

Use Of Hydrogen Produced Through Exhaust Heat Recovery For Nox Reduction

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ABSTRACT

The present Invention relates to the Exhaust heat recovery (EHR) method with hydrogen selective catalyst reduction (HSCR) method that helps in NO_x reduction and improving the economy by supplying extra hydrogen as supplementary fuel in internal combustion engine. EHR methods are used to recover exhaust heat and produce electrical power output. This electricity is used for electrolysis process and produce hydrogen. Some part of produced Hydrogen reacts with NO_x and reduces it into nitrogen. Remaining part of H₂ is sent to inlet manifold as supplementary fuel. Oxygen produced during electrolysis may be used to improve the fuel combustion efficiency.

KEY APPLICATION AREAS

1. Automotive emission control.
2. Internal combustion engines.
3. Exhaust heat recovery systems.
4. Hydrogen energy systems.
5. Clean transportation technologies.

POTENTIAL USE

1. NO_x reduction in diesel and IC engines.
2. Hydrogen-assisted dual-fuel operation.
3. Waste heat-to-hydrogen energy conversion.
4. Fuel economy improvement.
5. Cleaner commercial and industrial vehicles.