



CHROMIUM-MOLYBDENUM-ALUMINUM ALLOYS WITH OXIDATION-RESISTANCE IMPARTED BY THERMAL PRE-TREATMENT

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WARF: P230315US01

Inventors: Dan Thoma, Michael Niezgoda

The Invention

UW-Madison researchers have developed an alloy of chromium, molybdenum and aluminum that has shown survivability up to 1600 degrees C, as well as over exposure times of 120 hours through multiple thermal cycles. This composition showed oxidation resistance through the growth of an alumina-chromia oxide film on the exterior surface of the sample, as well as the precipitation of aluminum nitride in the bulk of the sample. These refractory metal alloys may have utility for high temperature aerospace applications since they have much higher melting points compared to nickel-based alloys, as well as improved strength at high temperature, better manufacturability and inherent toughness.

Additional Information

For More Information About the Inventors

- [Dan Thoma](#)

Tech Fields

- [Engineering : Additive manufacturing](#)
- [Materials & Chemicals : Metals](#)

For current licensing status, please contact Michael Carey at mccarey@warf.org or 608-960-9867