

Title: Recent Progress in Developing Reliable, Cost Effective Fuel Processors.

Abstract:

Precision Combustion, Inc. (PCI) is developing ultra-compact Fuel Processing systems for a range of Fuel Cells and industrial applications. Towards this end PCI is currently funded by, among others, the Navy, Army and the DOE. The DOE SBIR effort is currently at a Phase II Enhancement stage wherein a standalone 5 kW(th) Diesel Fuel Processor incorporating water neutrality, sulfur cleanup, controls, and Balance of Plant (BOP) components with low parasitics are being developed and readied for commercial release. Additionally, in collaboration with DOE, pyrochlore catalysts (originally developed at DOE Morgantown) supported on Microlith[®] are being developed for implementation in these Fuel Processors. This permits further lowering of fuel reformation costs. Long-term evaluation (from 100's to 1000's of hours) of various Fuel processing components is also being examined.

PCI has been developing Fuel Reforming solutions that include Catalytic Partial Oxidation (CPOX), Auto Thermal Reforming (ATR) and Steam Reforming (SR) approaches. These range in size from 1 kW(th) to 5 MW(th). The compact size permits these reformers to have low capital costs. The ability to operate with a range of distillate, gaseous and bio-fuels makes them versatile. The poster will highlight the state of progress of these PCI reformers, including data and brief description of industrial units as well as developmental hardware that meet commercially viable targets for large and small power generators, including APU's, and industrial uses.

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