

Technology Area: High Temperature Protective Coatings

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- **Description of Technology:** Ceramic environmental/thermal barrier coatings have been developed to provide water-vapor resistance and insulation to highly thermally loaded gas turbine engine components; Metallic coatings have been developed to protect rocket engine components from high temperature exhaust gases.
- **Potential Applications:** Turbine engine combustor liners, vanes and blades; Rocket thrust chambers/nozzles.
- **Relevance to Space Exploration:** The next generation of rocket engines rely on advanced materials – both metals and ceramics. Coatings are essential to protect components from harsh combustion environments.
- **Industry Co-developers and Industry Consumers:** GE, P&W, Solar Turbines, Rolls-Royce/Allison, Honeywell
- **Current TRL Level:** 2 to 5 (coating/application dependent)
- **Technical Risks Associated with Implementation:** Transitioning the technology to coating vendors, and their application of coatings to actual components without adversely affecting performance/durability.

