	
JOURNAL PUBLICATIONS	J24: Danawe, H., Ozevin, D., and Tol, S., Structurally Embedded Gradient Index Lens for Guided Wave Amplification in Polymers, <i>Composite Structures</i> , 117868, 2024. J23: Lin, Z., and Tol, S., Shaping elastic wavefront through zigzag-folded metasurfaces, <i>Frontiers in Physics</i> , 11, 1304736, 2023. J22: Danawe, H., and Tol, S., Electro-momentum coupling tailored in piezoelectric metamaterials with resonant shunts, <i>APL Materials</i> , 11, 9, 2023.	

- J21: Danawe, H., and Tol, S., Broadband Subwavelength Imaging of Flexural Elastic Waves via Flat Phononic Crystal Lenses, *Scientific Reports*, 13(7310), 2023.
- J20: Lin, Z., and Tol, S., Electroelastic metasurface design with resonant piezoelectric shunts for tunable wavefront control, *Journal of Physics D: Applied Physics*, 56(16), 164001, 2023.
- J19: Danawe, H., and Tol, S., Harnessing negative refraction and evanescent waves toward super-resolution Lamb wave imaging, *Applied Physics Letters*, 123(052203), 2023.
- J18: Okudan, G., Danawe, H., Tol, S., and Ozevin, D., Controlling the thickness dependence of torsional wave mode in pipe-like structures with the gradient-index phononic crystal lens, *Ultrasonics*, 124(106728), 2022.
- J17: Danawe, H., Li, H., Sun, K., and Tol, S., Finite-Frequency Topological Maxwell Modes in Mechanical Self-Dual Kagome Lattices, *Physics Review Letters*, 129, 204302, 2022.
- J16: Lin, Z., Zhang, Y., Wang, K.W., and Tol, S., Anomalous Wavefront Control Via Nonlinear Acoustic Metasurface Through Second-Harmonic Tailoring And Demultiplexing, *Applied Physics Letters*, 121, 201703, 2022.
- J15: Danawe, H. and Tol, S., Experimental Realization of Negative Refraction and Subwavelength Imaging for Flexural Waves in Phononic Crystal Plates, *Journal of Sound and Vibration*, 518, 116552, 2022.
- J14: Danawe, H., Li, H., Al Ba'ba'a, and Tol, S., Existence of Corner Modes in Elastic Twisted Kagome Lattices, *Physical Review B*, 104(24), L241107, 2021.
- J13: Al Ba'ba'a, H., Lin, Z., and Tol, S., Metadamping Enhancement and Tunability via Scissor-Like Electromechanical Metamaterials, *Journal of Applied Physics*, 130(18), 184901, 2021.
- J12: Lin, Z., Al Ba'ba'a, H., and Tol, S., Piezoelectric Metastructures for Simultaneous Broadband Energy Harvesting and Vibration Suppression of Traveling Waves, *Smart Materials and Structures*, 30, 075037, 2021.
