

## MEDIA RELEASE

### 3D printing to create precision-engineered mining equipment

**Melbourne, 30 May 2018** – Research project to revolutionise the way composite polymers are used to manufacture precision-engineered mineral separation and mining equipment.

#### Key points:

- Collaborative research project to manufacture precision-engineered mineral separation and mining equipment
- [Mineral Technologies](#), [University of Technology \(UTS\)](#) and the [Innovative Manufacturing CRC \(IMCRC\)](#) are developing a bespoke additive manufacturing system for mineral separation equipment
- Bringing cutting edge production to the mining industry and related sectors

IMCRC is a partner in a new research alliance with Downer, through its Mineral Technologies business, and UTS' Rapido – advanced technology development unit. Together they will cooperatively research solutions that will revolutionise how composite polymers are used to manufacture mineral separation equipment and create new manufacturing technologies.

Additive manufacturing (AM), or 3D printing as it is also referred to, is the fastest-growing manufacturing sector worldwide. This is due to the many benefits it offers companies in terms of new product development, time to market, reduced waste and lower product cost. AM enables the rapid design and production of complex products and associated advanced business models such as customer-led design processes and just-in-time production.

Anticipated to run over a three-year period, the research alliance covers the first phase of the project. UTS will house all project work at a new additive manufacturing facility at its Broadway campus to network and brainstorm various conceptual ideas.

Located in the Faculty of Engineering and IT, this project will be undertaken with Rapido, a unique rapid prototyping unit established by UTS in 2016 to help industry, government and community partners translate innovative ideas and complex problems into viable products and solutions.

Herve Harvard, Director of Rapido, says the unit seeks research partnerships to engage staff and students in innovative projects which help to bridge the gap between industry and universities. Two PhD students will be allocated to the Downer/IMCRC project and mentored throughout its lifecycle.

“Partnering with Rapido harnesses a unique capability in terms of the breadth and depth of expertise, and advanced facilities we have at UTS. We can assemble multi-skilled teams to leverage the expertise of high performing engineers who have extensive experience in commercial research and development together with researchers who bring world class academic expertise in key technology domains. This project demonstrates how UTS is

becoming a leading university in additive manufacturing and, in this particular context, leading in the capability to develop bespoke 3D printing technologies suitable for manufacturing functional parts,” Herve said.

Mineral Technologies Global Manager - Sales, Equipment and Technology, Alex de Andrade, is an associate professor with UTS and will provide industry partner leadership to the project. Alex said the project is aligned with Mineral Technologies’ strategic technology roadmap as it focuses on delivering AM products with embedded Internet of Things (IoT) connected sensors. These sensors will direct operators to optimal set point recommendations in real time.

“This project will define an accelerated deposition and curing technique for AM which will hasten the way in which composite polymers are deposited to manufacture our mineral separation equipment, in particular, gravity spirals. We expect to see positive environmental impacts, such as decreasing the need for chemicals and reducing air contamination, which will significantly improve the operational environment for our manufacturing workforce,” Alex said.

It is anticipated that the new AM manufacturing methods will attract the next generation of engineers and workforce who will become skilled at setting up 3D printers as well as profile programming and CAD meshing development.

David Chuter, IMCRC’s CEO and Managing Director, pointed out that applying AM technologies will not only revolutionise the manufacturing process of mineral separation equipment but the associated supply chain operations, especially when the equipment is fitted with IoT sensors.

“Mineral separation equipment is often operated in a remote and hostile environment. Deploying gravity spirals fitted with IoT sensors will offer Mineral Technologies a clear picture of the product performance. We also see that this innovative manufacturing approach and research could yield benefits for other sectors, such as vertical agriculture and other applications.”

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**About the Innovation Manufacturing CRC**

The IMCRC is a not-for-profit, independent cooperative research centre that helps Australian manufacturing companies increase their relevance through collaborative, market-driven research in business models, products, processes, and services. In collaboration with manufacturing businesses, research organisations, industry associations, and government, the IMCRC co-funds broad, multidisciplinary and industry-led research projects that deliver commercial outcomes, and advances the wider cause of manufacturing transformation through industry education and public advocacy.

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