

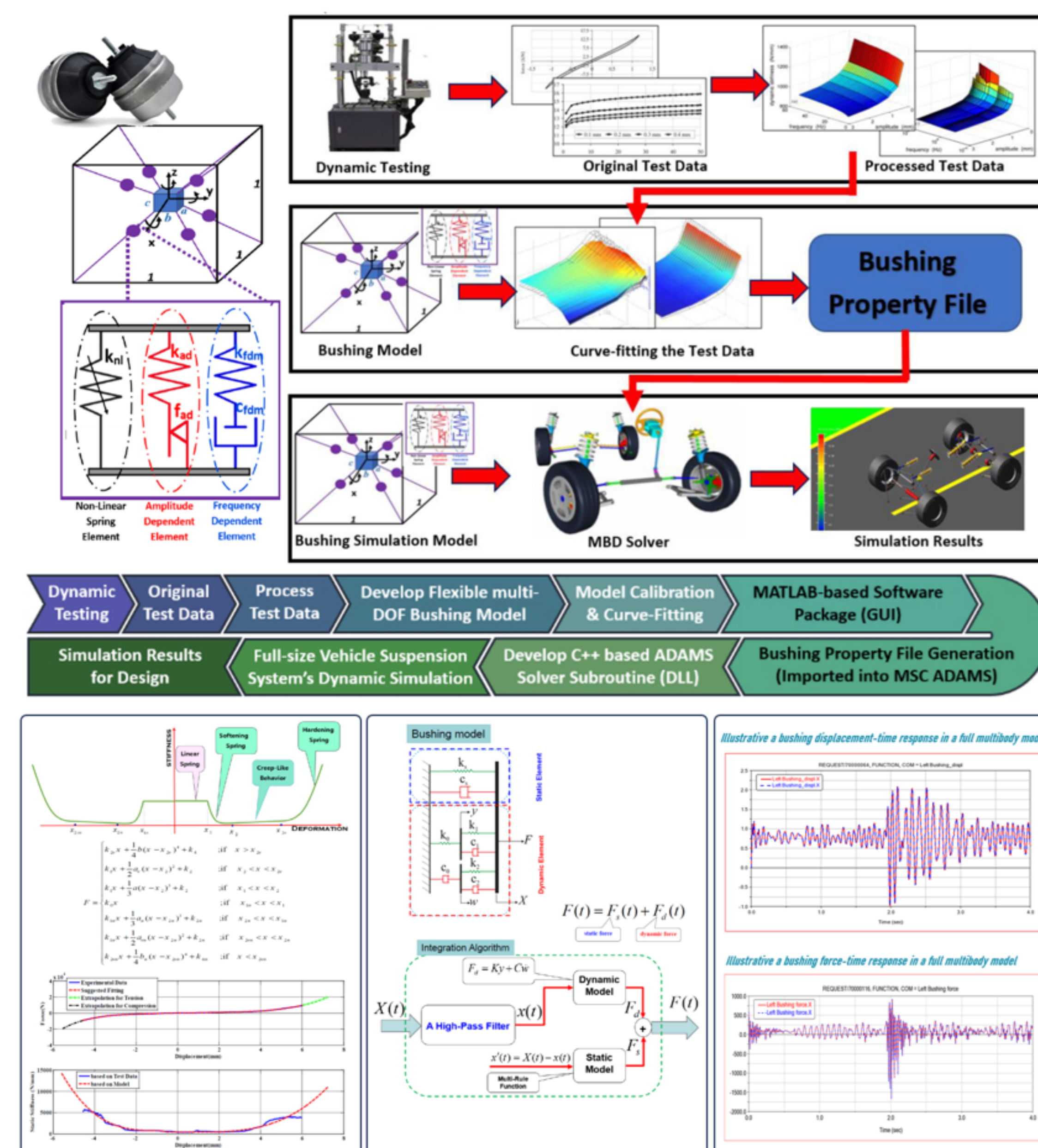
Structural Dynamics–based Fault Diagnosis

