Ru-Re Supramolecular Complex Photocatalyst Capable of Efficiently Reducing CO\textsubscript{2} to CO

Advantages

- Reduces CO\textsubscript{2} to CO in a wide range of visible light
- Supramolecule with a Re(I) complex as a catalyst and a Ru(II) complex as a sensitizer
- High quantum yield for CO formation (Φ\textsubscript{CO} = 0.15) and turnover number (TN\textsubscript{CO} = 207), photostability

Recently, more and more studies on artificial photosynthesis, in which carbon dioxide is converted into chemical resources by using solar light, have been performed. As part of these studies, the research on photocatalyzed CO\textsubscript{2} reduction into CO has drawn increasing attention.

A novel Ru-Re supramolecular photocatalyst, Ru-Re(FPh) [R0100], which was developed in the Ishitani Laboratory, combines the Re complex, which can efficiently reduce CO\textsubscript{2}, with the Ru complex, which is an excellent photosensitizer, thus it can reduce efficiently CO\textsubscript{2} to CO using a wide-range of visible light. In addition to its photostability, R0100 exhibits tremendous photocatalytic properties (quantum yield of CO formation = 0.15; turnover number of CO formation = 207).


Ru-Re(FPh) 50mg [R0100]

This product is commercialized under instruction by Prof. Osamu Ishitani.

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