IRCSM

International Research Center for Sustainable Materials

[Materials for realizing a sustainable society]

Established on April 1, 2004, for a six-year period,
and reorganized on April 1, 2010, for a six-year period
Director: Toru H. OKABE
http://susmat.iis.u-tokyo.ac.jp/

This center was established for realizing a sustainable society by resolving issues related to the design, production, treatment, and final disposal of materials. The activities of the center include the following:

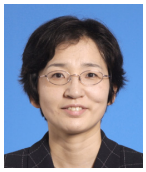
i) Inspecting the recycling processes of industrially important materials and their byproducts.
ii) Identifying boundary conditions for the design, production, and disposal of materials.
iii) Developing new materials with extra-long lifespans and low environmental loads, such as polymers.

This center promotes collaborative research in Japan as well as abroad.

Director

T. H. Okabe, Prof.

Deputy Director



N. Yoshie, Prof.

M. Maeda, Prof.

Y. Mitsuda, Prof.

K. Morita, Prof.

K. Edagawa, Prof.

T. Yoshikawa Associate Prof.

K. Sawada, Visiting Prof.

T. Nakamura, Visiting Prof.

S. Owada, Visiting Prof.

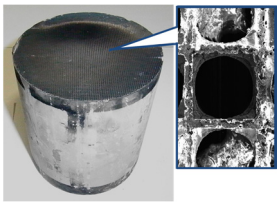
K. Yamaguchi, Visiting Prof.

A. Shibayama, Visiting Prof.

Research topics

Materials Flow and Recycling Division:
– Design of Materials Flow and Control of Process –

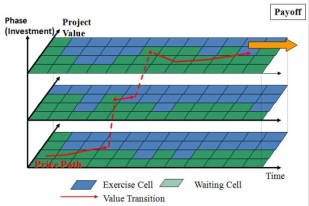
- Process development based on international material flow
- Analysis of hazardous substance flow in processes
- Development of recycling process for exhaustible resources
- Improvement of production technologies for base metals



Recovering of PGMs from auto scraps

Mineral Economics Division:
– Evaluation of Sustainability for Resources Supply and Market –

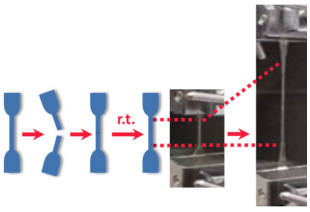
- Determining supply-chain and resources issues in the minerals industry
- Modeling of extra-long-term supply and demand of resources
- Determining the environmental-impact indicators of mining development



Option-pricing method for multistage investment of resources development

Sustainable Materials Design Division:
– Sustainability and Multiplicity of Energy and Materials –

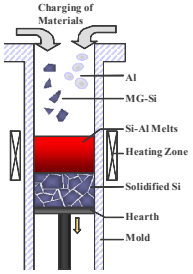
- Development of polymers with reduced environmental load and of chemical technologies for biomass utilization
- Mechanical properties of environmentally sound materials
- Development of new photonic materials



Self-healing polymer based on reversible bond formation

Sustainable Materials Processing Division:
– Planning Concept and Strategy of Production Process –

- Development of ultra-long-life materials
- Atomistic optimization for extending materials life
- Optimization of waste treatment of huge amounts of structural materials
- Establishment of recycling technology and system for valuable materials



Solidification refining process for solar grade Si