



**Exponent®**  
Engineering & Scientific Consulting

**Bahadir Sarikaya, Ph.D.**

Associate | Vehicle Engineering

Natick

+1-508-652-8583 tel | bsarikaya@exponent.com

## Professional Profile

Dr. Sarikaya's areas of expertise include dynamics, vibration, acoustics and control of vehicle systems and rotating machinery. He has project experience in the analytical, computational and experimental analysis of conventional and electric vehicles with automotive companies as a part of his educational and professional background. His competencies in Computer-Aided Design (CAD), Finite Element Analysis (FEA), signal processing, vehicle dynamics and diagnostics strengthen his consulting capabilities.

Prior to joining Exponent, he was a research assistant at the University of Massachusetts Lowell's Structural Dynamics and Acoustics System Lab. During his studies, he worked on projects related to noise and vibration mitigation in transmissions for conventional and electric vehicles. He built dynamic models and conducted analytical, computational and experimental analyses to explore the impact of imperfections on the performance of various noise and vibration absorption mechanisms. His Ph.D. dissertation at the University of Massachusetts Lowell is titled, "The Impact of Manufacturing Imperfections on the Dynamic Response Characteristics of Centrifugal Pendulum Vibration Absorber (CPVA)". Dr. Sarikaya's dissertation work proposed new tuning strategies and diagnostic tools in the presence of imperfections for CPVAs using analytical and computational techniques.

Before his Ph.D. studies, he worked as a mechanical design engineer for two years at ASELSAN Inc, Ankara, Turkey. In that capacity, he was involved in all phases of the product development lifecycle, including design, documentation, prototyping, testing and quality control for electric bus and hybrid truck projects.

## Academic Credentials & Professional Honors

Ph.D., Mechanical Engineering, University of Massachusetts, Lowell, 2023

B.S., Mechanical Engineering, Bilkent University, Turkey, 2015

Young Professional Award at the Inter-Noise Conference 2021

American Gear Manufacturer Association Scholarship, 2018 & 2019

## Prior Experience

Research and Teaching Assistant (Structural Dynamics and Acoustics System Laboratory), Mechanical Engineering Department, University of Massachusetts Lowell, 2017-2022

Mechanical Design Engineer, Transportation and Energy Systems Division, ASELSAN Inc, Ankara, Turkey, 2015-2017

Mechanical Engineering Intern, Factory Development Department, Renault Group (OYAK-Renault), Bursa, Turkey, 2014

Mechanical Engineering Intern, Headlamp Assembly Department, Magnetti Marelli-MAKO, Bursa, Turkey, 2013

## Languages

Turkish

## Publications

Sarikaya, B. and Inalpolat, M., Response Sensitivity of Centrifugal Pendulum Vibration Absorbers to Symmetry-Breaking Absorber Imperfections. Journal of Sound and Vibration, 2022, p.117037.

Sarikaya, B., Ozdemir, E.T., Inalpolat, M., Lee, H.K. and Kim, M.S., An analytical model for predicting noise radiated by switch reluctance electric motors. INTER-NOISE and NOISE-CON Congress and Conference Proceedings. 2021;(263): 4100-4110.

Ozdemir, E.T., Sarikaya, B., Inalpolat, M., Lee, H.K. and Kim, M.S., A multibody dynamic model for predicting operational load spectra of dual clutch transmissions. INTER-NOISE and NOISE-CON Congress and Conference Proceedings 2021; (263): 4132-4143).

Sarikaya, B., Inalpolat, M., Lee, H.K. and Kim, M.S., An Analytical Investigation of the Impact of Design Parameters on the Performance of Centrifugal Pendulum Vibration Absorbers. ASME International Design Engineering Technical Conferences and Computers and Information in Engineering Conference Proceedings 2019; (59308): V010T11A022.

## Presentations

Sarikaya, B., Burnham, B., and Inalpolat, M., "A Computational Investigation into Vibration Absorption Performance of Centrifugal Pendulum Absorbers with Different Absorber Configurations," International Modal Analysis Conference (IMAC XXXIX), February 2021.

## Additional Education & Training

Simpack Fundamentals and Railroad Applications, Ankara, Turkey, April, 2016

Geometrical Dimensioning and Tolerancing, Ankara, Turkey, January, 2016

Siemens NX - Fundamental CAD, Assembly, Drafting and Advanced CAD, Ankara, Turkey, 2015

Introduction to Ansys Workbench, Ankara, Turkey, June, 2015