- J11: Okudan, G., Danawe, H., Ozevin, D., and Tol, S., Torsional Wave Focusing in Cylindrical Structures with the Conformal Gradient-Index Phononic Crystal Lens, *Journal of Applied Physics*, 129, 174902, 2021.
- J10: Okudan, G., Danawe, H., Zhang, L., Ozevin, D., and Tol, S., Enhancing Acoustic Emission Characteristics in Pipe-like Structures with Gradient Index Phononic Crystal Lens, *Materials*, 14 (6), 2021.
- J9: Lin, Z. and Tol, S., Elastic Metasurfaces for Full Wavefront Control and Low-Frequency Energy Harvesting, *Journal of Vibration and Acoustics*, 143 (6), 061005-1, 2021.
- J8: Danawe, H., Okudan, G., Ozevin, D., and Tol, S., Conformal Gradient-Index Phononic Crystal Lens for Ultrasonic Wave Focusing in Pipe-like Structures, *Applied Physics Letters*, 29, 117, 021906, 2020.
- J7: Tol, S., Degertekin, F. L., and Erturk, A., 3D-Printed Lens for Next-Generation Structure-Borne Wave Focusing and Harvesting, *Additive Manufacturing*, 29, 100780, 2019.
- J6: Tol, S., Degertekin, F. L., and Erturk, A., Structurally-Embedded Reflectors and Mirrors for Elastic Wave Focusing and Harvesting, *Journal of Applied Physics*, 122, 164503, 2017.
- J5: Tol, S., Degertekin, F. L., and Erturk, A., Phononic Crystal Luneburg Lens for Omnidirectional Elastic Wave Focusing and Energy Harvesting, *Applied Physics Letters*, 111, 013503, 2017.
- J4: Tol, S., Xia, Y., Ruzzene, M., and Erturk, A., Self-Bending Elastic Waves and Obstacle Circumventing in Wireless Power Transfer, *Applied Physics Letters*, 110, 163505, 2017.
- J3: Tol, S., Degertekin, F. L., and Erturk, A., Gradient-Index Phononic Crystal Lens-based Enhancement of Elastic Wave Energy Harvesting, *Applied Physics Letters*, 109, 063902, 2016. **(2017 ASME Energy Harvesting Best Paper Award)**.
- J2: Tol, S., Degertekin, F. L., and Erturk, A., Piezoelectric Power Extraction from Bending Waves: Electroelastic Modeling, Experimental Validation, and Performance Enhancement, *Wave Motion*, 60, pp. 20-34, 2016.
- J1: Tol, S. and Ozguven, H. N., Dynamic Characterization of Bolted Joints Using FRF Decoupling and Optimization, *Mechanical Systems and Signal Processing*, 54-55, pp. 124-138, 2015.
- CONFERENCE C26: Heye-Smith, K., Oudghiri-Idrissi, O., Vijayachandran, A., McInerney, J., Poli, A., Mao, X., Waas, A., Tol, S., and Arruda, E., In-space Manufacturable de-novo Solar Array Structures Integrating Metamaterial Technologies: Part III Thermal Analysis, *2024 AIAA SciTech*, Orlando, Florida, 8-12 January 2024.
- C25: Vijayachandran, A., Oudghiri-Idrissi, O., Lu, W., McInerney, J., Poli, A., Mao, X., Arruda, E.,

