



# Technology Opportunity

## Hypergolic Ignitor Design Reduces Cost and Pressure

Innovators at NASA's Marshall Space Flight Center have patented a low-cost, low-pressure hypergolic liquid ignitor assembly for the agency's MC-1 rocket engine. Typically, a hypergolic ignitor dispenses fluid through an injector into a combustion chamber, where it is ignited. This new design introduces the use of purge grooves, providing side chamber injection of fluid directly to the combustion chamber, reducing the complexity of the injector. The invention provides a system of rupture disc assemblies that enable the force to drive pistons for fluid delivery into the combustion chamber. The rupture discs preferably are interchangeable and located so that any leaks remain within the ignitor.

## Benefits

- **Robust:** Modular construction allows for reuse following relatively simple refurbishment and cleaning
- **Cost-effective:** Employs interchangeable parts
- **Simple:** Allows for fast assembly because of its efficient design

## Commercial Applications

- Rocket engines
- Subsonic aircraft
- Auxiliary power for underwater vehicles
- Extraterrestrial vehicles (ground or atmospheric) or other medium-level power applications where free oxygen is not available for combustion

## Licensing and Partnering Opportunities

This technology is part of NASA's technology transfer program. The program seeks to stimulate development of commercial uses of NASA-developed technologies. NASA is flexible in its agreements, and opportunities exist for licensing and joint development. MSFC is interested in a partnership to commercialize the technology.

## Patents

U.S. Patent Number: 6,845,605

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