

Bio-inspired chemical conversion systems for green transformation

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Research Area

Biochemical conversion: excellent reactions in nature

- High efficiency
 - High selectivity
 - Green process
- Understanding of mechanisms on biological reactions

Photosynthesis: Efficient solar energy conversion

Enzymes: Excellent catalyst

⇒ Providing useful information for bio-inspired chemical conversion

Bio-inspired chemical conversion

- Developments of chemical conversion systems for green transformation
- Utilization of solar energy

Artificial photosynthesis

Artificial enzyme

⇒ Contribution to resolve energy, resource, and environmental problems

Recent Activities

- Spectral features and excited state dynamics of carotenoid in B800-depleted light-harvesting complex 2. *The Journal of Physical Chemistry Letters* **23**, 871-879 (2025).
- Photocatalytic CO₂ reduction sensitized by a special-pair mimic porphyrin connected with a rhenium(I) tricarbonyl complex. *Chemical Science* **13**, 9861-9879 (2022).