- Tol, S., and Waas, A., In-space Manufacturable Solar Array Structures Integrating Metamaterial Technologies, Part II: Numerical Models and Design Optimizations, *2024 AIAA SciTech*, Orlando, Florida, 8-12 January 2024.
- C24: Oudghiri-Idrissi, O., Lu, W., Vijayachandran, A., McInerney, J., Poli, A., Danawe, H., Mao, X., Arruda, E., Waas, A., and Tol, S., In-space Manufacturable Solar Array Structures Integrating Metamaterial Technologies, Part I : Design Approaches, Numerical Modeling, and Experimental Validation, *2024 AIAA SciTech*, Orlando, Florida, 8-12 January 2024.
- C23: Lu, W., Oudghiri-Idrissi, O., Danawe, H., and Tol, S., Design Optimization of 3D Printed Chiral Metamaterials with Simultaneous High Stiffness and High Damping, *In Society for Experimental Mechanics Annual Conference and Exposition*, pp. 95-98. Springer Nature Switzerland, 2023.
- C22: Lin, Z., Zhang, Y., Wang, K.W., Tol, S., Nonlinear acoustic metasurface for simultaneous higher-harmonic generation and demultiplexing, *Proceedings of the 29th SPIE Annual International Symposium on Smart Structures and Materials & Nondestructive Evaluation and Health Monitoring*, Long Beach, California, United States, 6-10 March 2022. (**Best Student Paper Award, 2nd place**).
- C21: Lin, Z., Barghouty N., Tol, S., Multifunctional Electromechanical Metastructures for Energy Harvesting and Vibration Mitigation, *Proceedings of the 14th ASME 2021 Conference on Smart Materials, Adaptive Structures and Intelligent Systems (SMASIS 2021)*, Virtual, 14-15 September 2021.
- C20: Danawe, H., and Tol, S., Frequency Tunable Phononic Crystal Flat Lens for Subwavelength Imaging, *Proceedings of the ASME 2021 International Design Engineering Technical Conferences and Computers and Information in Engineering Conference (IDETC/CIE2021)*, Virtual, 17-20 August 2021.
- C19: Danawe, H., Wang, Z., Okudan, G., Ozevin, D., and Tol, S., Simultaneous Amplification of Guided Wave Modes in Polymer Pipes via Structurally Embedded Gradient-Index Lens, *Proceedings of the 28th SPIE Annual International Symposium on Smart Structures and Materials & Nondestructive Evaluation and Health Monitoring*, Virtual, 22-26 March 2021.
- C18: Okudan, G., Danawe, H., Ozevin, D., and Tol S., Manipulating the Torsional Mode in Pipe-Like Structures with Mechanical Lens for Extended Propagation Distance, *Proceedings of the 28th SPIE Annual International Symposium on Smart Structures and Materials & Nondestructive Evaluation and Health Monitoring*, Virtual, 22-26 March 2021.
- C17: Danawe, H., Wang, Z., Okudan, G., Ozevin, D., and Tol, S., Structurally Embedded Gradient-Index Lens for Extended Amplification of Guided Waves in Polymer Pipes, *Proceedings of the 13th ASME Conference on Smart Materials, Adaptive Structures and Intelligent Systems (SMASIS 2020)*, Virtual, 15 September 2020.
- C16: Lin, Z. and Tol, S., Elastic Metasurfaces for Low-Frequency Flexural Wavefront Control, *Proceedings of the ASME 2020 International Design Engineering Technical Conferences and Computers and Information in Engineering Conference (IDETC/CIE2020)*, Virtual, 17-19 August 2020.
- C15: Danawe, H., Ozevin, D., and Tol, S., Numerical Investigation of Multi-Mode Guided Wave Focusing in Pipe-Like Structures Using Gradient Index Metamaterial Lens Design, *Proceedings of the ASME 2020 International Design Engineering Technical Conferences and Computers and Information in Engineering Conference (IDETC/CIE2020)*, Virtual, 17-19 August 2020.
- C14: Danawe, H., Okudan, G., Ozevin, D., and Tol, S., Metamaterial-based amplification of multi-mode ultrasonic guided waves toward improved damage detection in pipelines, *27th SPIE Annual International Symposium on Smart Structures and Materials & Nondestructive Evaluation and Health Monitoring*, Virtual, 26-30 April 2020. (**Best Student Paper Award, 2nd place**).
- C13: Okudan, G., Danawe, H., Tol, S., and Ozevin, D., Reciprocal amplification of wave front for planar or point sources using a metamaterial lens to increase the inspection distance of pipelines, *27th SPIE Annual International Symposium on Smart Structures and Materials & Nondestructive Evaluation and Health Monitoring*, Virtual, 26-30 April 2020.
- C12: Tol, S., Okudan, G., and Ozevin, D., Amplifying Propagating Elastic Waves in Pipe-Like Structures by Metamaterial Lens for the Enhanced Guided Wave Ultrasonics, *9th Conference on Structural Health Monitoring of Intelligent Infrastructure*, St Louis, MO, 4-9 August 2019.
- C11: Tol, S., Okudan, G., and Ozevin, D., Wave focusing in pipe-like structures via gradient-index metamaterial lens toward damage detection and localization, *Proceedings of the 26th SPIE Annual International Symposium on Smart Structures and Materials & Nondestructive Evaluation and Health Monitoring*, Denver, CO, 3-7 March 2019.

