

Spanish researchers build electric motorcycle prototype

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This is an artistic point of view about the electric motorcycle. Credit: LGN Tech Design SL

A group of engineers at Carlos III University of Madrid has developed a prototype of a high-performance electric motorcycle, which has recently participated in the first electric motorcycle world championship.

This project, known as e-Moto, was created and developed by LGN Tech Design, a spin-off company that has its origins in a line of research begun in the Laboratorio de Máquinas (MAQLAB – Machine Laboratory) of UC3M and receives support from the University's Vice-Chancellor's Office of Research through the Business Incubator UC3M

Science Park. "The technology that we have developed is a result of the design of a platform for the modeling, analysis and evolution of racing motorcycles, which was then applied to the development of the e-Moto", comments the head of the MAQLAB, Professor Juan Carlos García Prada, of the Mechanical Engineering Department at UC3M.

The prototype of the e-Moto recently participated in the first FIM E-Power [electric motorcycle](#) world championship (100% electric), organized by the International Motorcycling Federation. The model came in third, a position of merit according to its creators, who point out that, although there were only three contestants on the track at the Magny-Cours circuit in France, the motorcycle managed to finish the race with no mechanical problems whatsoever.

This is a vehicle that was conceived as an electric motorcycle from the very beginning, with battery recharging systems that offer quite remarkable results, and which are similar to those of an automobile. Among the technical features of the prototype, its light weight (145 Kg.) in comparison with other existing models stands out, as does its alternating current motor, which boasts a maximum 95 horsepower. It also features a system for recharging its batteries when braking and an innovative front suspension based on a system that has already been tested in other research projects.

A global e-motorcycle

This first prototype, according to its promoters, is the beginning of the worldwide development of electric motorcycles that goes beyond current electric motorcycles, the majority of which are of the scooter type. The creators of this project recognize that in this phase of the development of Spanish electric motorcycles, the support of public and private institutions is needed, in order to allow for the evolution of what will be the first Spanish company to develop high performance electric

motorcycles.

The idea is that an electric motorcycle offers great advantages over a conventional motorcycle. "The most important thing, when considering its use in society, is the nearly complete elimination of gasses and the considerable reduction of noise and vibrations", explains Juan Carlos García Prada. Summing up, this is a Spanish research project that attempts to take advantage of advanced technology in order to create a more sustainable future.

The results of the different projects carried out within the university setting have lead to the creation of the UC3M LGN Tech Design Chaired Professorship. "We have created this professorship in order to offer technological support to the students who have developed this project and who have carried out other research projects as well", comments Professor García Prada. A direct consequence of all of this interrelated activity by the university and the productive world is the stimulation of new teaching (through students' final projects, practicums, etc), as well as of R + D within UC3M in the automobile components area, within the context of the potentially huge market, considering both the institutional demand and that of society at large.

Provided by Carlos III University of Madrid

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