

Coatings Extend Life of Engines and Infrastructure



Glenn Research Center

**MesoCoat Inc.
Euclid, Ohio**

Originating Technology/NASA Contribution

- ◆ Among the many ways that NASA works to advance aviation are efforts to improve the lifespan and performance of jet, or gas turbine, engines
- ◆ Glenn scientist Dongming Zhu developed “R&D 100” Award-winning thermal barrier coatings that reduce thermal fatigue in metal engine parts



Partnership

- ◆ MesoCoat is employing a specific composition of Zhu’s coating to prolong the lifespan of engines in U.S. Air Force legacy aircraft
- ◆ Through a Space Act Agreement, the company is also using Glenn’s arc lamp technology to demonstrate cladding technology for limiting corrosion of metal infrastructure like pipes and bridges

Product Outcome

- ◆ MesoCoat’s NASA-developed thermal barrier coating results in a 50-percent increase in engine component life and improved fuel economy
- ◆ The cladding technology can prevent corrosion for up to 100 years, mitigating damage that costs over \$270 billion annually