- C10: Tol, S., Degertekin, F. L., and Erturk, A., Low-Frequency Elastic Wave Focusing and Harvesting via Locally Resonant Metamaterials, *Proceedings of the 10th ASME Conference on Smart Materials, Adaptive Structures and Intelligent Systems*, Snowbird, UT, 18-20 September 2017.
- C9: Tol, S., Degertekin, F. L., and Erturk, A., Luneburg Lens for Omnidirectional Structure-Borne Wave Focusing and Energy Harvesting, *Proceedings of the 24th SPIE Annual International Symposium on Smart Structures and Materials & Nondestructive Evaluation and Health Monitoring*, Portland, OR, 25-29 March 2017.
- C8: Tol, S., Degertekin, F. L., and Erturk, A., 3D-Printed Lens for Structure-Borne Wave Focusing and Energy Harvesting, *Proceedings of the 24th SPIE Annual International Symposium on Smart Structures and Materials & Nondestructive Evaluation and Health Monitoring*, Portland, OR, 25-29 March 2017.
- C7: Tol, S., Vora, F. T., Degertekin, F. L., and Erturk, A., Embedded Elastic Wave Mirrors for Enhanced Energy Harvesting, *Proceedings of the IEEE Sensors Conference*, Orlando, FL, 30 October – 2 November 2016.
- C6: Tol, S., Degertekin, F. L., and Erturk, A., Elastic Wave Focusing Concepts for Dramatically Enhanced Piezoelectric Energy Harvesting, *Proceedings of the 27th International Conference on Adaptive Structures and Technologies Conference*, Lake George, NY, 3-5 October 2016.
- C5: Tol, S., Degertekin, F. L., and Erturk, A., Dramatic Enhancement of Elastic Wave Energy Harvesting Using a Gradient-Index Phononic Crystal Lens, *Proceedings of the 9th ASME Conference on Smart Materials, Adaptive Structures and Intelligent Systems*, Stowe, VT, 28-30 September 2016. (**Best Student Paper Award**).
- C4: Tol, S., Degertekin, F. L., and Erturk, A., Modeling and Enhancement of Piezoelectric Power Extraction from One-Dimensional Bending Waves, *Proceedings of the 21st SPIE Annual International Symposium on Smart Structures and Materials & Nondestructive Evaluation and Health Monitoring*, San Diego, CA, 9-13 March 2014.
- C3: Tol, S., Degertekin, F. L., and Erturk, A., Harvesting of Bending Waves in One-Dimensional Infinite Beams Using Resistive-Reactive Circuits, *Proceedings of the 6th ASME Conference on Smart Materials, Adaptive Structures and Intelligent Systems*, Snowbird, UT, 16-18 September 2013.
- C2: Tol, S. and Ozguven, H. N., Experimental Verification and Improvement of Dynamic Characterization Method for Structural Joints, *Topics in Modal Analysis I, Volume 7, Proceedings of the 31st International Modal Analysis Conference (IMAC)*, Anaheim, CA, 2013.
- C1: Tol, S. and Ozguven, H. N., Dynamic Characterization of Structural Joints Using FRF Decoupling, *Topics in Modal Analysis I, Volume 5, Proceedings of the 30th International Modal Analysis Conference (IMAC)*, Jacksonville, FL, 2012.
- CONFERENCE P23: Danawe, H., and Tol, S., Super-resolution Lamb wave imaging with evanescent wave amplification via bounded phonon slab modes, *Society of Engineering Science Annual Conference (SES 2023)*, Minneapolis, MN, United States, 8-11 October 2023.
- PRESENTATIONS
- P22: Lu, W., Oudghiri-Idrissi, O., Danawe, H., Vijayachandran, and Tol, S., The Role of the Dissipative Phononic Crystal Beams for Space Applications, *ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference (IDETC/CIE 2023)*, Boston, MA, United States, 20 – 23 August 2023.
- P21: Sharma, Y., and Tol, S., Bianisotropic Elastic Metasurface for Asymmetric Wave Tailoring, *ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference (IDETC/CIE 2023)*, Boston, MA, United States, 20 – 23 August 2023.
- P20: Oudghiri-Idrissi, O., Lu, W., Vijayachandran, A., McInerney, J., Poli, Danawe, H., A., Mao, X., Arruda, E., Waas, A., and Tol, S., Design of In-space 3D Printable Spacecraft Incorporating Metamaterial Technologies, *ASME Aerospace Structures, Structural Dynamics, and Materials (SSDM 2023)*, San Diego, California, United States, 19-21 June 2023.
- P19: Oudghiri-Idrissi, O., Danawe, H., Vijayachandran, A., Poli, A., Mao, X., Arruda, E., Waas, A., and Tol, S., Experimental Validation of Plate Stiffening via Crumpling, *ASME Aerospace Structures, Structural Dynamics, and Materials (SSDM 2023)*, San Diego, California, United States, 19-21 June 2023.
- P18: Danawe, H., and Tol S., Harnessing negative refraction in the creation of perfect lens for super-resolution imaging, *SPIE Smart Structures + NDE*, Long Beach, California, United States, 12-16