Rasoul Atashipour

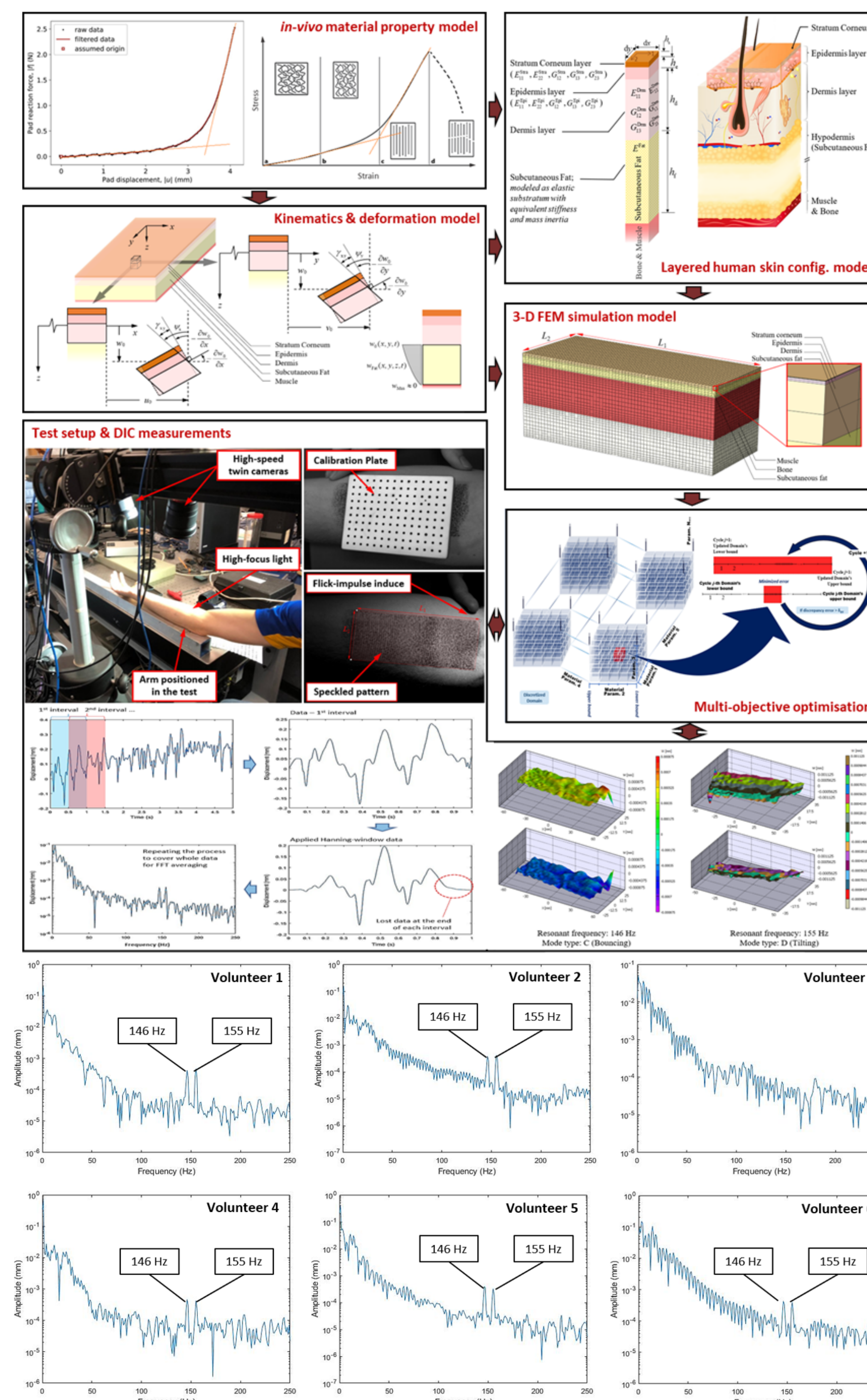
Overview

Rasoul Atashipour is a Researcher in Vehicular Systems at Linköping University, with an extensive background in efficient hybrid model-based and data-driven analysis methods in Structural Dynamics and Mechanics. The focus of research is on developing advanced Vibration-and-Acoustic-based methods for fault diagnosis of mechanical failures through signal processing and condition monitoring of their Structural Dynamic behaviour.

