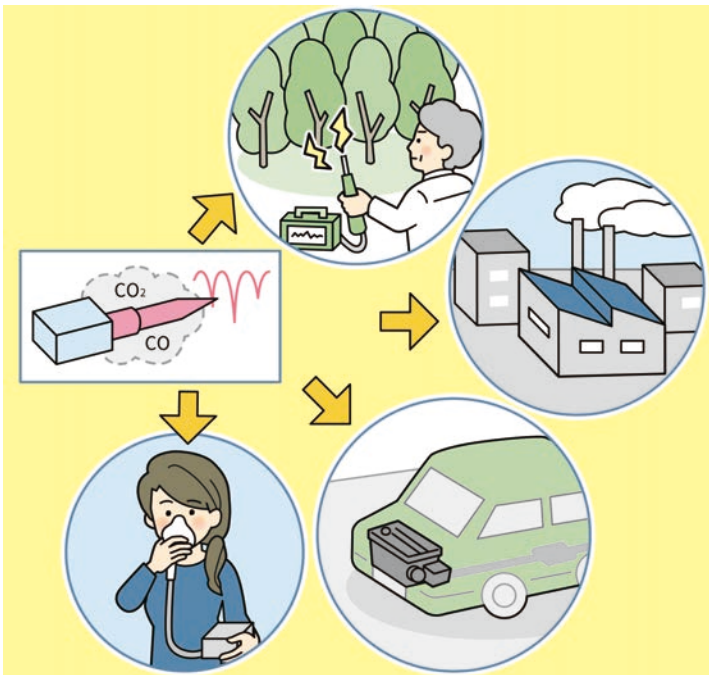




Precise measurement of CO₂ gas properties using semiconductor laser



Background

Distributed feedback laser has been used for gas sensing, but its tunable wavelength range is narrow, and high-speed wavelength sweeping is not possible. Therefore, it's not possible to precisely measure the CO₂ concentration under severe conditions (combustion and explosion).

Summary

Since the 2- μm distributed Bragg reflector laser can sweep ~ 5 nm at ~ 10 kHz, it can measure the CO₂ concentration even in under severe conditions in equipment such as engines and incinerators. Thus, it can improve combustion efficiency and reduce greenhouse gases.

Feature 1

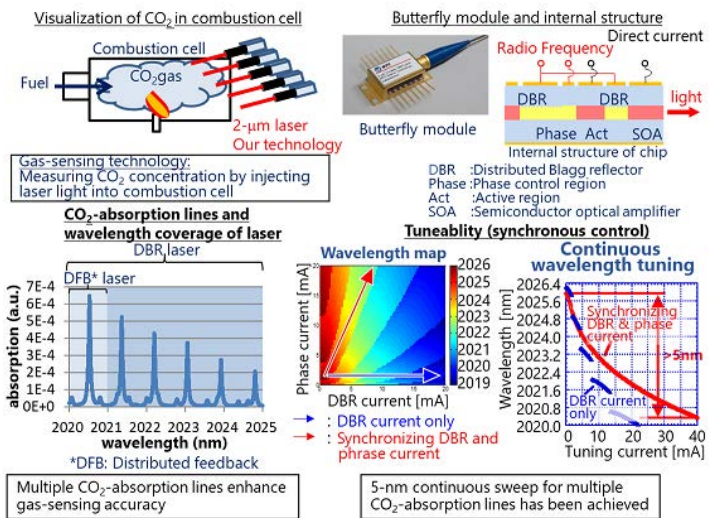
5-nm wavelength sweep can detect multiple CO₂ absorption lines

Feature 2

5-nm wavelength sweep can detect multiple gas species

Feature 3

High-speed wavelength sweep can measure CO₂ concentration even under severe conditions such as combustion and explosion



Future benefits

By improving combustion efficiency of engines and incinerators, we can reduce greenhouse gases. We can curb global warming and provide a comfortable living environment for future generations.

Collaboration partners

Tokushima University

Exhibiting Company

NIPPON TELEGRAPH AND TELEPHONE CORPORATION

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