

# Resource Circulation

**R&D Project Title: Pioneering an Innovative Catalytic Process for Mass Production of Valuable Resources from CO<sub>2</sub> Cultivation**

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## Summary :

**Objective:** Develop an innovative carbon cultivation-type catalytic conversion process to efficiently and massively produce valuable carbon resources (fuel CH<sub>4</sub>, syngas, hydrocarbons, carbon-based functional materials) from greenhouse gases (GHG) such as CO<sub>2</sub>, and promote its social implementation.

## Challenges to Address:

- Establish a catalytic process for carbon recycling and decarbonization through carbon cultivation from CO<sub>2</sub>.
- Implement e-Reaction (electrically excited) systems in each catalytic conversion stage of the above process.

## Scenario for Contribution to Carbon Neutrality:

This research aims to contribute to carbon neutrality at the social implementation level by achieving the following goals: (1) Convert low to high concentration CO<sub>2</sub> exhaust gas directly into large quantities of CH<sub>4</sub> and syngas without separation and concentration. (2) Mass-produce (capture) solid carbon from CO<sub>2</sub> gas and utilize it as functional carbon materials.

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