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JX Nippon Mining & Metals Corporation

Alloyed Successfully Designs and Manufactures an Ankle Implant Using Metal Additive Manufacturing

JX Nippon Metals & Mining Corporation (President: Murayama Seiichi; “the Company”) is delighted to announce that UK start-up Alloyed Limited (CEO: Michael Holmes), in which the Company has a 21.2% stake, has succeeded in designing and manufacturing an ankle implant (artificial bone) using metal additive manufacturing. The implant was customized and optimized for the individual patient, and in a procedure carried out on September 7, it has been implanted into a patient for the first time.

Established in 2017, Alloyed began as a spin-off venture of Oxford University in the UK. Its main business is designing alloys for metal additive manufacturing. Alloyed began development of medical implants in 2018 as one of the applications of its technologies, and it has also acquired ISO 13485 certification (an international standard applicable to quality management systems for medical devices). Development is being carried out in partnership with the Company and one of our Group companies, TANIOBIS GmbH.

Alloyed has focused on the development of ankle implants as a priority because this area can benefit from the advantages of metal additive manufacturing. Additive manufacturing can create complex shapes and ensure sufficient strength to withstand strong impacts, and implants can be manufactured in different sizes to suit individual patients. The recent successful procedure carried out at the Northern General Hospital in Sheffield, UK, marks the first time that an ankle implant designed and manufactured by Alloyed using additive manufacturing and titanium alloys has been implanted into a patient.

Alloyed intends to build upon this success to increase the use of its ankle joint implants in the future. It will also expand development into the design of implant types for other areas of the body to assist those suffering from bone cancer. Alloyed will leverage synergies with the Company and TANIOBIS to provide manufacturing solutions using more advanced, highly-functional metal materials.

<Reference>

Ankle implant designed by Alloyed

