The Australian National Fabrication Facility

151 Wellington Road, Clayton 3168, Australia

Providing micro and nano fabrication facilities for Australian researchers.

ABN 50 124 231 661

ANFF and NASA formalise collaborative umbrella agreement

Nanofabrication expertise to be partnered with global authority in space exploration

9:00am, Wednesday, 23 October 2019 – A collaboration that aims to deliver new electronic technologies and to find uses for advanced materials has been announced today by the Australian National Fabrication Facility (ANFF) and the National Aeronautics and Space Administration (NASA).

The umbrella agreement will harness the micro and nanofabrication expertise of ANFF to assist NASA, the global authority on space exploration, to solve current technological challenges faced by the aerospace industry.

Dr Ian Griffiths, ANFF's CEO, said: "I am delighted to say that our organisations have reached this agreement. I believe that this will allow us a framework to collaborate on a range of projects that will produce tangible, real world impacts that are felt for years to come. These projects will demonstrate the world-class capability of ANFF and the talents of our associated academics across many of our nodes."

In particular, the agreement states that the two organisations will aim to identify issues that could be addressed and to develop methodologies to advance nanotechnology-based communications and sensing capabilities. The first of many projects enabled by this agreement will investigate microfluidic sensor platforms for monitoring astronaut exposure and health during long space missions. This research is being led by A/Prof. Craig Priest from the University of South Australia's Future Industries Institute and Director of ANFF SA.

The outcomes of this first project may support human exploration to the Moon and Mars, which is the focus of the recently announced $150M Australian Space Agency and NASA partnership. The envisaged non-invasive sensors will also find use on earth, as health management is revolutionised through low-cost wearable technologies.

Space-bound devices must be engineered to meet incredibly high demands. They have to be ultralightweight to escape Earth without using too much fuel, energy efficient so as not to require too much power when in space, and miniaturised so as not to take up too much room on a satellite or spaceship. They must also be robust enough to survive extreme temperatures, intense radiation, and need to work perfectly for years in this challenging environment, as key missions and potentially an astronaut's life could depend on them.

In order to create improved technologies that can meet these challenging practical requirements, while also providing unprecedented scientific insight, ANFF's nanofabrication expertise will be combined with NASA's unparalleled understanding of aerospace applications. Together the partnership hopes to create a new generation of space-bound devices that can help build humankind's knowledge of outer space.

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About ANFF

Established under the National Collaborative Research Infrastructure Strategy (NCRIS), the Australian National Fabrication Facility (ANFF) provides academia and industry with access to more than 500 state-of-the-art micro/nanofabrication facilities spread across 21 Australian locations.

For more than a decade, ANFF has been enabling research through a mixture of training, expert support and direct access.

The capability provided by ANFF enables users to process hard materials (metals, composites and ceramics) and soft materials (polymers and polymer-biological moieties) and transform these into structures that have application in sensors, medical devices, nanophotonics and nanoelectronics.

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