

# Press Release

Date: April 2012  
Enclosure: pic.  
Reference: PR-0030-CPE-170412-ROBO

## **How Does That Sound? Electric and Hybrid Vehicles - New Challenges for Metrology and Acoustic Optimization**

The brave new world of electric vehicles promises 'silent' driving. However the acoustics engineer is well aware that because there is no internal combustion engine to mask out noise, other sources of noise will reveal themselves. New sources, such as switching noises from the inverter and high-frequency harmonics of the E-motor are now audible. There are also new challenges in the form of the fatigue strength of the power electronics with its components and bond connections, in addition to the dynamics of the heavy energy storage system as a whole and in the interplay of its subcomponents, the batteries and electrical connections.

To meet these new challenges, the non-contact scanning laser vibrometer lends itself as an optimization tool for acoustic engineers and structural dynamicists alike. The vibration behavior of high voltage-carrying electronic parts can only be reliably detected using these high spatial resolution optical methods. In vehicle acoustics, area scanning systems have already proven their value, both in the optimization of ancillary units (vibration stimulators) as well as in the development of insulating materials and in the understanding of coupling mechanisms (vibration transmission). The precise quantitative determination of structure-borne noise distribution and the transmission functions permits precise updating of finite element models, thus ensuring an acceleration of the electric vehicle design process so that they come as close as possible to the description 'silent'.

More info: [www.polytec.com/automotive](http://www.polytec.com/automotive)

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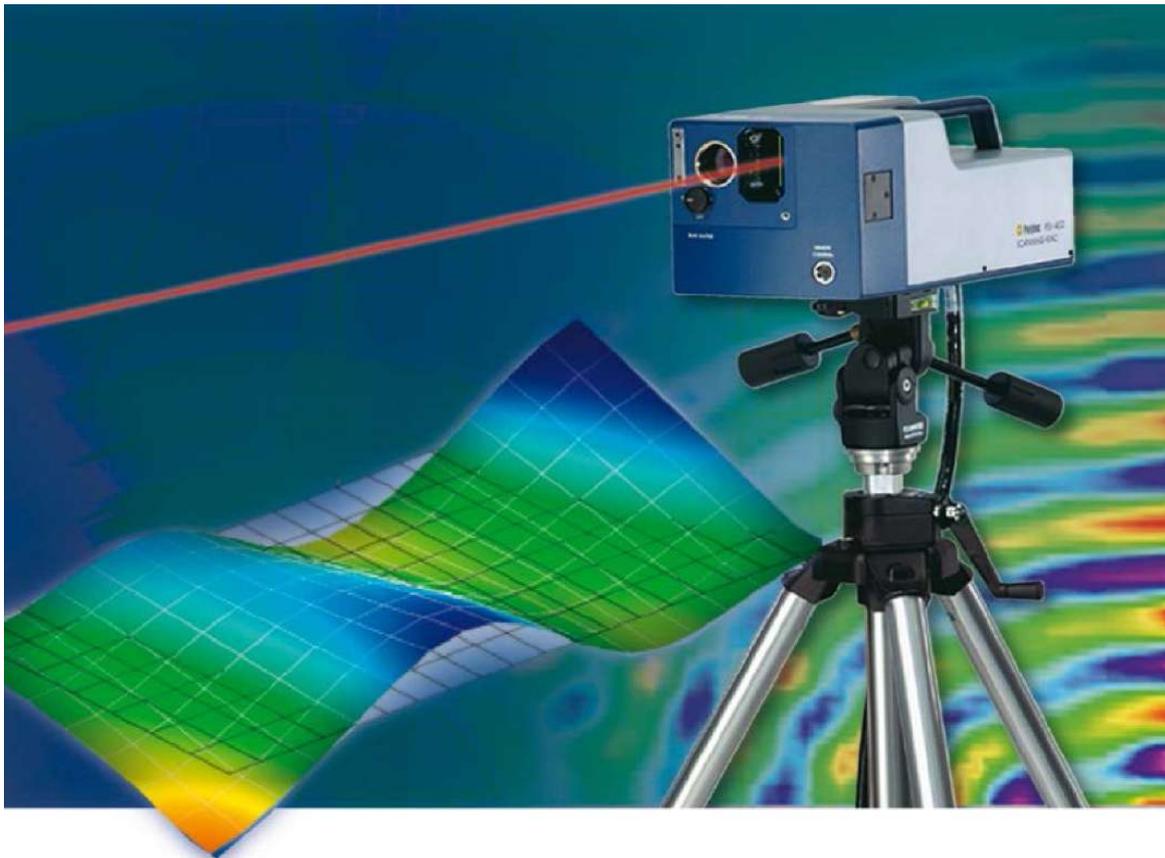
For questions please  
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