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PRESS RELEASE

5 June 2019

Modular battery packs and thermal optimization – Ricardo shares perspectives on future EVs

With the transition to dedicated platforms for electric vehicles offering greater opportunities for product optimization and design flexibility, Ricardo contends that new approaches are needed to modular battery pack design and thermal management

At the Société des ingénieurs de l'Automobile (SIA) international powertrain and electronics conference, which takes place in Paris on 12-13 June, Ricardo will present its perspectives on two of the most pressing issues facing the developers of battery electric vehicles.

Until recently, shared platforms have provided the basis of both liquid-fuelled and battery electric vehicles. Now, the development of dedicated ‘xEV’ platforms as the basis of a wide range of plug-in products allows design flexibility for a larger interior space, as well as offering the potential for platform sharing across electric models and brands under the same umbrella company. Such dedicated platforms are usually of modular design so that additional battery modules can be added to the pack to increase its performance. In terms of energy and power requirements, pack characteristics can thus be adapted according to each product’s performance specification. This can also protect for future market requirements such as increased battery voltage to allow for ultra-fast charging and improved system efficiency.

To support automakers through the different stages of electric vehicle development, Ricardo has established a flexible and novel approach to the development of a modular battery pack that meets all these needs. The paper *Modular battery pack development for PHEV and BEV applications* outlines key challenges, constraints and solutions that the company has worked through to ensure cost-effective battery pack engineering and timely delivery.

A further paper, *xEV thermal system control optimization*, focuses on the challenges thermal management system development in state-of-the-art electrified vehicles, where multiple cooling circuits and multiple control valves may be required to fulfil the many heating and cooling requirements of such products. The choice of the right model and level of detail is central to control algorithm developments, and the paper summarizes a spectrum of thermal models that may be applied to control system design for future electrified xEV vehicles.

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NOTES TO EDITORS:

Ricardo plc is a global, world-class, multi-industry consultancy for engineering, technology, project innovation and strategy. Our people are committed to providing outstanding value through quality engineering solutions focused on high efficiency, low emission, class-leading product innovation and robust strategic implementation. With a century of delivering excellence and value through technology, our client list includes the world's major transportation original equipment manufacturers, supply chain organizations, energy companies, financial institutions and governments. Guided by our corporate values of respect, integrity, creativity & innovation and passion, we enable our customers to achieve sustainable growth and commercial success. Ricardo is listed in the FTSE4Good Index, which identifies global companies that demonstrate strong environmental, social and governance (ESG) practices. For more information, visit www.ricardo.com.

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