Polytec Siemens
Structures Seminar

FE model correlation, acoustics, durability testing
Current trends and latest advancements

Would you like to learn how to acquire accurate structural dynamics test data for FE Model Correlation? Would you like to learn about the latest technology for non-contact vibration measurement and finite element modeling? If so, then you will be interested in our seminar. We invite you to join us for an informative and educational day covering the basics of structural dynamics testing, modal analysis, FE modeling, durability testing and acoustic sound field simulation.

Polytec and Siemens present a joint tech seminar for dynamic test and FE model correlation using their latest technology. Polytec is the leader in non-contact vibration measurements for structural dynamic testing and analysis. Siemens is a worldwide leader with advanced engineering tools for FE modeling.

The seminar presentations will be supplemented with hands-on interaction with the attendees. There will be three demo stations situated throughout the seminar room, so attendees can break out into smaller groups to focus on a particular interest, allowing more interaction with the experts:

Modal Test Structure – Golf Clubs
- Using a scanning laser Doppler vibrometer (LDV), we will show how this can be used for data acquisition on a 3D structure (golf club). The data will be transferred into Testlab for modal analysis, the results of which will be fed into Siemens Simcenter 3D for FE correlation and acoustic radiation predictions.

Single-point Laser with Turbine Blade
- A single point laser will be used to measure shock and vibration responses on a turbine blade. The applications shown will vary from closed-loop vibration control, transient capture, and resonance search and dwell. The turbine blade will be mounted on a shaker and fixture.

Shake Test Printed Circuit Board (PCB)
- Live demo of VibroGo sensor for environmental vibration test on a printed circuit board. Includes results for modal analysis using Siemens TestLab.

The seminar is free of charge. Lunch will be provided.
View full **Agenda** on the next page.
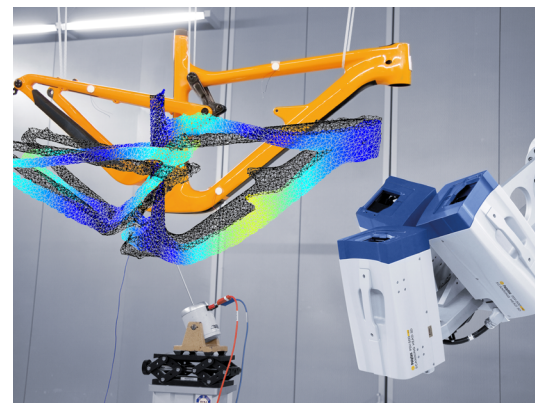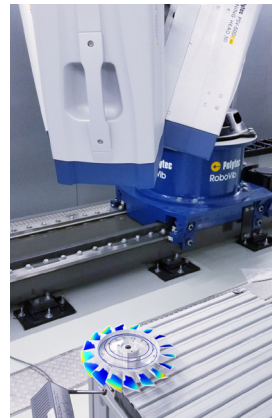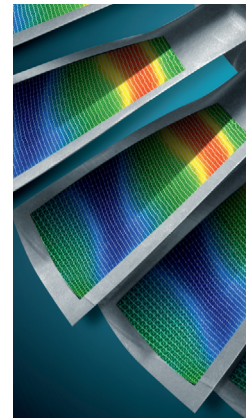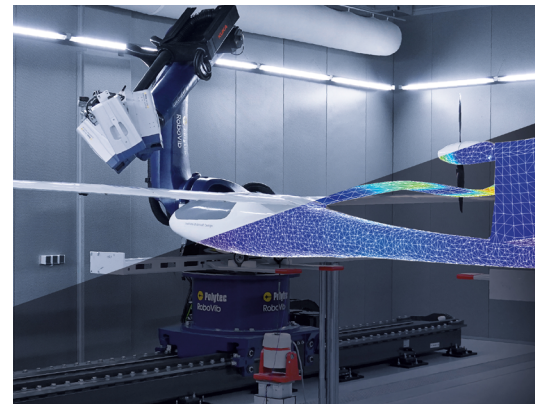
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Location

Siemens Digital Industries Software
535 Anton Blvd, Ste 1100
Costa Mesa, CA 92626

Agenda

- **9:30 AM Welcome and Coffee**

- **10:00 AM Introduction**
  - Seminar Introduction

- **10:05 AM Structural Dynamics Testing (Polytec)**
  - Structural Dynamics Fundamentals
  - Digital Signal Processing Fundamentals
  - Shaker Excitation Techniques
  - Impact Excitation with Scalable Automated Modal Hammer (SAM)
  - Introduction LDV Non-contact Vibration Measurements
  - New Polytec QTEC PSV-3D for 3D Modal Testing

- **11:00 AM Modal Analysis and FEA Model Simulation (Siemens)**
  - Modal Analysis Overview
  - Modal Analysis - Demonstration
  - Correlation Process Overview
  - Pretest Analysis in Simcenter 3D – Demonstration

- *12:00 PM - Lunch Served in Siemens Lobby*

- **1:00 PM Environmental Vibration Test of PCB Using a VibroGo**
  - Tim Marinone, ATA Engineering

- **1:30 PM Case Study Dynamic Test, Model Validation and Acoustic Simulation Golf Club**
  - Correlation Process Overview
  - Background Golf Club Measurement
  - 3D Scanning Vibrometer Measurements of Dynamic Response
  - Modal Analysis
  - SimCenter FE Modeling
  - Model Validation using Scanning Vibrometer Data
  - Acoustic Simulation of Golf Club Response

- **2:00 PM Fatigue Testing of Turbine Blades (ATA Engineering)**
  - Background Fatigue Testing
  - Scanning Vibrometer Measurements of Turbine Blade Dynamic Response
  - Durability test using Testlab NEO with Process Builder
  - New Strain Test System Polytec (using Multi Point System)

- **3:00 PM Hands-on Demonstrations:**
  - Impact Test Golf Club Using PSV-3D
  - Resonance/Strain Test Turbine Blade LDV

- **4:00 PM End of Seminar**

Presenters

William Flynn
*Senior Application Engineer,
Siemens Digital Industries Software*

Eric Lawrence
*West Coast Manager,
Polytec, Inc.*

Rob Warmbold
*Technical Sales Engineer,
Polytec, Inc.*

Ramana Kappagantu
*Senior Technical Specialist,
Siemens Digital Industries Software*