March 2023.

- P17: Lin, Z., and Tol S., Origami-inspired reconfigurable elastic metasurfaces, *SPIE Smart Structures + NDE*, Long Beach, California, United States, 12-16 March 2023.
- P16: Lu, W., Oudghiri-Idrissi, O., Danawe, H., and Tol S., Design Optimization of 3D-Printed Chiral Metamaterials with Simultaneous High Stiffness and High Damping, *IMAC XL*, Austin, Texas, United States, 13-16 February 2023.
- P15: Oudghiri-Idrissi, O., Lu, W., Danawe, H., and Tol S., Experimental Investigation of 3D-Printed Viscoelastic Metamaterials, *ASME International Mechanical Engineering Congress & Exposition (IMECE 2022)*, Columbus, Ohio, 30 October -3 November 2022.
- P14: Danawe, H., Li, Sun, K., and Tol S., Self-Dual Kagome Lattices and Finite-Frequency Maxwell-Like Topological Modes, *ASME International Mechanical Engineering Congress & Exposition (IMECE 2022)*, Columbus, Ohio, 30 October -3 November 2022.
- P13: Danawe, H., and Tol, S., Broadband Subwavelength Imaging via Phononic Crystal Flat Lenses, *ASME Conference on Smart Materials, Adaptive Structures and Intelligent Systems (SMASIS 2022)*, Dearborn, Michigan, United States, 12 – 14 September 2022.
- P12: Lu, W., Danawe, H., and Tol, S., Dispersion Optimization of Phononic Crystals Using Learning-based Approach, *ASME Conference on Smart Materials, Adaptive Structures and Intelligent Systems (SMASIS 2022)*, Dearborn, Michigan, United States, 12 – 14 September 2022.
- P11: Lin, Z., and Tol, S., Electroelastic Metasurface With Multi-Resonant Piezoelectric Shunts for Simultaneous Anomalous Wavefront Control Over Distinct Frequencies, *ASME Conference on Smart Materials, Adaptive Structures and Intelligent Systems (SMASIS 2022)*, Dearborn, Michigan, United States, 12 – 14 September 2022.
- P10: Danawe, H., and Tol, S., Conformal Gradient Index Phononic Crystal Lens Design for Elastic Wave Focusing in Curved Structures, *ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference (IDETC/CIE 2022)*, St. Louis, Missouri, United States, 14 – 17 August 2022.
- P9: Lin, Z., and Tol, S., Tunable elastic metasurfaces for low-frequency reflected wavefront control, *15th ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference (IDETC/CIE 2022)*, St. Louis, Missouri, United States, 14 – 17 August 2022.
- P8: Danawe, H., and Tol, S., Liquid property detection via defect-mode in phononic crystal plates, *29th SPIE Annual International Symposium on Smart Structures and Materials & Nondestructive Evaluation and Health Monitoring*, Long Beach, CA, 6-9 March 2022.
- P7: Danawe, H., Li, H., Al Ba'ba'a, H., and Tol S., Corner Modes in Elastic Twisted Kagome Lattices, *Proceedings of the ASME 2021 International Mechanical Engineering Congress & Exposition (IMECE 2021)*, Virtual, 1-5 November 2021.
- P6: Lin, Z., and Tol, S., Piezoelectric-Based Active Elastic Metasurface for Low-Frequency Flexural Wavefront Control, *14th ASME 2021 Conference on International Mechanical Engineering Congress & Exposition (IMECE 2021)*, Virtual, 1-5 November 2021.
- P5: Danawe, H., Wang, Z., Okudan, G., Ozevin, D., and Tol, S., Experimental Demonstration of the Structurally Embedded Gradient Index Lens for Guided Wave Amplification in Polymer Plates, *Proceedings of the 14th ASME 2021 Conference on Smart Materials, Adaptive Structures and Intelligent Systems (SMASIS 2021)*, Virtual, 14-15 September 2021.
- P4: Tol, S., Gradient metamaterials and metasurfaces for elastic wave guiding and focusing, *ASME 2019 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference (IDETC/CIE 2019)*, Anaheim, CA, 18-21 August 2019.
- P3: Tol, S., Elastic Metasurfaces for Focusing Flexural Lamb Waves toward Enhanced Energy Harvesting, *Phononics 2019*, Tucson, AZ, 3-7 June 2019.
- P2: Tol, S., Degertekin, F. L., and Erturk, A., Metamaterial concepts for elastic wave focusing, *16th Pan-American Congress of Applied Mechanics*, Ann Arbor, MI, 20-24 May 2019.
- P1: Tol, S., Kabir, M., and Ozevin, D., Wave Energy Focusing with Gradient-index Metamaterial Layer for Damage Detection and Localization in Pipe-like Structures, *18th U.S. National Congress for Theoretical and Applied Mechanics*, Chicago, IL, 5-9 June 2018.
- INVITED SEMINARS/TALKS T11: Tol, S., Mechanical Metamaterials: Harnessing Periodic Architectures for Sensing, Harvesting, and Space Designs, *UM College of Engineering Meeting*, Ann Arbor, MI, 14 December 2023.
- T10: Tol, S., Reconfigurable Elastic Metasurfaces for Anomalous Wavefront Shaping, *ME Departmen-*

