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JX Advanced Metals Corporation

Development and Successful Testing of a New Additive Manufacturing (3D Printing) Microturbine by the Alloyed Group

JX Advanced Metals Corporation (President: Hayashi Yoichi, hereinafter “JX”) is pleased to announce that Alloyed Ltd. (CEO: Michael Holmes, hereinafter “Alloyed”), a UK-based startup in which JX has invested, and its group company Argive, have successfully developed and tested a new microturbine for defense applications utilizing advanced metal Additive Manufacturing (AM) technologies.

The Alloyed Group leverages its proprietary platform Alloys-by-Design® to combine alloy design with structural design, thereby advancing metal AM technology. A microturbine newly developed using this technology was mounted on a defense-use drone and an intercepting system, achieving successful flight and ground tests respectively. One of the key features of metal AM is integrated design, which reduces both the number of parts and overall weight, thereby enhancing reliability and significantly shortening the development cycle compared with conventional processes. These characteristics make the technology highly compatible with defense applications, as it enables both rapid development and manufacturing and stable operation in extreme environments, potentially redefining design concepts for next-generation defense equipment.

This achievement underscores JX’s commitment to further technological innovation through a joint project that integrates the alloy powder manufacturing technologies of JX and its group company TANIOWIS GmbH with the alloy design and process optimization capabilities of Alloyed. Through this project, JX will explore AM using its Nb (niobium)-based superalloys, which offer superior high-temperature performance, in order to further improve performance in extreme environments and enable high-precision fabrication of complex components.

JX Advanced Metals Group has long provided advanced materials with high reliability and functionality, underpinned by decades of technological development. These include products such as metal powders for AM, crystalline materials, and electromagnetic shielding materials, many of which are dual-use products that are not limited to civil applications but can also be used in the defense sector. Looking ahead, with the growing importance of national security, JX Advanced Metals Group intends to position defense as one of its strategic focus areas and will actively pursue initiatives in this field.

JX Advanced Metals Group will continue to accelerate the development of new manufacturing technologies and advanced materials, thereby delivering sustainable growth and creating social value that contributes to the national interest.