

# Innovation in manufacturing for a new sustainable resource recycle

**Establishment of integrated circular manufacturing system by product lifecycle management and innovative dismantling technology development**

**Project Leader :** Chiharu TOKORO

Professor, Faculty of Science and Engineering, Waseda university

**R&D Team :** Tokyo Institute of Technology, Tohoku University, The University of Tokyo, Tokyo Zokei University, Japan Productivity Center, Tokyo Robotics, etc.



## Summary :

A novel integrated circular manufacturing system that integrates production and venous industry will be established. To choose the best lifecycle options (e.g. reuse, recycle), innovative technologies like electric disintegration and other automated methods will replace human resources for the dismantling of modules and parts from any product. Additionally, the most suitable dismantling technologies will be categorized for each product, based on its characteristics of joining form and lifecycle option.

The objective to predict by simulation is that the optimal lifecycle options of any product with a model to estimate the residual value of materials will be constructed. Our goal is to demonstrate that this kind of integrated circular manufacturing system can be a feasible and sustainable business model that can maximize the resource efficiency.

The implementation of this system would lead to a novel resource efficiency in Japan and would result in the boosting of Japanese manufacturing industries.

