



NASA SBIR 2008 Phase I Solicitation

S5.04 Technologies for Low Mass Mars Ascent Vehicles (PAV)

Lead Center: JPL

Participating Center(s): AFRC, ARC, MSFC

NASA aims to design, build and test vehicles that will be launched from the surface of other planets and place a payload, Orbiting Sample (OS), into orbit (<http://marsprogram.jpl.nasa.gov/missions/future/futureMissions.html>). We are seeking proposals for the development of innovative technologies to support future Payload Ascent Vehicles (PAVs) and associated sample operations. Technology innovations should either enhance vehicle capabilities (e.g., increased payload, launch success probability, mission success) or ease implementation in spaceborne missions (e.g., reduce size, weight, power, improve reliability, or lower cost). The areas of interest for this call are listed below.

Alternate propellants, thrusters and propulsion feed system technologies for the PAV:

- Higher performing monopropellants with specific impulse >240 secs;
- High chamber pressure thrusters > 500 psia;
- Pressurization component technologies to reduce system mass (filters, solenoid valves, latch valves, tanks, fill & drain and check valves);
- Small lightweight pump technologies to operate at >500 psi output pressure;
- Non-pyrotechnic isolation valves.

Proposals should show an understanding of one or more relevant science needs, and present a feasible plan to fully develop a technology and infuse it into a NASA program.