10th Annual 2017 Project Review & IAB Meeting
NSF IUCRC Smart Vehicle Concepts Center
PRESENTS:

SHORT COURSE: Laser Doppler Vibrometry Use and Theory as it Relates to Aerospace, Automotive and Related Testing Applications

David Oliver
VP of Business Development, CTO
Polytec, Inc.

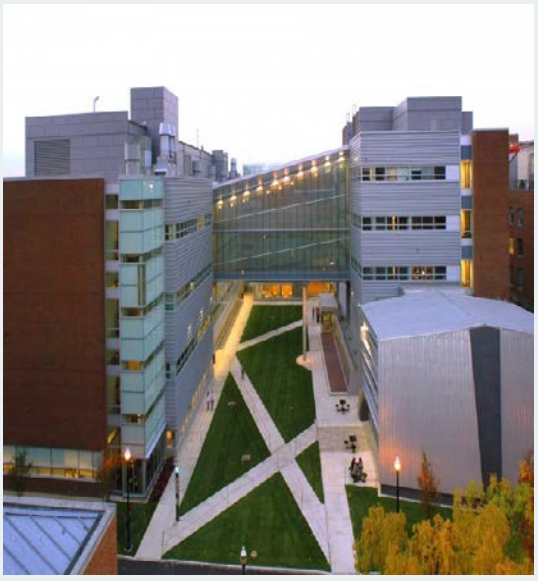
David Oliver graduated with honors from the University of Leicester, England in 1977 in Physics and has over 32 years of experience in Laser Doppler Vibrometry. He is credited with introducing scanning laser vibrometers into commercialization in the 1980s and is currently the Chief Technical Officer and VP of Business Development at Polytec, Inc.

Abstract

Laser Doppler Vibrometry (LDV) is widely used in aerospace, automotive and other related industries for non-contact vibration research. LDV technology is continuing to revolutionize the measurement of structural vibration and shock in macro and micro-structures. This tutorial is tailored to engineers and technicians looking to obtain a general understanding of Laser Doppler Vibrometry theory and application as it relates to aerospace and automotive R&D and production testing. Example measurements data will be presented that exemplify use of this technology for testing different devices and sub-assemblies including brakes, tires, and panels in wind tunnels. Examples from Scanning Vibrometry and the new Multipoint Vibrometry system will demonstrate full-field measurement and operational deflection shapes of both 1D and 3D surface vibrations including single-event and non-stationary phenomena.

Topics Include:
Concept and theory of Laser Doppler Vibrometry (LDV)
Introducing the new Multipoint Vibrometer
Technical advantages and limitations
Productivity benefits
Product types – including: single point, scanning and specialty vibrometers
Examples of where LDV offers technical and economic benefits in: modal analysis, FEM validation, dynamics characterization, smart structures research, structural health monitoring, production quality testing, strain measurement and more.

Thursday, Nov. 2
9:00am – 11:00am
E100 Scott Laboratory



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