Biography (Prof. Alper Erturk)

Dr. Alper Erturk is the Woodruff Professor of Mechanical Engineering in the G. W. Woodruff School of Mechanical Engineering at Georgia Institute of Technology, where he leads the Smart Structures & Dynamical Systems Laboratory. His theoretical and experimental research program is centered on the intersection of smart structures and dynamical systems for various interdisciplinary problems spanning from nonlinear energy harvesting and bio-inspired piezoelectric actuation to metamaterial-based vibration attenuation and wireless acoustic power transfer. Dr. Erturk began at Georgia Tech in 2011 as an Assistant Professor, he was promoted to Associate Professor with tenure in 2016 and became a full Professor in 2019. Prior to joining Georgia Tech, he worked as a Research Scientist in the Center for Intelligent Material Systems & Structures at Virginia Tech (2009-2011). He has published more than 200 articles in archival journals and conference proceedings, 4 book chapters, and 2 books. He authored a book entitled Piezoelectric Energy Harvesting (Wiley, 2011 & Chinese Edition, 2015) as a product of his dissertation and relevant research during 2007-2010 and co-edited a book on Advances in Energy Harvesting Methods (Springer, 2013). His publications have received more than **13,000 citations (h-index: 52)** according to Google Scholar. Several of his publications are in the "highly cited paper" category of Web of Science (top 1% in the fields of engineering, physics, and materials science). Dr. Erturk is a recipient of the **NSF CAREER Award** (2013) in Dynamical Systems. He received the 2015 **Gary Anderson Early Achievement Award** of the ASME Aerospace Division that is granted to a "young researcher in his/her ascendancy whose work already had an impact in his/her field within Adaptive Structures and Material Systems." In 2016, he became a recipient of the **Young Scholar Award** (junior faculty level) of TASSA (Turkish American Scientists and Scholars Association). He also received the 2017 **C.D. Mote Jr. Early Career Award** by the ASME Technical Committee on Vibration and Sound (Design Engineering Division) for "demonstrated research excellence in the field of vibration and acoustics." Dr. Erturk was elected a **Fellow of ASME** in 2017 and a **Fellow of SPIE** in 2020. Most recently, he was selected to receive the 2020 **James W. Dally Young Investigator Award** of the Society for Experimental Mechanics (SEM) for "significant contributions in education and demonstrated excellence in research in the field of experimental mechanics." Two of his journal articles were recognized with the 2015 (inaugural) and 2017 **ASME Energy Harvesting Best Paper Awards**. In terms of his accomplishments as a classroom teacher and research advisor, Dr. Erturk was a recipient of the 2016 **Class of 1940 Teaching Effectiveness Award** and multiple Thank a Teacher certificates; he was also the 2012 Class of 1969 Teaching Fellow and the 2018 Hesburgh Award Teaching Fellow. Several of his graduate students (S. Zhao, S. Shahab, S. Leadenham, C. Sugino, S. Tol, D. Tan, Y. Xia – separately) received **Best Paper Awards in ASME IDETC and ASME SMASIS** conferences in the last decade. Two of his students (S. Zhao and E. Skow) received the **Sigma Xi Best MS Thesis and PhD Dissertation Awards.** Dr. Erturk's group has made theoretical and experimental contributions in the fields of vibration energy harvesting, bio-inspired underwater locomotion using flexible piezoelectric composites, phononic crystal-based wave tailoring and enhanced structure-borne wave energy harvesting, low-frequency vibration attenuation using locally resonant metamaterials, modeling and identification of nonlinear non-conservative dynamics of piezoelectric structures, exploiting intentionally designed nonlinearities for frequency bandwidth enhancement, leveraging size effects and strain gradient-induced polarization in elastic dielectrics, and wireless acoustic power transfer. His share of externally sponsored research at Georgia Tech is around $3M, out of a **total project budget of $6M**. Dr. Erturk is an Associate Editor for Smart Materials & Structures (IOP), Journal of Intelligent Material Systems & Structures (SAGE), Journal of Vibration &

Acoustics (ASME), and Journal of Energy Engineering (ASCE). He received his BS (high honors) and MS degrees in Mechanical Engineering from METU (Ankara, Turkey) in 2004 and 2006, respectively, and PhD degree in Engineering Mechanics from Virginia Tech in 2009. Dr. Erturk's MS thesis on the use of structural coupling and modification techniques for chatter prediction in spindle-tool systems received the **Thesis of the Year Award** of the METU Parlar Foundation in 2006. In 2008, he became the inaugural recipient of the **Liviu Librescu Memorial Scholarship** at Virginia Tech for "having the potential for scholarly achievement in teaching and research, and a demonstrated dedication to the welfare and well-being of others." Dr. Erturk was an **Elected Member** of the ASME Technical Committee on Vibration and Sound under the Design Engineering Division (2011-2014, 2014-2017), and is an **Elected Member** of the ASME Adaptive Structures and Material Systems Branch under the Aerospace Division (2011-present). He was also the **Founding Chair** (2012-2014) of the ASME Energy Harvesting Technical Committee. He served on the organization, program, or technical committees of various ASME conferences (SMASIS, IDETC), SPIE Smart Structures/NDE, and more recently, PowerMEMS and IEEE Sensors conferences. He established the Energy Harvesting Symposium of ASME SMASIS in 2012. He was the 2018-2019 SPIE Smart Structures/NDE Active and Passive Smart Structures and Integrated Systems **Conference Chair** and the 2018 ASME IDETC Mechanical Vibration and Noise **Conference Chair**.