

OGURA LAB.

[Molecule-sized Nano Space and Catalysis]

Institute of Industrial Science, Department of Materials and Environmental Science

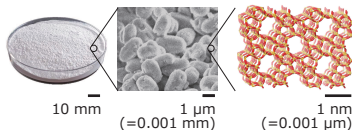
Environmental Catalysis, Materials Chemistry

Department of Chemical System Engineering

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Nano Space and Catalysis

Our research group tackles on the environmental, and resources and energy problems using nano porous materials.



Nano-sized space allows us to...
e.g.,)

- Store and concentrate materials and energy
- Capture harmful chemicals
- Select or sieve molecules by their size and chemical properties
- Anchor the catalytic site in the nano space
- Catalyze space-selective reactions

Unique Adsorbent

Unique Catalyst

➡ Create The Truly Useful Catalysts via A Design of Nano Space Reaction

Approaches in Ogura Lab

Environment

- Automobile catalyst
- Exhaust gas purification
- deNOx
- Concentration of toxic substance
- Soot combustion

New suggestions

- Nitrogen-cycle
- Academic²-industry² cooperation

Resources

- C1 conversion
- Olefins production
- CO₂ conversion
- Partial oxidation
- Jet fuel

New catalysts

- Hetero-atom
- Base catalytic site
- Hierarchical material

Energy

- Thermal energy storage
- Heat release-store

