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CRITTM2A

CRITT M2A/LSEE partnership





As **LSEE** and **CRITT M2A** have complementary areas of research and skills, they have agreed to create a joint laboratory through a partnership agreement in order to collaborate on the theme of electric traction chains and their components.

The two partners wish to promote the emergence of collaborative projects. These projects will be carried out jointly and may involve other industrial and / or academic partners.

Projects can be carried out through collaborations, services, theses but also through specific calls for projects such as ANR type European projects (H2020 or Interreg), PSPC, etc.

CRITT M2A brings its skills in engine performance test methodologies in their vehicle environment and traction chains.

It is able develop new methodologies and new test facilities to meet market demand in terms of failure risk prediction and performance of energy management of traction chains.

It also brings the Acoustic and Vibratory technological know how about the emissivity performance of the components of the traction chain (motors) both in organ clean mode and in integrated mode (vehicle synthesis).

The joint laboratory partnership contract took effect during the first half of 2020 and the joint laboratory already hosts 3 collaborative R&D projects.

OECTE project progress

Fully invested in new developments in the electric powertrain, **CRITT M2A** has been involved in the **OECTE** project for over a year.

In partnership with the University of Artois, the Ecole Centrale de Nantes, Gamma Technologies, OPAL RT Technologies, R13Technology SpinOff of the University of L'Aquila and AVL SET, CRITT M2A aims at setting up a modeling and tests methodology to optimize energy management and the reliability of electric traction chains.

A 320kW inverter bench developed by AVL SET, OPAL RT and CRITT M2A is being installed and will be operational in the first half of 2022.

Modeling of electric motor failures applied to real-time simulation is under development. The first model concerning the electrical failures of the synchronous machine with permanent magnets has been validated experimentally in the laboratory and the modeling of the mechanical failures is under development.

The methodology for calibrating the electrochemical and thermal models is being finalized.

The development of an open three-phase inverter in Silicon Carbide Technology (SiC) supporting 850Vdc and up to 800A will be available in the second half of 2022.

This inverter will be used for the development of control laws for asynchronous machines or synchronous machines with permanent magnets.

New : discover our abuse test bench

In 2021, **CRITT M2A** stepped up the development of its resources and skills in the field of energy storage. Thus, our teams have designed and produced a test bench dedicated to abusive battery tests such as short-circuit, voltage or current overload, under discharge and overheating tests.

Equipped with suitable safety systems in the event of thermal runaway or explosion, the test bench also has video acquisition systems and high-frequency measurements which are essential when performing short-circuit tests.

Used to working with high power packs/modules, this bench is flexible for carrying out tests on packs of a few kW up to 500kW for any type of market (stationary applications, electric or hybrid vehicles, light mobility, etc.).

In addition to the electrical tests carried out for several years at **CRITT M2A**, these new possibilities make it possible both to work on the behavior of the battery during the design phases but also during the validation / certification phases of the product by validating, for example, the correct one. operation of the BMS.

All our teams are at your disposal for more information: sales@crittm2a.com

www.crittm2a.com









2025 Roadmap

The center continues to accelerate and to consolidate its development in electrification.

In the near future, **CRITT M2A** will be dedicated to become a multimodal company turn to mobility, strictly in line with **Regional Policy.**

The move to a purely internal combustion engine oriented to multichannel electromobility with a focus on energy efficiency.

In the medium term, the centre's teams are working to develop their skills over the entire battery life cycle.

CRITT M2A projects focus on recycling batteries in collaboration with CREPIM and UMET Valenciennes, and the creation of a training center for electromobility manufacturers and in particular French gigafactories.

With its high technology equipments and expert engineers, the CRITT M2A is ready to support the space industry in its transformation by 2025. Therefore, it is positioning itself as of today on validation tests of some spatial parts acoustic resistance.







Recruitment

As part of the development of its electrical test center, CRITT M2A is recruiting battery test technicians to perform endurance, characterization and environmental type tests on lithium batteries and others.

Find the detailed offer here

AGENDA 2022

15-16 June 2022: CRITT M2A will attend the SIA Powertrain & Energy conference, in Rouen.

21-23 June 2022 : CRITT M2A will attend the Automotive Testing Expo show, in Stuttgart.

28-30 June 2022: CRITT M2A will attend the Battery Show Europe, in Stuttgart.





Our subsidiaries



Relive the SYTEC 2021







EUROPE

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