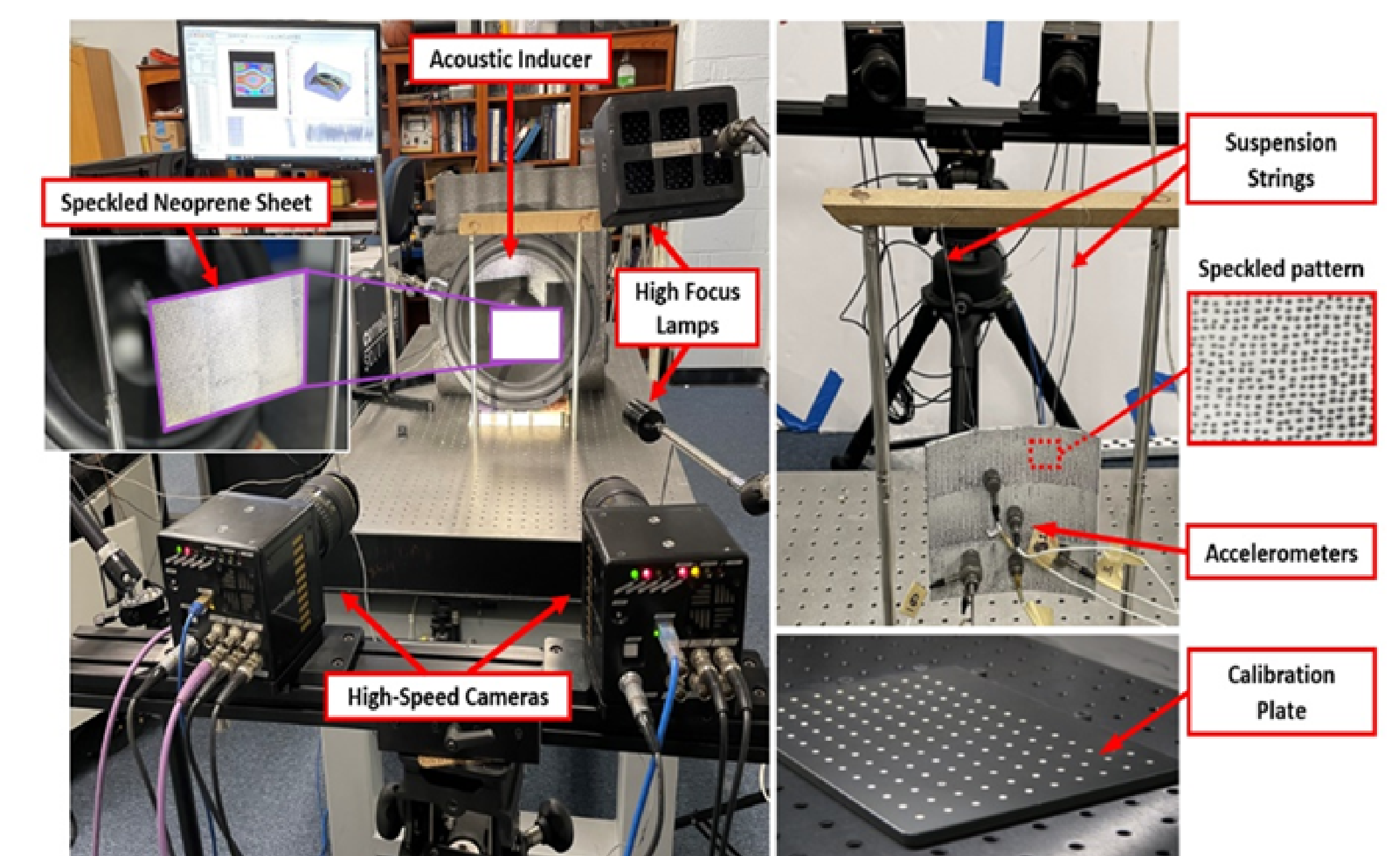
Model-based diagnosis approach development: Nonlinear Modeling of Elastomers for MBD Simulation



