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Singapore creates Magnesium-based bioresorbable implant technology for surgeries

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SRS Life Sciences partners with NUS spin-off Magloy Tech to advance the global orthopaedic implant market



SRS Life Sciences, a global company headquartered in Singapore focused on lessening disease burden across emerging nations, and Magloy Tech, a spin-off from the National University of Singapore's Graduate Research Innovation Programme (GRIP), have joined forces to internationally further develop and commercialise bioresorbable magnesium implants for orthopaedics and trauma surgery.

The global orthopaedic implant market size is predicted to reach US$64.0 billion by 2026, fuelled by the rise of ageing populations. However, significant unmet needs remain for patients who undergo surgery with permanent bone implants and metal fixtures, with high rates of post-surgery complications and revision surgeries being required in approximately 12% of cases within some countries. Patients face as much as US$10,000 in additional costs for revision surgeries to remove implants.

With rigorous research & development (R&D), the team led by Associate Professor Manoj Gupta, Research & Development Director of Magloy Tech, has produced novel high-performance magnesium alloy implants that provide superior mechanical stability and bone support to facilitate the healing process. More importantly, the implants naturally and completely dissolve in the body over time, potentially rendering any revision surgery unnecessary.

Magloy Tech's bioresorbable implants are developed considering concerns associated with the use of bioresorbable magnesium alloys in clinical applications such as rapid degradation and usage of rare-earth alloying elements. The technology has the potential to provide surgeons and patients less complications compared to more traditional implants, as well as reduce the complication-associated burden on health systems such as refracture risks, anaesthesia risks and healthcare-associated infections (HAIs).

SRS Life Sciences and Magloy Tech's partnership will see the technology move into early-stage human trials in India this year with the aim of ultimately bringing the innovation to patients globally, starting with a South East Asia focus.

“Our partnership with Magloy Tech carries significant potential for the global medical device sector and for patients and health systems around the world,” said Suchet Rastogi, Group CEO, SRS Life Sciences.

Via the agreement, Magloy Tech and SRS Life Sciences will be joint owners of all intellectual property produced within the collaboration. The new generation implant will be developed for human use with the development programme designed to deliver approved human use from 2024.

Image Caption: ***Front (L-R):*** *Manoj Gupta, Co-founder of Magloy Tech and Associate Professor from the Department of Mechanical Engineering at the National University of Singapore’s Faculty of Engineering & Suchet Rastogi, Group CEO, SRS Life Sciences together with the Magloy Tech and SRS Life Sciences team.*