

GlobalAM – Enabling Laser Powder Bed Fusion for Large Scale Production of Multi-Material Components

Current Situation:

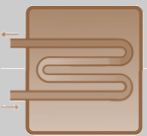
Conventional metal laser powder bed fusion (LPBF-M) of metals is an established manufacturing technique with great potential in terms of flexibility, digitalization, geometric freedom.

But: **Productivity of LPBF-M is still too low to penetrate mass markets.**

Our Mission:

GlobalAM aims to unlock the potential of additive manufacturing for large scale production by feature based hybrid production on dissimilar substrate materials.

Key Exploitable Results:



competitive **high performance cooling device** as industrialization demonstrator



advanced machine concept for highly reduced cycle times + precision positioning of substrates

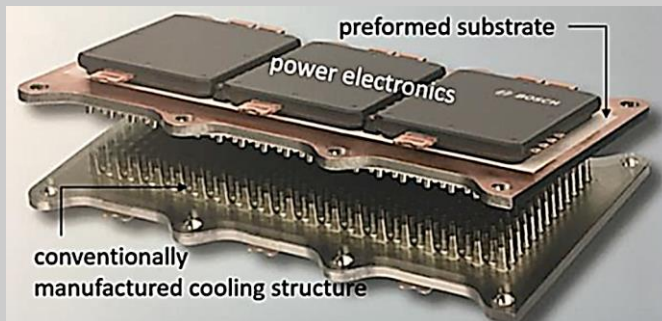


superior material systems for defect-free products with improved functional performance

Cooling device for EV inverters as demonstrator:

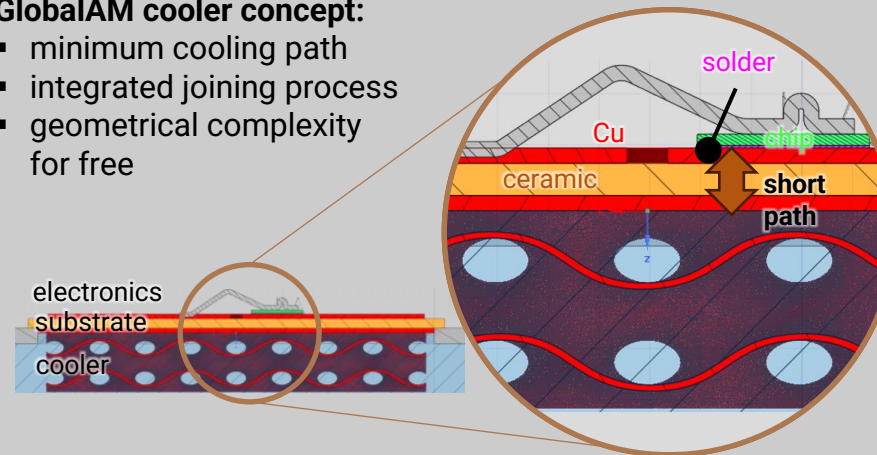
conventional design:

- long cooling path
- soldering/sintering required
- limited design flexibility



GlobalAM cooler concept:

- minimum cooling path
- integrated joining process
- geometrical complexity for free



Key Enabling Technologies:



Process & Defect Monitoring



Beam Shaping & Splitting



Substrate Positioning



In-line Defect Compensation



Substrate Fixation



Multi-material Powders



Multi-scale Modelling



High Resolution Residual Stress Analysis



Exploitation/Dissemination, LCA

