

عنوان مقاله:

Application of hydrogen and reformer gas in SI engines: EGR dilution limit enhancement

محل انتشار:

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خلاصه مقاله:

A combination of high laminar burning velocity and high octane number makes hydrogen a favorable blending additive for IC engine applications. Hydrogen has been examined with various base fuels for improving cold start behavior, enhancing anti-knock characteristics and extending the dilution limit of lean burn engines. As an alternative to pure hydrogen, reformer gas is a highhydrogen fuel gas which can be produced from any base hydrocarbon fuel using catalytic techniques, (such as partial oxidation or autothermal reforming). Fuel reforming involves energy losses and the hydrogen concentration and reforming efficiency varies depending on the base fuel, reforming technique and reformer operating parameters. However, the energy loss involved in reforming a base fuel might be offset by improvements in engine operating efficiency achievable with reformer gas blending. This paper reports on an experimental study where reformer gas with fixed mixture composition was used to enhance EGR tolerance limit of a natural gas engine to achieve extremely low NO_x and high efficiency while keeping the mixture at stoichiometric .air/fuel ratio enabling use of a regular 3-way NO_x catalytic converter

کلمات کلیدی:

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