

Novel antimicrobial coating set to revolutionise wound management.



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Researchers on a mission to tackle the global menace of antimicrobial resistance have collaborated with the South Australian node of the Australian National Fabrication Facility (ANFF-SA) to develop a revolutionary antimicrobial coating for use in wound dressings and medical devices.

Leveraging the properties of Povidone, a widely recognised antiseptic found in common wound care products, Associate Professor Anton Blencowe and his team at the University of South Australia (UniSA) have developed a potent polymer-iodine nanoscale coating.

This innovative coating, which can be easily applied to diverse substrates like wound dressings, medical devices, and implants demonstrates remarkable efficacy against microbes and presents a compelling alternative for effective wound management.

A/Prof Blencowe is enthusiastic about the advancements his team is making in broad-spectrum antimicrobial materials. He attributes their success to exploring Povidone's properties as a stable nanoscale coating, his research team's dedication and perseverance and the specialised facilities and expertise available through ANFF-SA at UniSA's Mawson Lakes campus.

"Exhibiting substantial antimicrobial potency against diverse bacteria, including multidrug-resistant strains, our novel polymer-iodine nanoscale coatings are demonstrating a unique

ability to eradicate up to 99.99999 percent of microbes - which is pretty exciting," said A/Prof Blencowe.

"The composition of our coating supports precise tuning so medical professionals can regulate the loading and controlled release of iodine to eliminate microbes and aid the healing process."

"ANFF-SA played a pivotal role in custom designing and fabricating our micro-pillared quartz substrates for sample immobilisation, which facilitated our advanced coating analysis using their atomic force microscopy facilities."

**A/Prof Anton Blencowe,
University of South Australia.**

A/Prof Blencowe said ANFF-SA provided open-access to well-maintained analytical instruments, highly specialised facilities, and an experienced technical team to fabricate their novel substrates - which would otherwise be beyond their reach.

"ANFF played a pivotal role in custom designing and fabricating our micro-pillared quartz substrates for sample immobilisation, which facilitated our advanced coating analysis using their atomic force microscopy facilities," said A/Prof Blencowe.

"The technical team are awesome, very helpful and friendly, knowledgeable, and

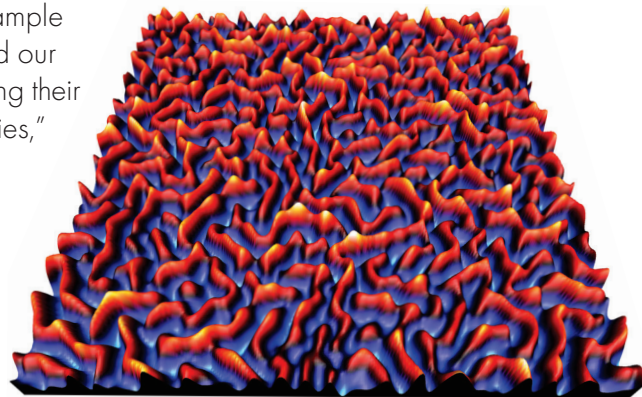
professional. They are experts in taking a rough description of an idea and coming up with an engineering solution to build a functional device."

Professor Craig Priest, Director of ANFF-SA, is thrilled to see the impactful collaboration between researchers and ANFF-SA in addressing the pressing issue of antimicrobial resistance.

"This revolutionary antimicrobial coating holds tremendous promise for enhancing wound management and combating multidrug-resistant bacteria, benefiting both human and animal health as well as the integrity of our global food supply chain," said Prof Craig Priest.

ANFF-SA is a world-class micro and nanofabrication facility providing open access to cutting-edge equipment housed in state-of-the-art facilities with support from world-leading experts.

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**South Australian node of the Australian National Fabrication Facility
University of South Australia, Mawson Lakes, SA, 5095 +61 8 8302 5226**