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PRESS RELEASE

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Ricardo to present at Aachen high-efficiency Magma xEV engine for hybrid applications

At the prestigious Aachen Colloquium to be hosted on 7-9th October, Ricardo and Geely will present research work into the application of the Ricardo Magma xEV gasoline engine concept into a commercial vehicle series hybrid powertrain, delivering an impressive 45 percent brake thermal efficiency

The Ricardo Magma concept was developed as a Miller cycle engine delivering fuel efficiency benefits while maintaining full-load specific performance. Magma xEV is an extension of these principles to hybrid vehicles, to take advantage of the new flexibilities offered by such applications. This engine concept is particularly attractive for series-hybrid and range-extender powertrain applications, where the driver experiences an EV style of driving with tractive effort provided through an electric motor. As the combustion engine acts as an electrical generator, it can be optimized to a significantly higher level of efficiency.

In the paper co-authored with Geely, Ricardo engineers describe the processes of simulation-led development and physical testing of a single cylinder prototype. The Magma xEV concept described in the paper, uses homogenous lean-burn combustion with knock mitigation assessed through approaches including both direct and port water injection. The results of this research have demonstrated the capability of the Magma xEV to achieve a brake thermal efficiency of 45 percent in this application, offering the potential of significant fuel economy improvements over and above those of a conventional gasoline engine used in such a series hybrid powertrain.

Alongside this impressive high efficiency hybrid powertrain research with Geely, Ricardo will also be highlighting a range of new concepts and technologies including its recently unveiled high efficiency scalable electric drive unit (EDU), battery pack and management system developments, and its virtual reality engineering review app, which enables collaborative simultaneous engineering design reviews to be carried out by multiple users in different geographical locations.

Throughout the 20th Aachen Colloquium, 7-9th October 2019, Ricardo will be exhibiting at booth 23. The paper 'Designing and Testing the Next Generation of High Efficiency Gasoline Engine Achieving 45% BTE' by Ricardo and Geely, will be presented at 9am on Wednesday 9th October in the Berlin Hall.

Ends

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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