



ePropelled Releases Groundbreaking Electric Vehicle Motor System at CENEX-LCV

Lowell, MA | September 22, 2021 - ePropelled, the Massachusetts-based technology company that offers leading-edge electric propulsion systems, today announced the release of a groundbreaking new electric vehicle (EV) propulsion system to be showcased at the Cenex-LCV in Millbrook, U.K. This new system increases power efficiency by at least 15%, which will allow manufacturers to reduce the size and cost of their battery packs. Battery packs can account for as much as 30% of the cost of vehicles, which can make smaller EVs uneconomical. Reducing this cost will improve profitability of EVs while facilitating adoption by consumers.

ePropelled's *Dynamic Torque Switching*[™] (eDTS) uses an innovative software-controlled reconfigurable propulsion motor that is the foundation of a complete EV propulsion system. eDTS allows the electric motor to provide high torque at low speeds without drawing high current from the batteries. It also provides high speeds at low torque levels without using field weakening, thereby increasing the efficiencies throughout. eDTS is a scalable design that can be used in a variety of electric vehicles ranging from light EVs, such as scooters and three wheelers used in last mile delivery, to cars and trucks.

This patented technology is a drive system concept that allows a single electric machine to dynamically change between several modes to provide a much broader range of high efficiencies for low power consumption. The control system is designed to allow the transition between the modes to take place seamlessly to deliver optimum torque, speed, and efficiency characteristics in real time.

The technology company will reveal and display its innovative electric motor technology in the ARMD stand, #SP-20, and the Wales stand, #C3-117, at the Cenex-LCV 2021 show in Millbrook on September 22-23. ePropelled worked with Tata Motors with support from Embed, Ltd. to install the eDTS system in a Tata Tiago, which will also be on display at the Cenex-LCV conference. This version of the new propulsion system generates 60 kW continuous power and up to 180 kW of peak power (for 10 seconds). The system is designed to be scalable so eDTS technology can be used in a wide range of vehicles.

“We are very excited to be able to showcase our technology at Cenex-LCV 2021 and are looking forward to briefing industry leaders about our systems,” said Nick Grewal, ePropelled’s CEO and president. “For the next few years, the battery will remain the most expensive component in an EV. Our system uses battery power much more efficiently, which will allow a manufacturer to reduce the size of the battery pack by at least 15%. That will enable vehicles to be much more profitable while meeting consumer expectations for range and performance.”

According to the U.S. Environmental Protection Agency (EPA), the transportation sector accounts for 29% of greenhouse gases, with a typical passenger vehicle emitting about 4.6 metric tons of carbon dioxide per year¹. Transitioning to eMobility is essential to reducing this negative impact.

“ePropelled delivers technology that not only enables the migration to EVs, but also uses electricity much more efficiently. There is tremendous value in further reducing greenhouse gases not just from vehicles but also upstream from the power generation and grid,” added Grewal.

¹ <https://www.epa.gov/greenvehicles/greenhouse-gas-emissions-typical-passenger-vehicle>

ePropelled's CTO, Dr. Nabeel Shirazee, and Head of EV Strategy, David Hudson, will present a session entitled ["Using Magnetic Engineering to Improve EV Performance"](#) which will include the performance improvements shown in our benchmark testing. This will take place during the "Power Electronics Machines and Drives" session on Thursday, September 23, at 12:30 pm.

"The work was initially carried out using digital twin software simulation packages, then on a dyno, and finally integrated into a vehicle," commented David Hudson, head of EV strategy. "The prototype was mounted to an existing EV, which allowed the results to be compared with the original EV drivetrain Bosch motor system. We confirmed that our motor is much more efficient, and we can't wait to share the results at Cenex."

Dr. Shirazee added, "ePropelled had already delivered a working bench-top proof-of-principle system and the next step was to build a full-scale demonstration vehicle. As a technology company, we recognize that innovation and invention are essential to enabling the transition to EVs. We are excited that we are part of an effort to develop green technologies for the United Kingdom and the world."

ePropelled will be present at the ARMD stand, #SP-20, and the Wales stand, #C3-117, for both days of the exhibition. This technology demonstration is made possible by a grant from the Advanced Propulsion Centre (APC) Advanced Route to Market Demonstrator (ARMD 1025 SEEMS) program, as part of a massive effort to develop green technologies in the United Kingdom.

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About ePropelled

ePropelled designs intelligent motors, motor controllers, generators, and power management systems. Our technology helps reduce energy consumption and improve system efficiency at a lower cost in the aerospace, manned and unmanned aerial vehicles, electric vehicles, and pump markets. We are a leader in magnetics engineering, and our patented technology innovations are used in the air, on the road, and on water, defining the future of electric propulsion.

ePropelled has offices in the United States, Europe, and India and collaborates with manufacturers of all types and sizes around the world. For more information, please visit epropelled.com.

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