

# DIESEL REFORMERS FOR ON-BOARD HYDROGEN APPLICATIONS

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## **ABSTRACT**

Many solutions to meeting the 2007 and 2010 diesel emissions requirements have been suggested. On-board production of hydrogen for in-cylinder combustion and exhaust aftertreatment provides promising opportunities for meeting those requirements. Other benefits may include using syngas to rapidly heat up exhaust after-treatment catalysts during engine startup.

Hydrogen Source's development of a catalytic partial oxidation reformer for generating hydrogen from ultra-low sulfur diesel fuel will be presented.

The system can operate on engine exhaust and diesel fuel with no water tank. Test data for hydrogen regeneration of a lean NO<sub>x</sub> trap will be presented showing 90 percent NO<sub>x</sub> conversion at temperatures as low as 150°C and 100 percent conversion at 300°C. Finally, additional efforts required to fully understand the benefits and commercial challenges of this technology will be discussed.