tal Seminar at Virginia Tech, Blacksburg, VA, 16 November 2023.

- T9: Tol, S., In-Space Design Technologies Integrated with Novel Metamaterials for Future Solar Arrays, *AFRL – Space System Command’s Space Structures Capability Collaboration Team (CCT)*, Virtual, 26 September 2023.
- T8: Tol, S., Wavefront Control via Reconfigurable Elastic Metasurfaces, *Texas Acoustics Seminars at the University of Texas Austin*, Austin, TX, 15 September 2023.
- T7: Tol, S., Subwavelength Imaging of Flexural Waves Beyond the Diffraction Limit, *Phononics 2023*, Manchester, England, 15 June 2023.
- T6: Tol, S., In-Space Design Technologies Integrated with Novel Metamaterials for Future Solar Arrays, *AE585: Chairs Distinguished Seminar Series*, Ann Arbor, MI, 21 April 2023.
- T5: Tol, S., Adaptive control of the low frequency waves in electromechanical metasurfaces, *USNC/TAM 2022*, Austin, TX, 23 June 2022.
- T4: Tol, S., Electromechanical metastructures for simultaneous wave attenuation and energy harvesting, *Acoustical Society of America 182nd Meeting*, Denver, CO, 25 May 2022.
- T3: Lin, Z. and Tol, S., Elastic Metasurfaces for Full Wavefront Control and Low-Frequency Energy Harvesting, *IDETC/CIE 2021*, Virtual, 17-19 August 2021. (*Spotlight Presentation, Journal of Vibration and Acoustics*)
- T2: Tol, S., Periodic architectures for elastic wave control, *2021 Seminar Series of the Technical Committee on Vibration and Sound*, Virtual, 8 April 2021.
- T1: Tol, S., Wave guiding and manipulation via structural periodicity, *Applied Physics Program, U-M*, Ann Arbor, MI, 10 March 2021.

SELECTED  
AWARDS &  
HONORS

- Rackham Faculty Allies Diversity Grant, Rackham Graduate School, 2023-2024.
- John F. Ullrich Education Excellence Award 2022-2023, The College of Engineering at the University of Michigan.
- Elizabeth Caroline Crosby Faculty Grant 2022-2023, The ADVANCE Program at the University of Michigan.
- Honored Instructor 2022-2023, Michigan Housing.
- Outstanding Service Award as Topic Chair for the 34th Conference on Mechanical Vibration and Noise (VIB), In: IDETC/CIE 2022.
- Phononics 2019 Office of Naval Research Participation Fellowship, 2019.
- Faculty Structured Outreach Support Fellow, U-M Center of Education and Outreach, 2019.
- ASME Best Paper Award in Energy Harvesting, 2017.
- Best Student Paper Award in the Energy Harvesting Symposium, In: 9th ASME Conference on Smart Materials, Adaptive Structures and Intelligent Systems (SMASIS), 2016.

