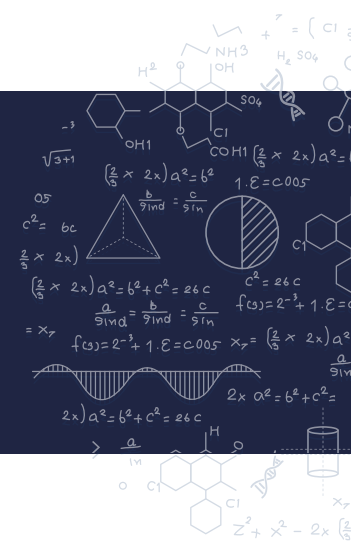


# LICENSING OPPORTUNITY: CALIBRATION APPARATUS AND CALIBRATING A LASER DOPPLER VIBROMETER



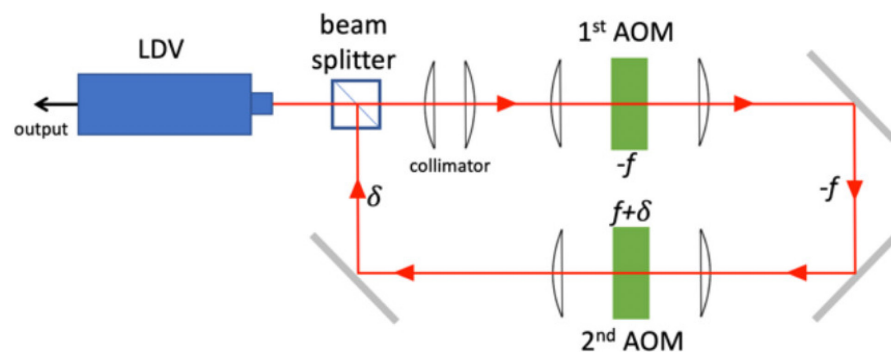
## DESCRIPTION

### Problem

There is not a direct primary method to calibrate commercial Laser Doppler Vibrometers (LDV)s as described in our invention.

### Invention

A new approach to characterize the performance of a laser Doppler vibrometer (LDV). The method uses two acousto-optic modulators to frequency shift the light from an LDV by a known quantity to create a synthetic velocity shift that is traceable to a frequency reference. Results are presented for discrete velocity shifts and for sinusoidal velocity shifts that would be equivalent to what would be observed in an ideal accelerometer vibration calibration. The method also enables the user to sweep the synthetic vibration excitation frequency to characterize the bandwidth of an LDV together with its associated electronics.



Acousto-Optic Modulator (AOM) based Laser Doppler Vibrometer characterization system.

## BENEFITS

### Commercial Application

The apparatus and method provides a more accurate and comprehensive method of calibrating LDVs.

### Competitive Advantage

Primary calibration laboratories currently can only calibrate commercially manufactured LDVs by comparison to laser heterodyne interferometers following ISO 16063-41. Our method allows the primary calibration of an LDV traceable through a time / frequency reference.