



September 5, 2025

Taiyo Nippon Sanso Corporation
Tottori University

**Adoption of the Joint Research Project: “Development of an Energy-Saving CO₂ Capture System
for Small- and Medium-Scale Emission Sources”**

**NEDO Program: “Program to Develop and Promote the Commercialization of Energy
Conservation Technologies to Realize a Decarbonized Society”**

The joint research project, “Development of an Energy-Saving CO₂ Capture System for Small- and Medium-Scale Emission Sources” (hereinafter, “the Project”), conducted by Taiyo Nippon Sanso Corporation (Head Office: Shinagawa-ku, Tokyo; President: Kenji Nagata; hereinafter “Taiyo Nippon Sanso”), a Japanese industrial gas business company in the Nippon Sanso Holdings Group, and Tottori University (located in Tottori City, Tottori Prefecture; President: Tasuku Harada; hereinafter “Tottori University”), has been adopted under the “Program to Develop and Promote the Commercialization of Energy Conservation Technologies to Realize a Decarbonized Society (Phase of Developing Practical Application)” program of the New Energy and Industrial Technology Development Organization (hereinafter, “NEDO”). The project period runs from July 4, 2025, through the end of March 2027.

1. Research Overview

The Project aims to develop an innovative CO₂ capture system with the aim of applying a new process. A CO₂ capture system that recovers and concentrates CO₂ is a fundamental technology underpinning CCUS (Carbon Capture, Utilization, and Storage). Taiyo Nippon Sanso has commercialized* a CO₂ capture system capable of recovering CO₂ at a concentration of over 98% from emission sources such as lime kilns. In addition, the company is engaged in research and development of technologies that enable the efficient recovery of low-concentration CO₂, not only from lime kilns, which had previously been the primary target, but also from sources such as flue gas from natural gas-fired boilers.

With regard to the adsorbent used for recovering CO₂ from emission sources, the Company is conducting joint research and development with Tottori University. Lecturer Nao Tsunoji, the hosting researcher for this joint project, specializes in the synthesis and application of porous materials used as adsorbents, and has an extensive record of publications and awards in this field. The Project will also build on the research outcomes of Taiyo Nippon Sanso in the development of CO₂ adsorbents for practical applications, conducted through the “Intensive Support Program for Young Promising Researchers,” one of NEDO’s grant programs, which was carried out through fiscal year 2024.

Taiyo Nippon Sanso and Tottori University will advance the development of the innovative CO₂ capture system with the aim of contributing to the achievement of carbon neutrality by 2050.

*: [Press Release dated March 31, 2023: “CO2 Recovery Equipment with Capacity for 10 Tons Per Day to be Launched in April”](#)

2. About the NEDO Program

The NEDO program, “Program to Develop and Promote the Commercialization of Energy Conservation Technologies to Realize a Decarbonized Society (Phase of Developing Practical Application),” is designed to support the development of technologies expected to deliver significant energy-saving effects by fiscal year 2040, with a focus on key technologies identified as priority areas in the “Energy Conservation Technology Strategy 2024.” The program aims to realize a decarbonized society in Japan while simultaneously strengthening industrial competitiveness. The Practical Application Phase focuses on the development of technologies that build upon existing energy-saving technologies and expertise already possessed by companies, universities, and other institutions, with the aim of promoting their application and adaptation.

Taiyo Nippon Sanso Corporation

Tnsc.Info@tn-sanso.co.jp

Tottori University

toridai-kouhou@ml.adm.tottori-u.ac.jp