TEACHING  
EXPERIENCE

**Assistant Professor**, University of Michigan September 2018 - Present  
ME 240 Introduction to Dynamics and Vibrations  
ME 541 Mechanical Vibrations  
ME 645 Wave Propagation in Elastic Solids

**Lead Teaching Assistant**, Georgia Institute of Technology, August 2014 - July 2015  
**Teaching Assistant** January 2013 - July 2015 & August 2016 - May 2017  
ME 3057 Experimental Methodology

MENTORING

- Dr. Hrishikesh Danawe, Ph.D. Student/Postdoctoral Scholar September 2019 - present.
- Zhenkun Lin, Ph.D. Student September 2019 - present
- Dr. Hasan Al Ba’ba’a, Postdoctoral Scholar August 2020 - May 2021
- Wei-Chun Lu, Ph.D. Student September 2021 - present
- Dr. Othman Oudghiri-Idrissi, Postdoctoral Scholar April 2022 - present
- Yashasvi Shanker Sharma, Ph.D. Student August 2022 - present

STUDENT’S  
AWARDS

- Rackham Predoctoral Fellowship (Zhenkun Lin), Rackham Graduate School, 2023.
- Rackham Predoctoral Fellowship (Hrishikesh Danawe), Rackham Graduate School, 2023.
- Ivor K.McIvor Award (Zhenkun Lin), The College of Engineering at the University of Michigan, 2023.

- Best Student Paper Award, 2nd Place (Zhenkun Lin), In: 29th SPIE Annual International Symposium on Smart Structures and Materials & NDE, 2022.
- Ivor K. McIvor Award (Hrishikesh Danawe), The College of Engineering at the University of Michigan, 2022.
- Alexander Azarkhin Scholarship (Hrishikesh Danawe), Mechanical Engineering Department at the University of Michigan, 2021.
- Best Student Paper Award, 2nd Place (Hrishikesh Danawe), In: 27th SPIE Annual International Symposium on Smart Structures and Materials & NDE, 2020.

#### SERVICE

- Chair of the Conference SSN03: Active and Passive Smart Structures and Integrated Systems XVII, SPIE Smart Structures+NDE 2024.
- Associate Editor of ASME Journal of Vibration and Acoustics, September 2023-present.
- Co-chair of the Conference SSN03: Active and Passive Smart Structures and Integrated Systems XVII, SPIE Smart Structures+NDE 2023.
- Chair of the Dynamics and Waves in Structures and Metamaterials Symposium in IDETC 2023.
- Chair of the Energy Harvesting Symposium in ASME Conference on Smart Materials, Adaptive Structures and Intelligent Systems (SMASIS) 2023 and 2024.
- Co-chair of the Phononic Crystals and Metamaterials track topic in ASME IMECE 2023.
- Secretary of the Technical Committee of Vibration and Sound (TCVS), June 2023 - present.
- Chair of the ASME Energy Harvesting TC in SMASIS branch, July 2023 - present.
- Secretary of the ASME Energy Harvesting TC in SMASIS branch, July 2022 - July 2023.
- Panel reviewer, National Science Foundation.
- Faculty Ally for Diversity in Graduate Education, U-M, October 2022-present.
- Lead of the student activities in ASME IDETC/CIE VIB conference, August 2019 - 2022.
- Member of the DEI Committee, Mechanical Engineering, U-M, September 2022 - present.
- Co-chair of the Seminar Committee, Mechanical Engineering, U-M, September 2022 - present.
- Co-chair of the Junior Faculty Lunch Series, Mechanical Engineering, U-M, 2021-2022.
- K-12 Outreach: Inspire-ME module for the WISE Girls in Science and Engineering (GISE) Camp at the University of Michigan, Ann Arbor, MI, June 2019 and July 2022.
- Invited Panels/Forums:
  - Engineering Your Journey career lunch series funded by Rackham Faculty Allies Diversity Grant, Mechanical Engineering Department, Seminar Speaker, February 2024.
  - Topic Facilitator, Breakfast Event with Round-Table Discussions together with NSF program officers, IDETC 2023, Boston, MA, August 2023.
  - Speaker/Organizer, The Transition from Being a Graduate Student to Workforce, Joint Panel with GradSWE at U-M and UIC, January 2023.
  - Panelist at GradSWE Faculty-Student Fall Mixer, U-M, Ann Arbor, MI, November 2022.
  - Panelist, Grad101: Post-Ph.D. Academic Career, U-M, Ann Arbor, MI, November 2022.
  - NextProf Pathfinder Workshop, U-M, Ann Arbor, MI, September 2019.
  - Panelist at Female Faculty-Student Fall Mixer, U-M, Ann Arbor, MI, November 2018.
  - Group Forum: Successful Academic and Professional Strategies for Female Engineers, U-M, Ann Arbor, MI, October 2018.