

Tailoring ODS materials processing routes for additive manufacturing of high temperature devices for aggressive environments (topAM)

Enabling Industries Through Tailored ODS Materials for High Temperature Devices



Motivation and Relevance

- Development of **oxide dispersoid strengthened alloy components, additively manufactured** with tailored properties for extreme service conditions
- User, service provider, and developer can exploit this solution

Approach

- Advanced interlinked material simulation tools (integrated computational materials engineering - ICME), topology optimization (TO) and artificial intelligence (AI) approaches (e.g. neural networks) for alloy design, component design, and process parameter development (LPBF)

Results

- Reduction in the material requirement and manufacturing cost** for the gas burner head.
- Improved high-temperature corrosion resistance, AI accelerated topology optimization methodology** applied to an engineering problem

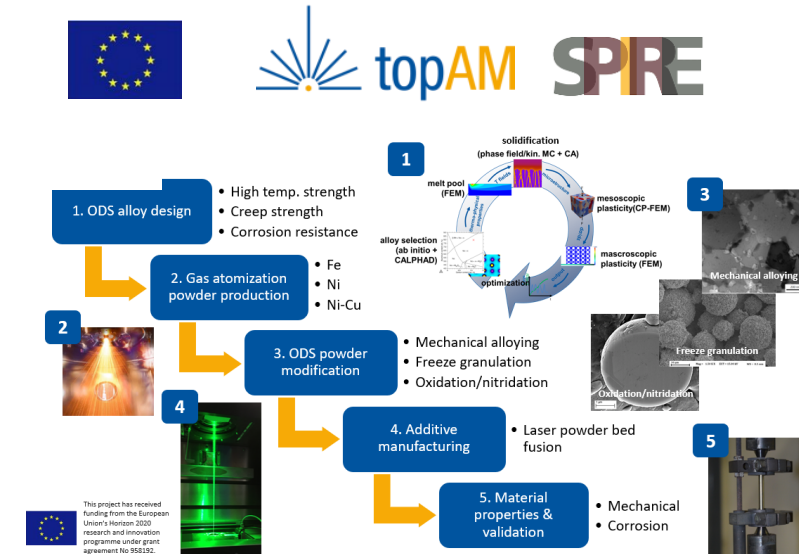
Research Area

- ODS Alloys
- Energy efficiency
- Future low-carbon technology
- DfAM

Partners



Picture



Contact



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