

ANFF-SA capabilities **empowering** small and mid-size enterprises to manufacture **onshore**

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fully invested in translating their novel

technologies for advanced manufacturing.

Associate Professor Craig Priest,

Director, ANFF-SA

A world-class team of micro and nano fabrication experts are enabling Australia's small and mid-sized enterprises (SMEs) to develop and manufacture novel next-generation technologies on home soil.

Providing a competitive sovereign pathway for SMEs to transform innovative 'ideas' to 'proof-of-concept prototypes', the South Australian node of the Australian National Fabrication Facility

(ANFF-SA) is helping SMEs identify and establish profitable, successful, and localised advanced manufacturing solutions.

Providing state-of-the-art micro and nanofabrication capabilities, ANFF-SA was established under the National Collaborative

Research Infrastructure Strategy to give industry, researchers and academics open-access to more than \$15M of cutting-edge equipment in state-of-the-art cleanrooms and laboratories.

Co-located at the University of South Australia's Mawson



Dr Chia-Chi Chien is transforming her lab technology so clinicians can test and deliver personalized drug combinations. The award-winning biomedical engineering researcher and founder of **Omniwell Pty Ltd**, sought support from ANFF-SA to optimise her fabrication process and mass production prototype for clinical validation.

"I love working with ANFF-SA...they are resourceful, wellconnected within the ecosystem and across local business," said Dr Chien. "Their advice has been crucial for getting me to think outside the box and led me to consider alternative methods to achieve my goal.' Lakes campus and Flinders University, ANFF-SA's professional technicians can be engaged to optimise fabrication processes, advance prototype development, or overcome manufacturing challenges or can deliver instrument training for SMEs to conduct their own technology development.

Director of ANFF-SA, Associate Professor Craig Priest, says SMEs are significant contributors to Australia's economic sustainability,

critical to our post-COVID 19 recovery and crucial in safeguarding our national sovereignty.

"Industry knowledge combined with ANFF-SA's willingness to try new approaches is integral in informing adventurous research projects," said A/Prof Priest. "Our clients know ANFF-SA is fully invested in translating their novel technologies for advanced manufacturing."

With a global reputation for delivering leading-edge technical solutions, ANFF-SA is also proud to enable compelling local industry-research success stories. Partnering with ANFF-SA has, quite literally, been a game changer for many Australian SMEs.

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Developing an efficient and scalable in-space electric propulsion system for satellites, **Neumann Space CEO**, Herve Astier says ANFF-SA is very useful to his company.

"ANFF-SA's technical knowledge, understanding of plasma material and equipment for microscopic imaging has been very helpful," said Herve. "It's good to be able to test, analyse and discuss the results with ANFF skilled resources and then come up with technical solutions and more innovation as we go."

The South Australian Node of the Australian National Fabrication Facility









Government

The creators of the world's first ultra-lightweight mobile x-ray imaging system, **award winning Adelaide-based company Micro-X**, worked with ANFF-SA to source critical components enabling them to manufacture high yield NEX tubes in-house.

Micro-X's research chemist, Susanne Sahlos, says their novel research and prototyping often require specialised surface treatments followed by assembly in a cleanroom.

"ANFF-SA's facilities are perfect for our requirements," said Susanne. "... ANFF-SA staff show real interest in our problems without compromising the confidential nature of our projects."



Dr Mona Elsemary, a ground-breaking researcher at the University of South Australia's Future Industries Institute, has developed a point-of-care device that can manufacture CAR-T cell therapy for blood cancer patients.

In collaboration with **local immunotherapy company**, **Carina Biotech** who have patented and licensed the technology, Dr Elsemary completed the device's prototyping and optimisation in ANFF-SA's stateof-the-art cleanrooms and is looking forward to the device's final prototyping for clinical validation prior to commercialisation.

"ANFF-SA has played a key role in the translation of my research, allowing the development of rapid prototypes without significant investment in capital equipment and facilities," said Dr Elsemary. "They provided the necessary training and are very friendly, knowledgeable and always happy to give advice and help make it happen."



At the University of South Australia's Future Industries Institute, A/Professor Craig Priest has collaborated with **Magotteaux Australia** to develop an ingenious device which has the potential to transform the minerals processing industry.

"Our miniaturised device delivers accurate and rapid onsite monitoring and analysis which can optimise recoveries and achieve better environmental outcomes," said A/Prof Craig Priest. "ANFF-SA was the cornerstone for this research with the glass chip fabricated in their world-class cleanrooms."





Revealing valuable "inside information", ANFF-SA helped to secure the global distribution of a micro-sized printed wire assembly (PWA) manufactured by **CircuitWorks Australia**.

The manufacturers of high quality, reliable electrical components required a fast, non-destructive method to inspect the internal circuitry of a PWA and director Bevan Illman immediately called ANFF-SA.

"Based on ANFF-SA's comprehensive 3D Micro-XCT reports and imaging of the PWA, our client began extensive electrical simulation and testing," said Bevan. "...our client modified the printed circuit board in the PWA and manufacturing proceeded. Everyone is happy!"



With technical expertise bridging gaps across industry and research disciplines, ANFF-SA can also facilitate scientific experts across the ANFF network to help SMEs achieve localised advanced manufacturing solutions.

For more information on how ANFF-SA can assist your next project contact Simon Doe today on 8302 5226 or visit anff-sa.com.

The South Australian Node of the Australian National Fabrication Facility

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