



August 21, 2025

“Research and Development of a Metal 3D Printer System Combining Sinter-Based Additive Manufacturing and Digital Process Design” Adopted as a NEDO* Project

Taiyo Nippon Sanso Corporation (President: Kenji Nagata; hereinafter, "TNSC"), a member of the Nippon Sanso Holdings Group, has been selected for a NEDO project together with Yamaha Motor Co., Ltd. (lead organization), the Central Research Institute of Electric Power Industry, Kyushu University, Tokyo Metropolitan University, the National Institute of Advanced Industrial Science and Technology (AIST), Mitsubishi Materials Corporation, Metal Technology Co., Ltd., ASK Chemicals Japan Co., Ltd., and ExOne KK.

The adopted proposal, titled *“Research and Development of a Metal 3D Printer System Combining Sintered-Base Additive Manufacturing and Digital Process Design,”* was submitted under NEDO’s *Program for Developing Key Technologies for Economic Security* (commonly known as the “K Program”) / *Development and Demonstration of Advanced Metal Additive Manufacturing System Technology*. The project is scheduled to run for five years, from FY2024 through FY2028.

Note: The K Program is a government initiative that promotes R&D in technologies essential to ensuring and strengthening economic security.

Project Overview

The project will advance metal additive manufacturing using Binder Jetting Technology (BJT), which enables high-speed fabrication and eliminates the need for support materials. The goal is to achieve both high-speed and high-precision manufacturing.

Applications will include small-lot, multi-variety production of aluminum components for transportation equipment, heat-resistant parts for industrial plants, and molds, jigs, and tools. Key R&D themes include:

- Development of systems that flexibly determine optimal manufacturing conditions.
- Creation of new alloy powders and binder materials.
- Technologies for high-speed, high-density sintering and deformation prediction.

TNSC’s Role

Building on our expertise as a leading industrial gas company and our experience in metal additive manufacturing, TNSC will focus on developing technologies to optimize manufacturing parameters and creating systems that automatically identify the best processing conditions.

Through this project, we aim to establish production processes that apply metal additive manufacturing to mass-produced components such as transportation equipment and machine tools—enabling on-site production and rapid delivery of high-performance parts.

*NEDO: New Energy and Industrial Technology Development Organization

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