

LOW-COST PRODUCTION METHOD FOR ALLOYS USED IN HARSH ENVIRONMENTS

CRITICAL NEED

Alloys used in applications such as exhaust valves are subject to demanding high-temperature and corrosive-gas environments. Iron-based superalloys can add strength to materials used in extreme environments, but the mechanical alloying process can add significant cost and potential alloy contamination due to long milling time.

TECHNOLOGY VISION

Ames Laboratory scientists have developed a method to make dispersoid strengthened, corrosion/oxidation resistant atomized alloy powder particles for high-temperature structural applications using a gas atomization reaction synthesis (GARS) process.

POTENTIAL IMPACT

Ames Laboratory's process contributes to low-cost production of metallic alloy particles, which are stronger and highly resistant to coarsening and strength degradation at elevated temperatures. The new molten metal processing technique results in precision parts with superior properties.



Critical Materials Institute
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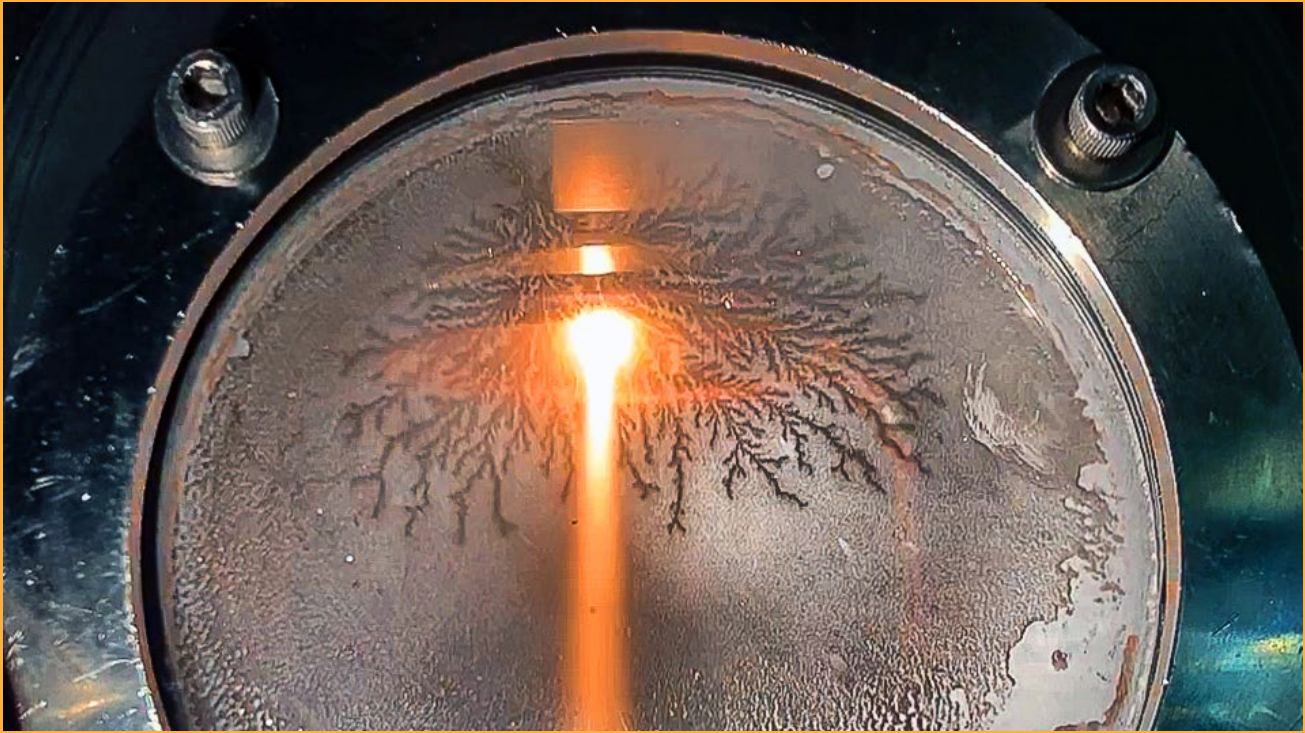
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