



PRESS RELEASE

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Nexperia partners with Ricardo to develop gallium nitride based EV inverter design

Nexperia has announced a partnership with Ricardo to produce a technology demonstrator for an EV inverter based on gallium nitride (GaN) technology

GaN is the preferred switch for these applications as GaN FETs lead to systems with greater efficiencies at lower costs with improved thermal performance and simpler switching topologies. In automotive terms this means that the vehicle has a greater range – the major concern for anyone looking to buy an electric vehicle. GaN is now on the brink of replacing SiC or silicon based IGBTs as preferred technology for the traction inverters used in plug-in hybrids or full battery electric cars.

Nexperia announced a range of AEC-Q101-approved GaN devices last year, providing automotive designers with an ever-widening portfolio of proven, reliable devices in this high-efficiency technology, providing the power density required for electrification of the powertrain. Ricardo is very well regarded in the automotive industry, the Global engineering innovation company designs and consults on concepts within the automotive industry, including the manufacture of prototypes and demos, and boast collaborations with high-profile leading brands such as McLaren and Bugatti. Ricardo was the perfect partner for Nexperia for this project.

Michael LeGoff, general manager GaN, Nexperia, commented: “By designing our GaN devices into an inverter and trialling them through Ricardo, we will be able to better understand how a vehicle can be driven safely and reliably. We are

developing a real solution that I think a lot of automotive designers will be interested in having a look at and will find extremely advantageous.”



“Semiconductor technology is key to the efficiency of the inverter system and the role that it plays in the performance and efficiency of an electrified vehicle,” added Adrian Greaney, director - technology & products, Ricardo. “By delivering significant benefits in terms of the switching speed and efficiency, gallium nitride is a real enabling technology. As well as leading to increased range, it allows us to reduce the package size and weight of the inverter, which provides greater powertrain design flexibility as well as contributing to vehicle mass reduction. There are also many associated benefits that when we look at the design from a system level, and Ricardo is therefore pleased to be collaborating with Nexperia on GaN devices.”

For more information on Nexperia's AEC-Q101-qualified portfolio of GaN devices, visit: www.nexperia.com/gan-fets

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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.

Nexperia is the expert in high-volume production of discretes, MOSFET and GaN FET components and analog & logic ICs that meet the stringent standards set by the Automotive industry. With an absolute focus on efficiency, Nexperia consistently produces the essential semiconductors required by every electronic design in the world: more than 90 billion annually. Products that are benchmarks in efficiency - in process, size, power and performance - with industry-leading small packages that save valuable energy and space. With decades of experience, supplying to the world's biggest companies, Nexperia has over 11,000 employees across Asia, Europe and the U.S., offering global support. The company has an extensive IP portfolio and is certified to IATF 16949, ISO 9001, ISO 14001 and OHSAS 18001. For more information, visit www.nexperia.com

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