

Methods of Fabricating Refractory Complex Concentrated Alloys

Track Code: 2020-SAND-69002

Categories:

- Materials and Manufacturing

Keywords:

- Defense/Space
- Manufacturing
- Materials and Manufacturing
- Transportation

Researchers at Purdue University have developed a new method for fabricating refractory complex concentrated alloys (RCCAs, comprised of metals such as molybdenum, niobium, tantalum, and tungsten). These alloys have the potential for use in a myriad of advanced ultra-high-temperature components for military/defense, energy production, aerospace, and transportation applications. Current RCCAs and conventional superalloys undergo significant degradation in mechanical properties and corrosion resistance at temperatures well above 1200oC. The Purdue University approach yields RCCAs with tailorable structures and chemistries for enhanced high-temperature mechanical and chemical performance.

Advantages:

- Oxidation Resistant
- Corrosion Resistant
- Wear Resistant
- High Temperature Withstanding
- Tailorable Structure and Chemistry

Potential Applications:

- Energy Production
- Military/Defense -Aerospace
- Transportation (Marine, Car, Truck, Aircraft)

People:

- Sandhage, Kenneth Henry (Project leader)

Intellectual Property:

Application Date: March 25, 2020

Type: Provisional-Gov. Funding
Country of Filing: United States
Patent Number: (None)
Issue Date: (None)

Contact OTC:

Purdue Office of Technology Commercialization
1801 Newman Road
West Lafayette, IN 47906

Phone: (765) 588-3475

Fax: (765) 463-3486

Email: otcip@prf.org