Plasma Technology for Emission Control

Technology Overview

- Plasma reactor as a burner / reformer is based on the rotating arc technology
- Plasma burner is small (< 500cc) energy efficient (< 50W) device
- The same reactor can be operated as burner (heating) and reformer (H2)
- Applications for DPF filter regeneration and SCR thermal management
- Proven technology (> 80,000km field test and certificate of German register)

Core Technologies

- Rotating arc technology (Volumetric arc with mid temperature)
- Effective heating / vaporization / reaction inside the reactor (Compact size)
- Commercialized level of components development

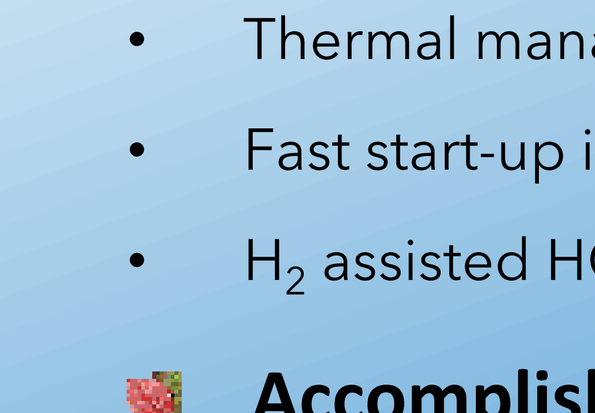
Application Area and Advantages

- Regeneration of DPF filter (Stable flame in all of RPM/Load condition)
- Thermal management / catalyst regeneration of low temperature SCR
- Fast start-up in cold start condition emission control
- H_2 assisted HC / Urea SCR by partial / full reforming of fuel / reductant

Accomplishments

- Commercialization in rail machine DPF regeneration (~2009)
- More than 60 patents in related technology, 6 international journal article (SCI), 4 Technology transfer

2.5 ton truck



812 hp-rail machine