

## List of selected R&D projects, project managers, and implementation system

### (1) Development of technologies to recover greenhouse gases (“GHGs”) and convert them into valuable materials

R&D Projects	Project Managers	Implementation System
Development of an atmospheric CO <sub>2</sub> recycling biotechnology by creating electricity-utilizing CO <sub>2</sub> -fixing bacteria and gas-phase reaction systems	Dr. KATO Souichiro, National Institute of Advanced Industrial Science and Technology (AIST)	- National Institute of Advanced Industrial Science and Technology (AIST) - Tokyo Institute of Technology - Nagoya University
Development of highly efficient direct air capture (DAC) and carbon recycling technologies	Dr. KODAMA Akio, Kanazawa University	- Kanazawa University - Research Institute of Innovative Technology for the Earth (RITE)
Integrated electrochemical systems for scalable CO <sub>2</sub> conversion to chemical feedstocks	Dr. SUGIYAMA Masakazu, The University of Tokyo	- The University of Tokyo - Osaka University - Institute of Physical and Chemical Research (RIKEN) - Ube Industries, Ltd. - Shimizu Corporation - Chiyoda Corporation - Furukawa Electric Co., Ltd.
Research and Development Project on C <sup>4</sup> S (Calcium Carbonate Circulation System for Construction)	Dr. NOGUCHI Takafumi, The University of Tokyo	- The University of Tokyo - Hokkaido University
Research and development for “Cryo-DAC” - a frugal approach for direct air capture with available cold energy -	Dr. NORINAGA Koyo, Nagoya University	- Nagoya University - Toho Gas Co., Ltd. - Tokyo University of Science
Development of Combined Carbon Capture and Conversion (quad-C) modules targeting low carbon dioxide concentration gases for balancing the global carbon budget	Dr. FUKUSHIMA Yasuhiro, Tohoku University	- Tohoku University - University Public Corporation Osaka - Renaissance Energy Research Corporation
Development of Global CO <sub>2</sub> Recycling Technology towards “Beyond-Zero” Emission	Dr. FUJIKAWA Shigenori, Kyushu University	- Kyushu University - Kumamoto University - Hokkaido University

Mitigation of greenhouse gas emissions from agricultural lands by optimizing nitrogen and carbon cycles	Dr. MINAMISAWA Kiwamu, Tohoku University	- Tohoku University - National Agriculture and Food Research Organization (NARO) - The University of Tokyo
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**(2) Development of technologies to recover nitrogen compounds and convert them into harmless or useful materials**

<b>R&amp;D Projects</b>	<b>Project Managers</b>	<b>Implementation System</b>
Innovative circular technologies for harmful nitrogen compounds	Dr. KAWAMOTO Tohru, National Institute of Advanced Industrial Science and Technology (AIST)	- National Institute of Advanced Industrial Science and Technology (AIST) - The University of Tokyo - Waseda University - Tokyo University of Agriculture and Technology - Kobe University - Osaka University - Yamaguchi University - Kyowa Hakko Bio Co., Ltd. - ASTOM Corporation - Toyobo Co., Ltd. - FUSO Corporation - Ube Industries, Ltd.
Development of recovery, removal and utilization techniques of dilute reactive nitrogen to realize nitrogen circulating society	Dr. WAKIHARA Toru, The University of Tokyo	- The University of Tokyo - National Institute of Advanced Industrial Science and Technology (AIST) - Japan Fine Ceramics Center (JFCC) - Mitsubishi Chemical Corporation

**(3) Development of marine biodegradable plastics which can control the timing and speed of their degradability**

R&D Projects	Project Managers	Implementation System
Development of multi-lock biopolymers degradable in ocean from non-food biomass	Dr. ITO Kohzo, The University of Tokyo	<ul style="list-style-type: none"> <li>- The University of Tokyo</li> <li>- Mitsubishi Chemical Corporation</li> <li>- Bridgestone Corporation</li> <li>- Teijin Limited</li> <li>- Kureha Corporation</li> <li>- Kyushu University</li> <li>- Nagoya University</li> <li>- Yamagata University</li> <li>- Research Institute of Innovative Technology for the Earth (RITE)</li> <li>- National Institute of Advanced Industrial Science and Technology (AIST)</li> <li>- Ehime University</li> <li>- Tokyo Institute of Technology</li> </ul>
Research and development of marine biodegradable plastics with degradation initiation switch function	Dr. KASUYA Ken-ichi, Gunma University	<ul style="list-style-type: none"> <li>- Gunma University</li> <li>- The University of Tokyo</li> <li>- Tokyo Institute of Technology</li> <li>- Institute of Physical and Chemical Research (RIKEN)</li> <li>- Japan Agency for Marine-Earth Science and Technology (JAMSTEC)</li> </ul>
Development of photoswitching ocean-degradable plastics with edibility	Dr. KANEKO Tatsuo, Japan Advanced Institute of Science and Technology	<ul style="list-style-type: none"> <li>- Japan Advanced Institute of Science and Technology</li> <li>- Kobe University</li> <li>- Nagoya University</li> <li>- Kagoshima University</li> <li>- Tokyo University of Science</li> <li>- Tokyo University of Agriculture and Technology</li> <li>- National Institute of Advanced Industrial Science and Technology (AIST)</li> <li>- Osaka Research Institute of Industrial Science and Technology (ORIST)</li> </ul>