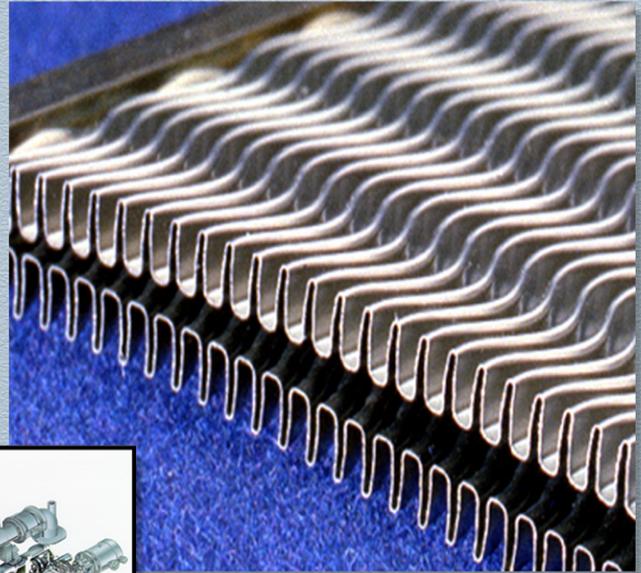
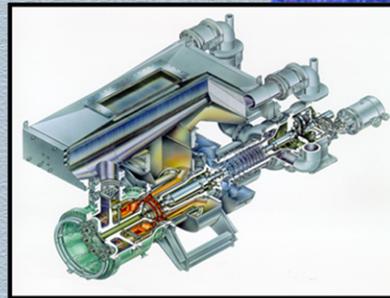


AFA: Alumina-Forming Austenitic Stainless Steels

Alumina-forming austenitics, dubbed AFA, comprise a new class of heat-resistant stainless steels developed at ORNL. These novel alloys deliver superior oxidation resistance with high-temperature strengths approaching that of far more expensive nickel-based alloys without sacrificing the typical lower cost, formability, and weldability of conventional stainless steels. AFA applications range from gas turbines and power plants to chemical and petrochemical processing equipment.



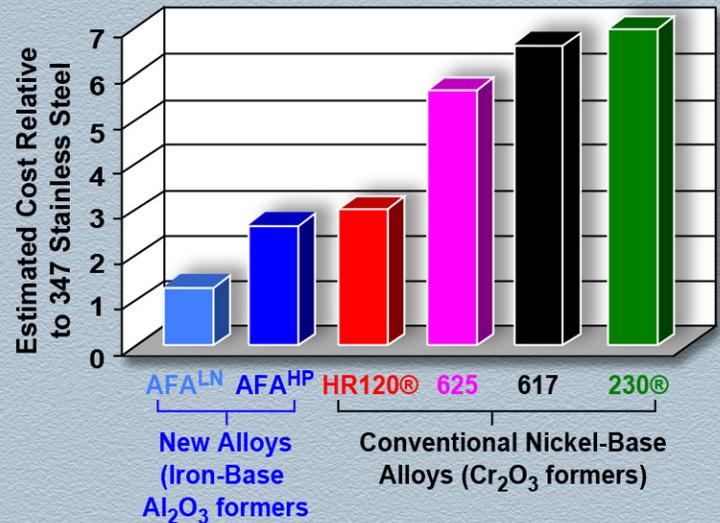
AFA can be used in the fabrication of recuperator air cells such as those utilized in the Solar Turbine Mercury 50, which operates at 38% efficiency



Iron-base AFA alloys deliver excellent high-temperature oxidation resistance at two to three times lower cost than conventional nickel-base alloys

COMPANY INTERACTIONS

- Carpenter Technology Corporation
- Solar Turbines Incorporated
- Capstone Turbine Corporation
- Air Products and Chemicals Inc.
- Modine Manufacturing Company
- Materials Technology Institute



Sponsors of the Research and Development effort include the U. S. Department of Energy, Office of Fossil Energy Advanced Research Materials Program, Office of Energy Efficiency and Renewable Energy, Industrial Technologies Program, Distributed Energy Program, and the Laboratory Directed Research and Development Program of the Oak Ridge National Laboratory, managed by UT-Battelle, LLC, for the U. S. Department of Energy under Contract No. DE-AC05-00OR22725.

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