

Media Release

Chiefs of Staff, News Directors

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3D printer project puts University at the cutting edge of micro engineering

Fast 3D printing at an unprecedented scale – with molecular level control – will be the focus of University of Tasmania research which has received a \$630,000 grant from the Australian Research Council (ARC).

It is one of four University projects to be supported in the latest funding round of the ARC's Linkage Projects scheme.

The 3D printing project – being jointly conducted with Taiwanese-based optical manufacturer Young Optics – will be led by Professor Michael Breadmore, of the University's Australian Centre for Research on Separation Science (ACROSS).

Professor Michael Breadmore said the technology will be used in the development of the next generation of portable analytical systems, which have applications in a broad range of fields including health, the environment and agriculture.

Widely known systems, such as home-pregnancy testing and blood-alcohol testing, allow users to access on-the-spot answers. Researchers now want to extend portable analytical systems to enable complex analysis of samples using portable units, including phone apps.

Professor Breadmore said being able to develop the 3D printer with Young Optics would go a long way towards helping to create portable analytical systems into the future.

"In terms of research we are leading the micro-engineering space with 3D printers," he said.

"I'm interested in tailoring portable systems across a range of areas - from measuring nutrients in fertiliser run-off to health through easy and accessible diagnostic devices for therapeutics and biomarkers."

The project will be carried out over the next three years with Professor Breadmore working with colleagues including Dr Rosanne Guijt (Pharmacy, School of Medicine), Professor Brett Paull (ACROSS) and Dr Stuart Thickett (Chemistry, School of Physical Sciences).

The other three University projects to receive Linkage Projects funding are:

- The development of a risk management system for systemic downy mildew, a new disease threat to the Australian poppy industry. Tasmanian Institute of Agriculture researchers Dr Jason Scott, Associate Professor Calum Wilson and Dr David Gent, working with four industry partners and the Department of Primary Industries, Parks, Water and Environment, have received \$360,000 to identify the critical inoculum sources of this disease;
- A Centre of Excellence in Ore Deposits (CODES) team led by Dr Sebastian Meffre, collaborating with nine partners, including Rio Tinto, has received \$418,000 for a project in South Australia to identify areas of high potential for economically valuable ore deposits, enabling more efficient prioritisation of mineral exploration efforts. This is expected to increase the probability of significant ore deposit discoveries leading to national economic benefit;
- Engineering's Professor Michael Negnevitsky and Dr Xiaolin Wang, with Hydro Tasmania's Simon Gamble, have received \$295,000 for a project which aims to investigate and optimise no-load diesel application within remote area renewable hybrid power systems. The project is expected to return immediate benefits to remote mining, defence and tourism-based communities, providing a pathway to reduced diesel usage and increased renewable penetration.

Deputy Vice-Chancellor (Research) Professor Brigid Heywood said the four ARC-funded projects were a clear example of the University's national and world standing in its themes of research strength.

Information released by:

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