



## **NASA STTR 2008 Phase I Solicitation**

### **T8 Research for Improving Heat Conversion Efficiency**

NASA faces challenges to improve aircraft design, efficiently get man to space, and the challenge of accomplishing the mission once in space. The agency is seeking enhancement to or development of technologies for generating and/or storing power in light weight and thin devices.

## **Subtopics**

### **T8.01 Revolutionary (>30% Conversion Efficiency) Thermo-Electric Devices**

**Lead Center: LaRC**

Currently the conversion efficiency of thermo-electric devices which convert heat directly into electricity is not high enough to gain a substantial benefit for reliable use in aircraft, spacecraft, or missions. NASA is interested in new devices for extracting power from heat in, for example, turbine engines, the hot side of spacecraft, and even from the body heat of astronauts. Capturing this "wasted heat" and converting it to electricity could power radios on Mars, lighten the load of astronauts, or power lights spacecraft or aircraft. Commercial applications are vast. Concepts will be evaluated based on their potential conversion efficiency, power output per unit area, ease of manufacturing, and flexibility of applications. Light weight and thin are desirable characteristics for aircraft, spacecraft, and human-worn applications. Proposals will be evaluated based on the maturity level to which the technology will be developed.

