

Artificial photosynthesis



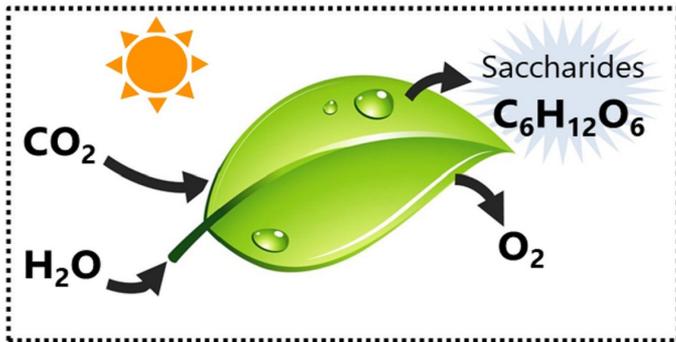
Background

The NTT Group is promoting research and development related to IOWN and decarbonization in order to achieve carbon neutrality. In order to reduce CO₂ emissions, NTT is working on artificial photosynthesis technology that uses particularly long-life semiconductor photocatalysts and metal catalysts.

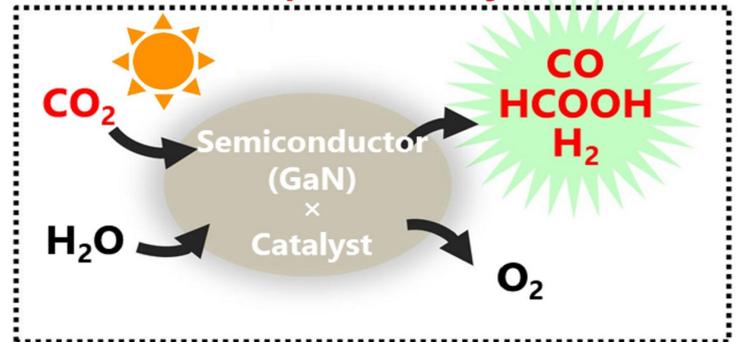
Summary

By using a protective layer on NTT's high-quality optical semiconductors, we have achieved world-class stable continuous operation. In addition, we also discovered an electrode structure that allows CO₂ to be converted while it is still a gas and succeeded in converting a large amount of CO₂.

Plant photosynthesis



Artificial photosynthesis



Features

- By making the surface of GaN, a semiconductor photocatalyst, more uniform and forming a 2nm NiO protective layer, electrode deterioration is significantly suppressed
- By improving the quality of InGaN, which can absorb sunlight with longer wavelengths, we have succeeded in achieving both more efficient use of solar energy and stable operation
- In contrast to the method of converting dissolved CO₂ in liquid, we succeeded in converting more CO₂ by finding an electrode structure capable of converting CO₂ in a gaseous state

Future benefits

As one of the technologies to reduce CO₂ in the atmosphere, it contributes to the suppression of climate change and contributes to the realization of a sustainable society.

Exhibiting Company

NIPPON TELEGRAPH AND TELEPHONE CORPORATION

Contact

rdforum-exhibition@ml.ntt.com