CRITTM2A

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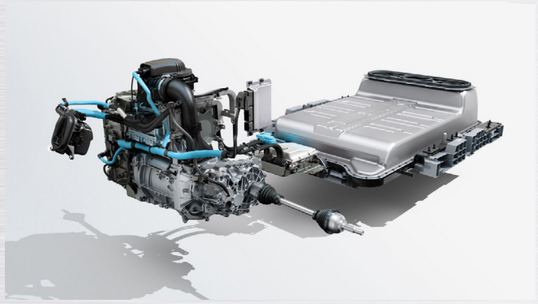
Start of the OECTE project!



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FRANCE RELANCE

The electric and hybrid vehicle market is booming and **CRITT M2A** continues to be a major player in this energy transition.

Fully committed to new developments in the electric and hybrid powertrain, **CRITT M2A** is ready to meet challenges such as optimizing battery life, improving thermal management and the driveline. ...

In partnership with **Université d'Artois**, **Gamma Technologies**, **Ecole centrale de Nantes** and **OPAL-RT TECHNOLOGIES**, CRITT M2A will develop the OECTE project for two years.

The objective of this project is to develop test and validation methodologies to optimize energy management and powertrain design at an early stage.

This methodology will increase reliability, reduce costs and development times and predict the risk of e-motor, converter and battery failure.

To achieve this, a very innovative inverter test bench, temperature and humidity regulated will be operated by the end of 2021. It will allow test with powers up to 32 kW.

CRITT M2A is accredited by COFRAC

Quality has always been one of CRITT M2A's concerns. For more than 15 years, CRITT M2A has been committed to a continuous progress and a quality process aimed at guaranteeing its customers a service that meets their requirements.

CRITT M2A has just obtained ISO / IEC 17025: 2017 accreditation in accordance with **COFRAC** application rules. This accreditation is available on www.cofrac.fr under number 1-6817 for testing activities.

It demonstrates the skills of the center and guarantees the reliability of its results, in strict compliance with standards.

R&D : Experimental study and numerical modeling of a pulsed turbococharger

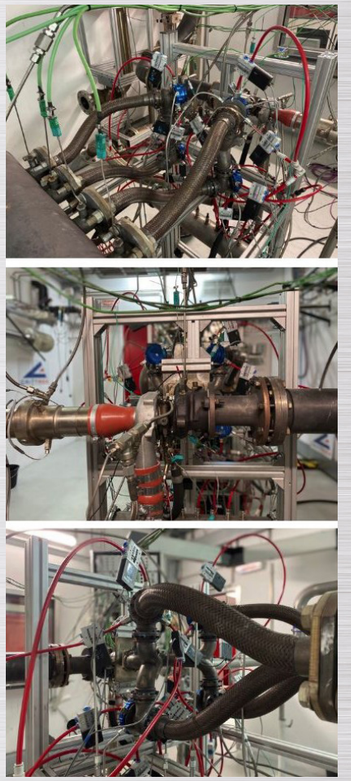
For several months, Nicolas Vachon, engineer at CRITT M2A, has been preparing its Ph.D. in partnership with **Lille Fluid Mechanics Laboratory** to investigate the performance of a turbocharger turbine under hot pulsating flow.

Nicolas is working on an innovative test bench, which provides a hot pulsating flow similar to the engine operation, with a temperature up to 650 °C and pressure up to 4,5 bar gauge relative which can be achieved at the turbine inlet

Furthermore, pulse shape and frequency can be adjusted to be able to test a wide range of turbochargers. This allows us to simulate engine operation up to 3000 rpm for a 4 cylinders, 4-stroke engine.

This doctoral thesis, carried out under a CIFRE contract, aims to help the understanding of turbocharger performance under a pulsating exhaust flow from an internal combustion engine.

«During this study, I will focus on different turbine stages and their interaction with the pulsating flow. More precisely, I will investigate on behavior differences between wastegate and variable geometry turbines. Experimental study and numerical simulations are conducted to improve the current turbocharger and engine performance models"»



Turbocharger will play a key role in future hybrid powertrain and CRITT M2A is already working to meet customers' expectations

CRITT M2A is developing its range of «energy storage» test solutions

The CRITT M2A electrical test center has high-power resources to test all kinds of energy storage systems.

Equipped with 96 cells test channels, 9 modules test channels and 6 battery packs benches, CRITT M2A can cover any kind of tests during development and certification phases.

Its pack benches can accommodate packs of several tons and reach current peaks up to 1800A, a voltage of 1200V and a maximum power of 750kW.

CRITT M2A recently implemented even more efficient **liquid** cooling systems on all battery test benches.

These systems will make it possible to perform tests with high dynamic electrical and thermal cycles, with a cooling temperature reaching down to -30 °C.

These systems are associated with our climatic chambers which allow the environment of the battery to be conditioned down to -40 ° C with humidity control.

SYTEC 2021

The next edition of SYTEC will take place on October 18 and 19, 2021, in Bruay la Buissière

NEW! This edition will be digital, the conferences will be accessible online free of charge via the dedicated portal.

Organized in partnership with FEAL and ARIA Hauts de France, this edition will take place over two days at CRITT M2A. We will take this opportunity to inaugurate the electrical test center.

Conferences, round tables, workshops and animations are planned.
Agenda coming soon...

AGENDA 2021

CRITT M2A will organize the SYTEC 2021 in Bruay la Buissière, on October 18 and 19, 2021.

CRITT M2A will attend the LCV conference in Bedfordshire,on September 22 and 23, 2021.

CRITT M2A will attend the Electric & Hybrid Vehicle Technology Expo in Stuttgart, from November 30th to December 2nd, 2021.

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Our subsidiaries