CRITT M2A

Newsletter nr.24
June 2017

Dans ce numéro :

Particle measurement in the Engine Department

To accompany its customers in the development of combustion engines complying with future emission standards, CRITT M2A continues to enlarge its exhaust gas analysis offer.

It has been equipped with AVL's MSSplus (Micro Soot Sensor). This equipment allows the continuous measurement of particle flow to very low levels.

With this service, complete instrumentation can be offered for the post-treatment system with sampling points, temperature probes, pressure sensors and oxygen probes.

Dielectric oil bath arrival at the electrical test center

In winter, when temperatures are negative, motorists observe a significant reduction in the autonomy of their electric vehicle. This autonomy is mainly dependent on the behavior of the battery which operates with electrochemical reactions, themselves depend on ambient temperature.

Temperature therefore appears to have a significant impact on battery behavior. That is why CRITT M2A has recently decided to invest in a temperature-controlled dielectric oil bath system in order to better study the influence of temperature on battery cells.

The advantage of this oil bath system is that it can maintain a quasi-constant cell temperature during an electrical test in contrast with test involving a climatic chamber where self-heating of the cell by several degrees can be observed. This system allows regulating cell temperature from -20 °C to more than 200 °C.

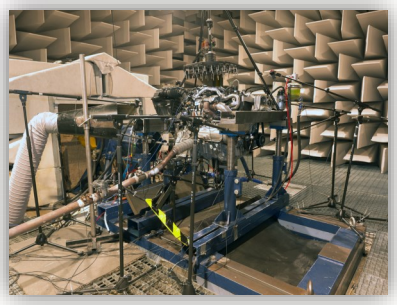
A new calibration table at the CRITT M2A's metrology laboratory

CRITT M2A is investing in a new flowmeter calibration mean that offers services covering a larger flow range whilst increasing measurement accuracy.

Thanks to the quality of the equipment used, flow conditions will go beyond normative requirements.

Thus, CRITT M2A will be one of the few French laboratories to be able to perform tests over a wide range of flows with such a level of precision.

Acoustic improvements for the Engine Bench



A study has been carried out at CRITTM2A to quantify and improve acoustic performance of an internal combustion engine (vibration behavior, acoustic radiation, subjective qualification). The teams of CRITTM2A Acoustic/ Vibration and Engine departments together with their partners have implemented means, sensor instrumentations, as well as specific analytical methods and tools needed to carry out this study.

This test campaign, allowed the identification of the different optimization axes of the engine acoustic performance: in terms of engine setting and control but also mechanical modifications related to the engine components involved in the acoustic radiation of the whole powertrain".

CIFRE NVH+TURBO Thesis

To go even further into the possibilities of using its means and associated methodologies, CRITTM2A continues the studies related to the acoustic sources generated by the turbocharger in the air loop by extending the domain of frequency analysis. With this study, CRITT M2A can offer a "broadband" acoustic characterization method of the turbocharger and its peripheral equipment (pipes, hoses, mufflers, ...).

This project is the follow-up of an ongoing CIFRE thesis which has enabled the development of test and analysis skills on turbocharger noise in ducts, thanks to an operational and innovative method based on the beamforming principle used in acoustic imaging.

In due course, the extension of this method will enable the quantification and analysis of the whole audible frequency components generated by the turbocharger (synchronous whistling, blowing noise, blades passing frequency, etc.), as well as its repercussions on its related components.

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Find us on the web!
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CRITT M2A is hiring

With close to 6 million € turnover in 2016, the CRITT M2A continues its growth and is recruiting new employees.

CRITT M2A is currently hiring a metrologist technician, an electrical technician, a trilingual sales assistant (English/German) and two PhD students who want to prepare a thesis on energy storage and the study of the performance of a turbocharger.

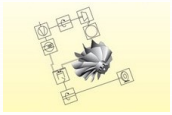
CRITT M2A's Birthday

CRITT M2A will celebrate its 10th anniversary as an independent Research ant test center on June 13rd 2017, at CRITT M2A

Lunch and animations will be on this event's program

AGENDA

- **On June 13rd 2017**, CRITT M2A will celebrate its 10th anniversary.
- **From June 20th to 22th 2017,** CRITT M2A will attend the Automotive Testing Expo Europe show, stand nr. 1945, in Stuttgart.
- **On September 28th and 29th 2017**, CRITT M2A will attend the Supercharging Conference, in Dresden.



16-17 oct 2017 SAVE THE DATE

----- the SYTEC will take place on October 16th and 17th 2017 -----

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