

# Development and Demonstration of a Compact and High-Efficiency Carbon Dioxide Capture System Using Membranes (OOYOO Ltd.)



City	Year of Establishment	Founder
Kyoto, Kyoto Prefecture	2020	Easan Sivaniah

Partner VC	Latest round of Fundraising	Valuation
Kyoto University Innovation Capital Co.,Ltd. (KYOTO-ICAP)	Seed round	Non-Disclosure

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○ Business Plan

OOYOO is a deep-tech startup originating from Kyoto University, dedicated to creating technologies that realize a carbon-neutral society 'faster, lighter, and smarter.' Founded by Professor Ethan Shivanian (Kyoto University, Center for Material Cell Systems), the company's gas separation membrane technology enables the separation of various gases, with a particular focus on high separation performance for carbon dioxide (CO2). OOOO aims to contribute to the creation of a decarbonized society on a global scale.

○ Research Outline

In this research and development, we aim to improve the performance of CO2 separation membranes and separation membrane modules, as well as scale up the currently developed system capable of capturing 100 kg/day of CO2. Furthermore, by achieving the PoC listed below, we aim to realize a system capable of capturing 10 tons/day of CO2, which is 100 times the current scale ("OOYOO BOX (tentative)").

1. Development of a separation process that maximizes the performance of high-performance separation membranes – from the development and demonstration of a 10 tons/day CO2 capture system.
2. Improvement of separation membrane modules that are compatible with the storage requirements of the OOOO BOX (tentative) and can fully utilize the performance of the separation membranes.
3. Improvement of separation membranes to accommodate a variety of gas compositions..

Business Area/Field	Research Period	Research Grant Amount	International collaborative technology demonstration
Energy & Infrastructure	PCA 2024～2026FY	JPY 894 million	The United States, Europe, and Asian countries, etc.

○International collaborative technology demonstration

- Relationship development with potential local partner

We have entered into a partnership agreement with Arkema S.A. (France) and will jointly work on the development of high-performance gas separation membrane technology for CO2 capture. In the near future, we will actively engage in business development by collaborating with local partners in European countries and the United States, where the credit trading market for CO2 capture is more mature. We aim to bring the knowledge and expertise gained in overseas markets back to Japan, accelerate domestic business expansion, and strengthen our global market competitiveness. By participating in international exhibitions and leveraging the global network of our management team, we aim to enhance our presence in European countries and the United States, and eventually in Asian countries, where the CO2 capture market is expected to expand.