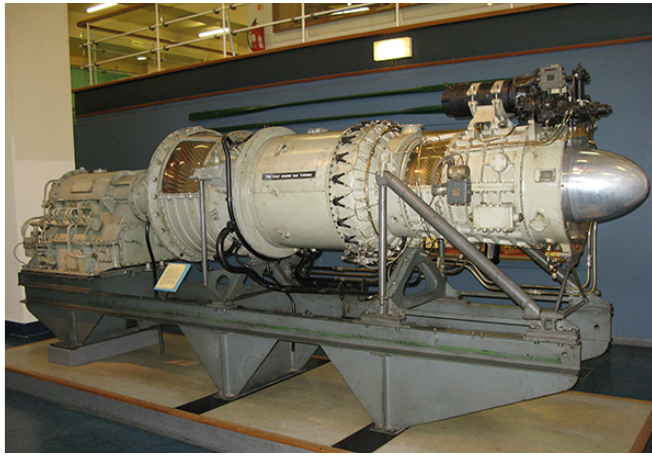


Thermal Barrier Coatings Capable of High Temperature Operation

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PennState



Turbine Engine for Military Aircraft

Technology Summary

The disclosed invention is a multiphase ceramic thermal barrier coating. The coating is adapted for use in high temperature applications in excess of 1200°C. It is purposed specifically for coating superalloy components of a combustion turbine engine such as those used in military aircraft, commercial aviation, and power generation.

Application & Market Utility

This novel coating has increased operating temperatures, lower thermal conductivity, and lower sintering rate compared to the industry standard (yttria stabilized zirconia). It has a reduced erosion rate over advanced rare earth coatings such as pyrochlores, and has operating temperatures as high as pyrochlore but with significantly increased durability, resulting in more fuel-efficient operation.

Next Steps

Patent pending. Seeking licensing opportunities.

TECHNOLOGY READINESS LEVEL

1-3

Seeking

Investment | Licensing | Research

Keywords

- thermal barrier coating
- pyrochlore
- erosion
- GAP
- GZO

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