

October 14, 2025
JX Advanced Metals Corporation

Investment in EX-Fusion, Inc., a Laser Fusion Startup

JX Advanced Metals Corporation (President: Hayashi Yoichi, hereinafter “the Company”) has acquired shares issued by EX-Fusion, Inc. (CEO: Matsuo Kazuki, hereinafter “EX-Fusion”) in its Series A (Extension) funding round.

Today in our modern world, we rely heavily on fossil fuels for energy, and global warming caused by CO₂, the stable supply of energy, and improving energy self-sufficiency have become global challenges. Due to this background, various developments in renewable and next-generation energy sources are advancing globally. Among these, nuclear fusion power generation¹⁾ is rapidly gaining attention as a game-changer in the energy sector. This is due to its unique characteristics: the fuel, deuterium, can be obtained almost inexhaustibly from seawater; it yields more energy than is input; and no CO₂ emissions during power generation.

EX-Fusion is an Osaka University-spinoff startup aiming for the societal implementation of laser fusion power generation. EX-Fusion is accelerating research and development toward the realization of laser fusion reactors by leveraging proprietary technologies such as optical control technology, continuous feed systems, and high-power laser technology. EX-Fusion has successfully conducted high-precision operational tests of high-power lasers and achieved critical technological verification such as laser precision irradiation onto minute fuel particles, earning recognition as a world-leading pioneer in this field.

The Company has been collaborating with EX-Fusion to advance the technological development of our YAG²⁾ ceramics for laser applications (hereinafter “YAG ceramics”). In fusion systems, lasers that heat and implode fuel to sustain fusion reactions are one of the critical components, requiring various performance characteristics, such as high-power, high-durability and repeatability stability. YAG ceramics are expected to find applications due to their ability to accommodate large diameters and the homogenization of dopant elements within the crystal.

The Company is one of the few in the world capable of manufacturing high-performance YAG ceramics suitable for laser fusion applications. This capability stems from our expertise in handling raw powder materials and sintering technology, cultivated through the development and production of sputtering targets that hold a leading global market share. Until now, the Company has worked with EX-Fusion Inc. to enhance laser performance using YAG ceramics. Through this investment, we aim to further accelerate technological advancement, explore collaboration in materials surrounding fusion reactors, and contribute to the social implementation of laser fusion power generation.

Going forward, our company will continue to actively pursue product and technology development through co-creation with our partners. By proposing and providing innovative advanced materials, we will contribute to the realization of a sustainable society.



YAG Ceramics(6-inch diameter)

References

[More detail of YAG Ceramics is here.](#)

1) Nuclear fusion power generation is a technology that generates enormous amounts of energy by fusing light atomic nuclei together and utilizes this energy for electricity generation. Using deuterium and other elements found in seawater as the fuel, it is anticipated as a clean and sustainable energy source that does not emit CO₂ during power generation. The laser method (inertial confinement fusion) and magnetic confinement fusion are the primary approaches.

2) YAG, an abbreviation of Yttrium Aluminum Garnet, is a garnet-structured crystal composed of a composite oxide of yttrium and aluminum.

Overview of EX-Fusion (As of October 14, 2025)

Company Name	EX-Fusion, Inc.
Established	July 2021
Address	Osaka University Techno-alliance Building C C806 Yamadaoka 2-8 Suita, Osaka
Capital	JPY 1,239 million
Main contents	Development of high-power laser control systems, blankets, and target delivery systems for laser fusion. Development and consulting for laser processing equipment.
Official Website	https://en.ex-fusion.com/