

Longer-lasting lithium batteries for electric cars being developed here

Researchers from the Queensland University of Technology (QUT) have joined with Australia's AutoCRC and the Malaysia Automotive Institute (MAI) to develop longer lasting lithium-ion batteries for electric vehicles.



Credit: QUT Marketing and Communication/Erika Fish

The goal of the three-year project, which has been funded with \$4 million from the AutoCRC, is to develop improved methods of manufacturing the advanced materials used in the batteries so that these methods can quickly be adopted by Malaysia's growing electric vehicle industry.

The project will be led by Professor Peter Talbot from the Institute for Future Environments at QUT.

'The global shift to electric cars will help wean the world off fossil fuels and reduce greenhouse gas emissions and air pollution,' said Prof Talbot.

'But the technology and production processes for electric vehicles must keep improving so that their driving range keeps increasing and their prices keep falling.

'The most important – and most expensive – piece of the puzzle is the battery. The greater the energy-density of the battery in an electric vehicle, the further it can travel before it needs recharging.'

Most electric vehicles currently on the market use lithium-ion rechargeable batteries. Prof Talbot and his team will identify the most promising lithium-based powders to use in these batteries and then optimise the process of producing them at a commercial scale.

‘As new high-performance materials are created in the lab, new production processes must be developed alongside them if the materials are to really benefit industry and the world,’ said Professor Talbot.

‘By June 2017, we will have well-tested material specifications and process parameters that automotive companies can start using.

‘Over the course of this project we will test and refine new production processes at lab scale, concept scale, pilot scale and ultimately commercial scale.

‘We will use off-the-shelf equipment that is energy-efficient, environmentally friendly and capable of producing lithium-ion powders at commercial quantities. And we will use techniques and methods that any manufacturing company can use. We intend to make the transfer of technology to the automotive industry as efficient as possible.’

Professor Talbot has an international reputation in materials science, particularly in the fields of nano-materials manufacturing and high temperature superconductors. He holds numerous patents in the areas of solid-state chemistry, automated chemical manufacture and nano-materials.

The AutoCRC is a Cooperative Research Centre (CRC) that develops new low emissions technologies and capabilities for the automotive industry.

Source: QUT

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