

sensor & calibration tips



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Greetings,

Welcome to issue #25-

Welcome back! Hopefully you are recharged from a nice summer vacation and gearing up for the Fall. Speaking of gearing up... people have started buying cars again and the economy is showing signs of moving out of idle. We see our business activity picking up and expect that you may be seeing it too. With all the cuts over the last year, signs also point to this year's mantra "being able to do more with less." To that end, each month we'll strive to help you learn more and become more efficient with your dynamic sensors and calibration.

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Tip of the Month

Air bearing shakers dramatically improve the quality of the calibration mechanical input and the uncertainties of corresponding results compared to traditional flexure-based shakers. By minimizing or eliminating transverse motion due to lateral resonances, the air bearing design provides increased stiffness properties compared to mechanical flexures. The increased stiffness effectively shifts lateral resonances to much higher frequencies and out of the calibration response range.

Smart Wind Turbine Blades



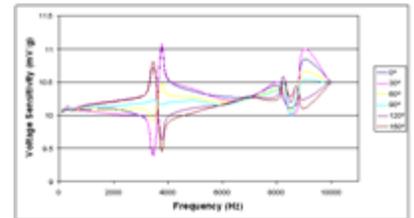
With the enormous infrastructure investment in renewable energy sources and wind power, it's clear that performance monitoring and health/maintenance will be "behemoth" areas of importance. Researchers at the [Purdue Center for Systems Integrity](#) have been working on a performance, health and prognostics system that imbeds a small array of rugged, high fidelity, piezoelectric dynamic ICP accelerometers and capacitive DC accelerometers within the turbine blades for continuous monitoring. Click on the link below for an article, published in the July 2009 issue of *Power Magazine*, on the development and benefits of smart wind turbine blades.

[Click to read more about vibration & smart wind turbine blades](http://www.powermag.com/issues/departments/global_monitor/)

[http://www.powermag.com/issues/departments/global_monitor/"Smart-Turbine-Blades"-to-Improve-Wind-Power_2014.html](http://www.powermag.com/issues/departments/global_monitor/)

Is my calibration shaker still good enough?

After years of "wear and tear" on your calibration shaker does it still meet the [ISO16063-21](#) transverse performance recommendations? Most flexure based calibration exciters have resonances so that at certain frequencies your sensor under test is moving more in the lateral direction than it is in the primary axis of sensitivity. You may be surprised by what you don't know and how it may not be properly accounted for in your [measurement system uncertainty budget](#). In some cases the ignored cross-axis motion can more than double the true uncertainty budget... Click on the link below to learn the effects of high transverse inputs on accelerometer calibration.



[Click to learn more about high transverse inputs](http://www.modalshop.com/filelibrary/The%20Effect%20of%20High%20Transverse%20Inputs%20on%20Accel%20Calib.pdf)

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Quick Links

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[IMEKO - Portugal \(September 7-11\)](#)

We hope that you've enjoyed our newsletter and its educational content over the last few years. No where like the calibration field is certainty and reliability more important. We've been around for 20 years. We're part of the PCB Group which is going on 45 years. We're here to serve you with all your dynamic sensor and calibration needs... whenever you need help!

[Quality Expo - Rosemont, IL
\(September 22-24\)](#)

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Sincerely,



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