

Electrification for high performance automotive applications

End to end electrified propulsion system product development for ultra-high performance applications.

Ricardo is a trusted provider of electrification solutions which prioritise ultra-high performance whilst minimising compromise to the vehicle dynamics and styling characteristics that define an OEM's brand.

From concept to production, we work with our OEM parters to create turnkey solutions which meet the complex technical and operational programme requirements associated with hypercar development.

Our renown engineering and manufacturing expertise across the full electrified propulsion system, including battery systems, power electronics, electric motors, inverters, digital engineering and transmissions ideally positions us to deliver end-to-end solutions to help you seamlessly transition your portfolio to electrification.

End-to-End Support

Ideation & Strategy

Engineering Consultancy

Design & Development

Prototyping

Test & Validation

Product Industrialisation

Low Volume Production

Supply Chain Management

Aftermarket Service Support

Our Capability

Battery Systems & BMS

Fuel Cell Systems

Vehicle & Traction Controls

Electric Motors

Vehicle Integration & Optimisation

Power Distribution

Power Electronics & Control

Transmissions

Digital Engineering

Analysis & Simulation

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Battery technologies

- Advanced cell technology to increase discharge and energy capacity
- Wireless and 22kW OBC in addition to ultra-fast charge DC
- Use of latest Li-Ion NMC, LFP cells in addition to R&D on SSB

PEMD technologies

- 800V and 1.2kV architectures with multi-level inverters and converters
- SiC and GaN Inverters with high power density and advanced cooling
- High efficiency, high power density and sustainable traction motors

Digital engineering and optimisation

- Virtual Product Development design and analysis for right first time virtual calibration and smart validation
- Powertrain modelling, optimisation and digital twin
- Vehicle integration controls and AI-enhanced controls and monitoring

Why Ricardo?

Performance with minimal compromise

Ricardo's experts design battery packs with the right balance between power density and pack mass and volume, enabling high performance whilst limiting compromise to packaging and vehicle styling characteristics.

Analysis to lower mass and centre of gravity to maintain vehicle performance.

Customer experience and brand DNA

Expertise to develop brand-defining vehicle dynamics through advanced vehicle controls, including torque vectoring, torque distribution and enhanced acceleration.

Managing end-user satisfaction with advanced battery package, fast and wireless charging capabilities and high-efficiency SiC or GaN power electronics that maximise performance and range.

Safety and compliance

Validated battery performance and safety through simulation-led engineering enables high-power delivery without excessive cell stress.

NVH analysis and advanced thermal management capability, and specialised venting strategies to detect, manage and contain cell failures, preventing thermal runaway at module and pack level.

Development time and cost

Leverage Ricardo's proven digital engineering processes, validated IP and end-to-end development expertise to accelerate programme delivery, reduce technical risk, and avoid the cost and time associated with clean-sheet development.

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