

# OGURA LAB.

## [Molecule-sized Nano Space and Catalysis]

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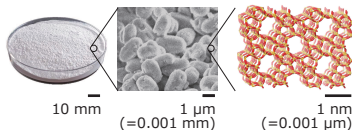
Environmental Catalysis, Materials Chemistry

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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
- Academic<sup>2</sup>-industry<sup>2</sup> cooperation

#### Resources

- C1 conversion
- Olefins production
- CO<sub>2</sub> conversion
- Partial oxidation
- Jet fuel

#### New catalysts

- Hetero-atom
- Base catalytic site
- Hierarchical material

#### Energy

- Thermal energy storage
- Heat release-store

