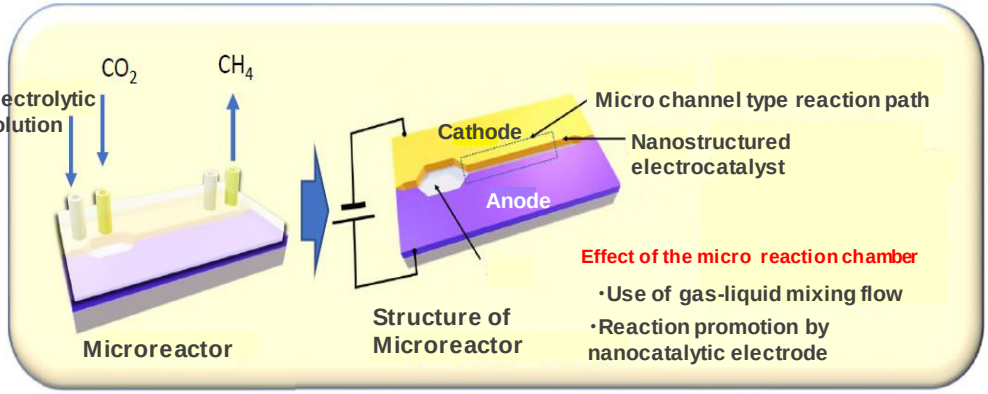
Tohoku Univ. Technology

Gas reduction device

Nanotechnology enables highly efficient gas reduction



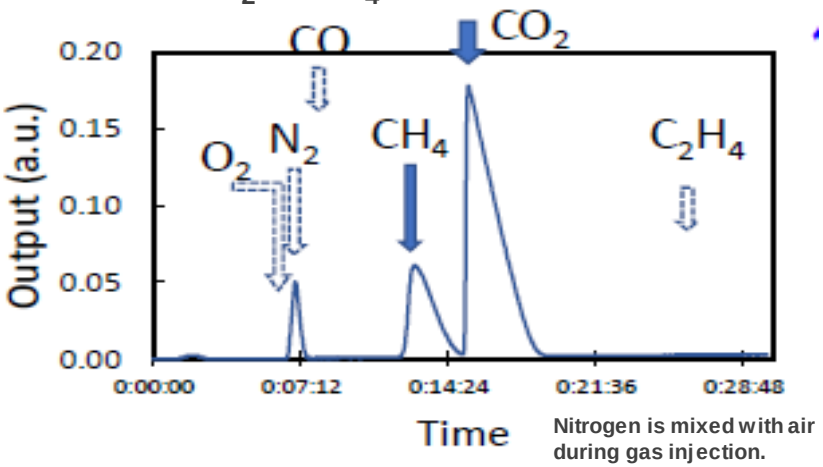
Overview

One of the carbon dioxide reduction technologies is an electrochemical method. This method has the advantage that the reaction occurs at room temperature and pressure and does not require a hydrogen gas supply, but has not been put to practical use due to its low reaction efficiency. The present invention relates to a gas reduction device which can increase reaction efficiency more than the conventional one by using micro reaction space with a nano-catalytic cathode and a gas-liquid mixture flow in a microchannel.

The gas reduction microreactor was fabricated and its ability to reduce carbon dioxide to methane was measured (right panel). It was demonstrated that highly efficient gas reduction is possible using the microspace and nano-catalytic cathode.

Performance Evaluation of Gas Reduction Reactor (Gas Chromatography)

Reduction of CO_2 to CH_4



Nitrogen is mixed with air during gas injection.

Product Application

- Gas reduction device (carbon recycling)

Related Works

IP Data

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