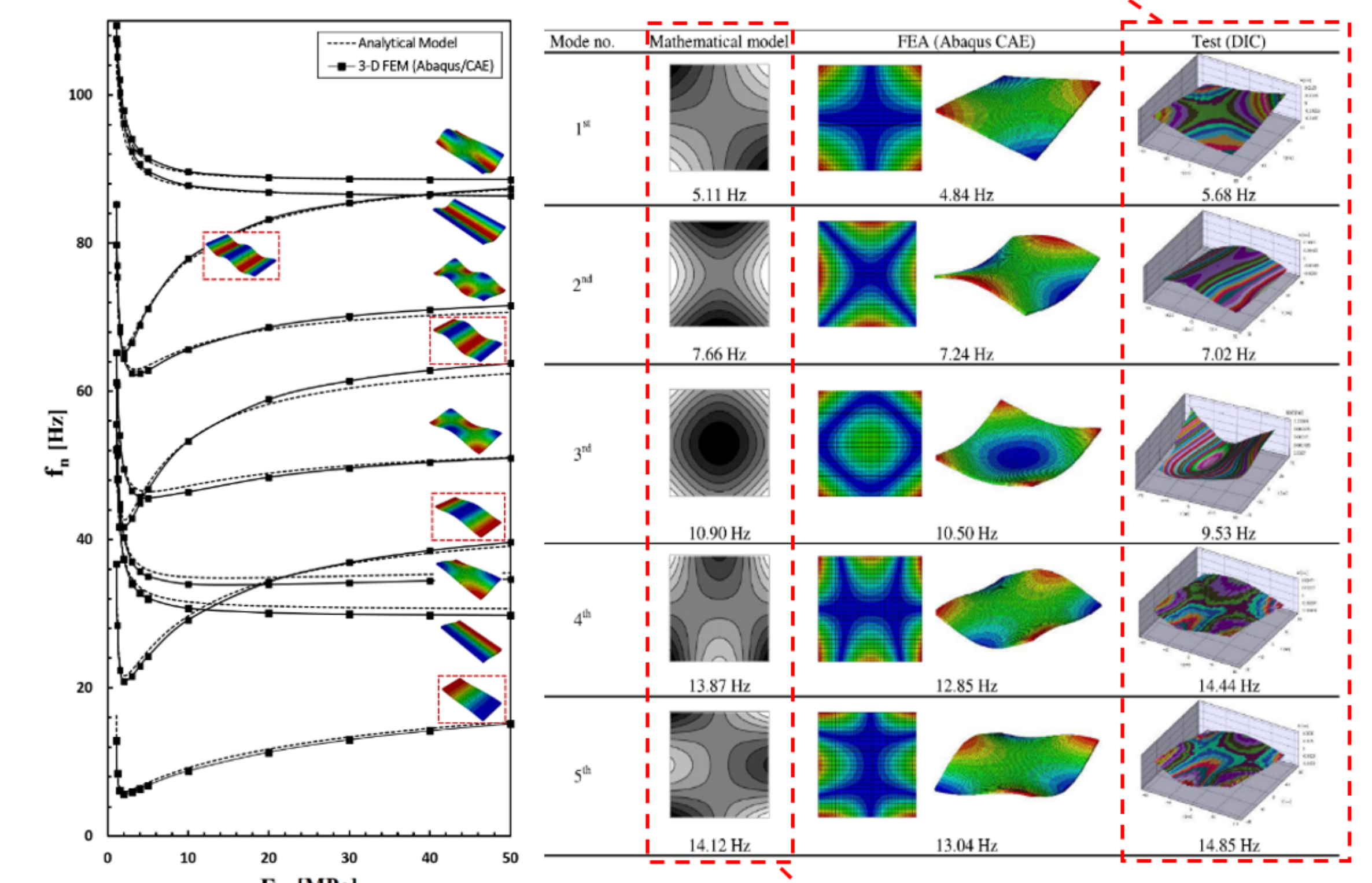
Dynamic analysis model for human skin toward a noninvasive diagnosis approach for soft-tissue: Directional-dependent in-vivo elastic property identifica- tion based on dynamic response to an external excitation



A optical characterization approach using vibra- tion and acoustic signals- frequency response: Integrated 3-D DIC and LDV measurements with numer- ical methods towards an innovative abnormality detection



High-speed cameras with 3-D DIC tool can accurately detect-and-collect the resonant frequencies and mode-shapes of Neoprene soft sheets, externally excited via acoustic waves!



Variations of the Resonant Frequencies & Mode-Shapes vs Material property parameters provide a unique source of info!

Excellent agreement between the developer efficient Mathematical Model and the data collected by DIC as well as the FEA

Looking forward to our collaborations!