第 132 回定例研究会 資料 Ⅱ



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Development of an ultra compact CPOX reactor for diesel fuel

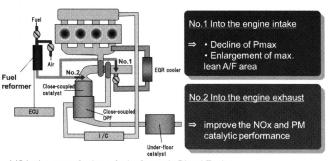
Go Motohashi Hitoshi Mikami Jun Iwamoto **Subir Roychoudhury**

- Honda R&D Co., Ltd.
- Honda R&D Co., Ltd.
- Honda R&D Co., Ltd.
- Precision Combustion, Inc.



Needs of fuel reformer in Diesel

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L/O in the case of using a fuel reformer in Diesel Engine

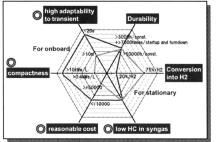
Use of fuel reformer is one of most efficient techniques for improving both fuel consumption and emissions.



Reactor Concept

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Comparison of requirement between on-board and stationary



Fuel reformer for fuel cell for stationary (PEFC) >1000h

On-board reformer needs to be designed by different concept than stationary.

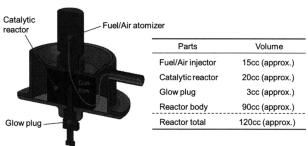
Two features of our reforming reactor:

- 1. Waterless CPOX w. a radial configuration
- 2. A novel fueling strategy capable of operating under rapid transients.

Reactor Design

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Feature1. waterless CPOX via a radial configuration.



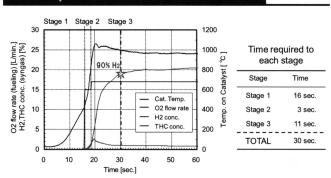
Schematic diagram of a radial flow dry CPOX reforming reactor.

The reforming reactor was extremely compact and low cost!



Start-up Performance

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Start up performance behavior of dry CPOX

The reactor also was capable of fast start-up (~30 sec.)

