

AES APEI Webinar for Transducer Development

The poster features a dark blue background with a large, colorful, 3D mesh model of a speaker driver in the center. In the top left corner is the Audio Product Education Institute (APEI) logo, which consists of five vertical bars of increasing height and a shield with the letters 'A' and 'ES'. The main title is in white text: 'Modeling and Measurement Webinar', 'Electroacoustic Simulation', and 'in COMSOL Multiphysics 6.0'. Below the title is the subtitle 'Getting to The Next Level in Transducer Development'. On the right side, the event details are listed: 'Online Event - March 2' and '9:am PST / 12:pm EST'. At the bottom, there are three circular headshots of the speakers: Mads Herring Jensen (COMSOL), Tim Whitwell (Tectonic Audio Labs), and Roger Shively (JJR Acoustics). The bottom right corner features the text 'Sponsored by' followed by the COMSOL logo.

Audio Product Education Institute

Modeling and Measurement Webinar
Electroacoustic Simulation
in COMSOL Multiphysics 6.0
Getting to The Next Level in
Transducer Development

Online Event - March 2
9:am PST / 12:pm EST

Mads Herring Jensen
COMSOL

Tim Whitwell
Tectonic Audio Labs

Roger Shively
JJR Acoustics

Sponsored by COMSOL

The AES Audio Product Education Institute (APEI) is promoting a new Modeling and Measurement webinar focused on the latest advancements in loudspeaker design. The session, presented by Mads Herring Jensen, Technology Manager, Acoustics, at COMSOL, will explore the latest updates in COMSOL Multiphysics 6.0 software, and specifically the significant improvements to transducer development introduced to its Acoustics Module.

Launched December 15, 2021, COMSOL 6.0 introduced a simplified workflow for setting up hybrid lumped-FEM models of loudspeakers, a user interface for the simulation of magneto-mechanical forces in transducers, and much more. Focusing on electroacoustic transducer applications, this webinar will be a unique opportunity for an audio-centric audience to learn about the new features, several of which are the direct result of feedback collected from users within the audio industry.

With the audio industry increasingly initiating new product development efforts with simulation-driven designs, and progressing gradually to Digital Twins, it becomes important to understand all the vast possibilities these tools can offer. Using

modeling and simulation systematically through the design and optimization stages of an acoustic device is proving to enable significant performance breakthroughs – not only by removing variables, but by identifying key undesired properties and effects, while enabling practical solutions that can be prototyped, verified and implemented.

The Acoustics Module in COMSOL Multiphysics 6 introduces many highly requested features that reflect the software's increasing use in the audio industry. The session will provide an overview of those important areas of improvement, such as the possibility to model piezoelectric phenomena in the time domain for wave propagation using a time-explicit formulation, physics-controlled mesh for pressure acoustics problems, or new high-frequency wave methods. Speaker designers in particular can benefit from a new Lumped Loudspeaker boundary condition and sector symmetry options in the exterior field.

This event will benefit from the participation of Roger Shively (JJR Acoustics, LLC), highly experienced in the areas of transducers, automotive audio, psychoacoustics, and computer modeling, and Tim Whitwell (Tectonic Audio Labs), who currently leads cutting-edge efforts in transducer development using COMSOL. Roger will share his experience and ask questions, while Tim will discuss his work with the new software, as well as his familiarity modeling external pressure fields using the new cyclic symmetry feature. The session will be open for questions following presentations.

The Audio Product Education Institute's Modeling and Measurement education pillar is sponsored by COMSOL and underscores the AES's commitment to providing its membership and the industry at large with information on real-world solutions for audio product development.

Webinar registration through [this link](#).

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