

Sustainable mobility | Electrified Mobility

ELECTRIFIED MOBILITY

OUR STRENGTHS

- Collaborations to support **our industrial partners** in the development and validation of their technologies.
- Industrial partnerships for **the joint development** of our technological products.
- A **modeling-based approach**, adapted for a range of products to reduce the development cycle time.
- The capacity to produce **prototypes** making it possible to:
  - validate the technological promise of the various building blocks developed,
  - take into account industrialization constraints from the outset.
- Comprehensive and **specific experimentation facilities**: engine test benches, electric engine test benches, HIL test benches, rolling test benches, battery test benches, climatic test benches, optical diagnosis, ORC test benches, test benches dedicated to power electronics.
- A differentiated control approach based on **efficient control algorithms** capable of adaptation to the different applications covered by our industrial partners.

Vehicle test benches and electric motor test benches consolidate IFPEN's capacity to work on electric powertrains and their power electronics, and reinforce its range of hybrid and electric vehicle evaluation services.

A custom design tool

IFPEN has developed e-MOD Tools (electric Motors Optimal Design Tools), an electric machine design optimization software suite. The generation of a large number of virtual solutions using a supercomputer makes it possible to obtain a concept reconciling multiple constraints: performance, industrial feasibility, the use of rare earths, cost, environmental impact. This tool makes it possible to rapidly achieve the optimum, robust design of active components to meet the constraints of a target industrial application.

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Electrified Mobility: Our strengths

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