

21/6/2024

**Carbon Xtract Corporation  
Tokyo Ohka Kogyo Co., Ltd.**

**Carbon Xtract and Tokyo Ohka Kogyo Conclude Joint Development Agreement for the  
Early Practical Implementation and Commercialization of a System for Membrane-based  
Direct Air Capture Technology**

Carbon Xtract Corporation (“Carbon Xtract”) and Tokyo Ohka Kogyo Co., Ltd., (“TOK”) have signed a joint development agreement for the early-stage practical implementation of a system to enable direct capture of carbon dioxide from the atmosphere (Direct Air Capture, "DAC") using gas separation membranes.

The specific role of both companies is that TOK will be responsible for developing and manufacturing membranes with an eye toward future mass production, while Carbon Xtract will be responsible for evaluating membranes and developing and manufacturing equipment using such membranes.

In recent years, technology for separating and capturing CO<sub>2</sub> for the purpose of reducing greenhouse gases has been the focus of growing attention. Carbon Xtract and TOK are committed to the rapid development of membrane-based Direct Air Capture, (“m-DAC®” \*1) for mass production by combining their respective technologies and know-how to meet the needs of the global society.

(Reference)

Overview of Carbon Xtract Corporation

Corporate name	Carbon Xtract Corporation
Representative	Tetsuo Moriyama
Established	May 26, 2023
Website	<a href="https://c-xtract.com/">https://c-xtract.com/</a>

Carbon Xtract is a startup established through cooperation among Kyushu University, Nanomembrane Co., Ltd.\*2 and Sojitz Corporation. Carbon Xtract has been promoting the

early-stage practical implementation of DAC technology using nano-level thin gas separation membranes, which Kyushu University has been researching and working on over the course of several years, as well as of technology for utilizing captured CO<sub>2</sub>. m-DAC<sup>®</sup> is an innovative world-first technology that allows the capture and concentration of CO<sub>2</sub> simply by filtering air through a membrane, and which, when put to practical use, will make it possible to capture CO<sub>2</sub> directly from the atmosphere in a variety of locations.

#### Overview of Tokyo Ohka Kogyo Co., Ltd.

Corporate name	Tokyo Ohka Kogyo Co., Ltd.
Representative	Noriaki Taneichi
Established	October 25, 1940
Website	<a href="https://www.tok.co.jp">https://www.tok.co.jp</a>

TOK is one of the leading manufacturers of semiconductor photoresists. It has been conducting business in the field of fine chemicals with its microprocessing and high purity processing technologies. Leveraging its highly flexible development capabilities acquired in the semiconductor sector, it has refined products and technologies and boldly taken on new development themes, and it has conducted joint research and development on membranes with Kyushu University and Nanomembrane Co., Ltd. even prior to the establishment of Carbon Xtract (May 2023).

#### (\*1) “m-DAC<sup>®</sup>” DAC technology using separation nanomembranes

A technology that allows to capture carbon dioxide (CO<sub>2</sub>) directly from the atmosphere. m-DAC<sup>®</sup>, which is being researched and developed by Kyushu University, is a method for recovering CO<sub>2</sub> simply by filtering air through membranes. Its distinctive feature is the use of separation nanomembranes that are extremely permeable to CO<sub>2</sub> compared to conventional CO<sub>2</sub> separation membranes.

#### (\*2) Nanomembrane Co., Ltd.

A materials venture company established with the purpose of exploring the practical applications of giant nanomembranes, the result of research conducted by the Riken Institute, into practical technology.