# High temperature turbines - papers presented at the 36th meeting of the AGARD Propulsion and Energetics Panel held at the Scuola di Guerra Aerea, Florence, Italy, 21-25 September 1970.

# Agard - High Temperature Turbine Design Considerations



Description: -

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# High

Iron aluminide Fe-Al based alloys are a cheaper and lighter option for parts working at lower temperatures and could also be used in steam turbines. The relative importance of manufacturing processes, material developments, cooling techniques, analytical design procedures, rupture and cyclic life considerations, and aerodynamic and mechanical design improvements are discussed along with illustrative examples and technical data. The challenge is to make materials that preserve the high mechanical resistance over a very large range of temperatures.

### High

It is noted that the advances in aircraft engines during the last 10 years have been based on the evolution of sound engineering principles, extensive component and engine development, and careful consideration of the operational requirements rather than a tremendous breakthrough or revolutionary concept in any one area.

# High

Metal Matrix Composites MMCs are one such class of materials, they have a ductile metal matrix with high-temperature resistant particles or fibers distributed on it.

### High

Kruth, Turbomachinery component manufacture by application of electrochemical, electro-physical and photonic processes, CIRP Ann. Palm, Laser additive manufacturing of iron aluminides strengthened by ordering, borides or coherent Heusler phase, Mater.

## **Related Books**

- Tempelberg Chi-chü in der Provinz Szechwan, im China der Gegenwart
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