



High Specific Strength Isotropic MMCs for Turbomachinery Applications

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Proposal No.: 03.06-8686

Description and Objectives

- Our metal matrix composite technology developed isotropic high specific Strength Al and Cu composites for LH₂ and LOX turbopump housings components to replace currently used Ni - superalloys

Advantages:

- Elevated temperature capabilities
- Substantial weight savings
- Net shape and low cost
- High environmental resistance



Foster-Miller Isotropic Near Net Shape, Low-Cost Metal Matrix Composite LOX Housing Subcomponent Fabricated During Phase I Program

Approach

- To prove materials/fabrication process concept and their utility to NASA turbopump housings:
- Fabricate housings components
- Seek input from NASA and implement it
- Quantify performance, weight savings and cost

Subcontractors/Partners

- Major rocket engines developer - name is proprietary

Schedule and Deliverables

- Phase I program will be completed in 24 months after start of the program
- MMC wear net shape turbopump housings components will be provided to NASA

NASA & Commercial Applications

- NASA LOX and LH₂ turbopump housings
- Low cost, net shape lightweight metal matrix composite components for rocket engines and gas turbines, diesel components and other automotive applications