



UK consortium develops innovative technology

The University of Liverpool and a multidisciplinary consortium of four UK companies will develop thermal management and chemical products from Lost Carbonate Sintering (LCS) porous metal, and also develop an advanced manufacturing technology by combining microwave sintering and LCS. It is expected this will reduce product weights for the same heat transfer performance and reduce the production time and energy consumption.

LCS is a world-leading technology for manufacturing open-cell micro-porous metals. It offers significant advantages over competing technologies, combining low production cost and accurate control over the pore structure.

The project aims to devise the LCS production process for porous metals (metal foams) and develop a range of products utilising the benefits of the materials. It offers a radically simple and low cost manufacturing route to various components. The resultant products are expected to progress to market quickly and have more significant commercial impacts than structural products.

The overall aim of this two year project is to reduce products weights by 20-50% for the same efficiency as that of the current commercial products. Another innovative aspect is that applying microwave sintering to LCS can potentially reduce the processing time by more than 50% and the energy consumption during production by typically 30%.

The project is a collaboration between technology developer (C-Tech), a materials research team (the University of Liverpool), a vacuum furnace supplier (VTS), a heat exchanger producer (Thermacore) and a metal powder producer (Ecka).

"We received funding for this project from the Technology Strategy Board Collaborative R&D programme," explains Business Manager, Dr Gillian Murray. "This programme is an excellent vehicle within which to develop and exploit University technology."

The University of Liverpool has an outstanding record in academic and applied research and enjoys extensive industrial collaboration and support. There are around 15 active R&D projects funded by the Technology Strategy Board/Dti at the University, with a total collaborative project value of around £25m.