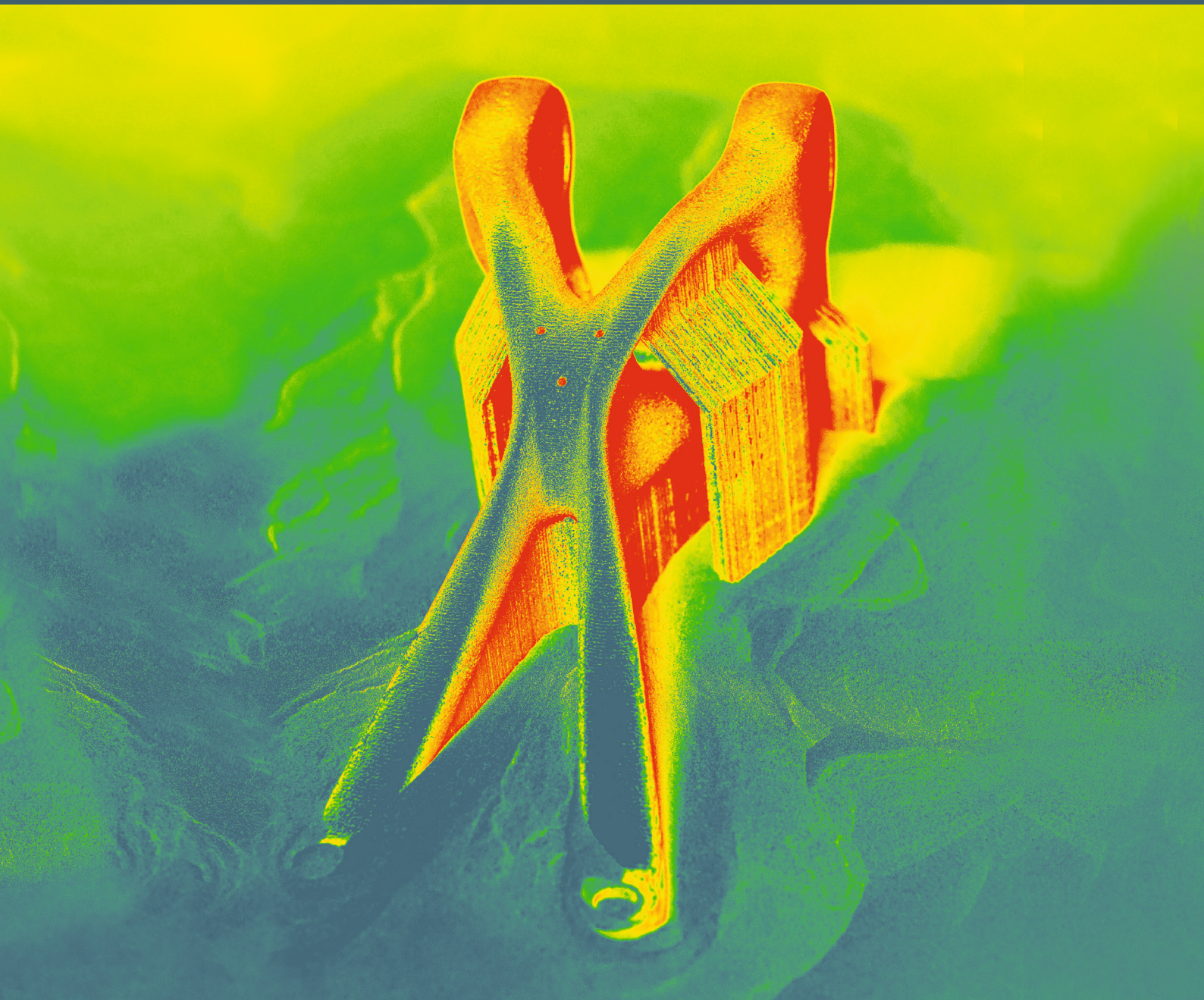


ADDITIVE MONITORING STUDY

BENCHMARK OF IN-PROCESS MONITORING SYSTEMS FOR L-PBF MACHINES



ADDITIVE MONITORING STUDY



PROBLEM STATEMENT

Current Situation

- What added value is offered by a process monitoring system?
- Which systems are available on the market?
- Which TRL level applies to them?
- How does the data output look like?



Solution

- **A study of market-relevant in-process monitoring systems**
- Description and objective analysis of various systems
- Experimental system test
- Quick decision aid for understanding which system is suitable for my needs

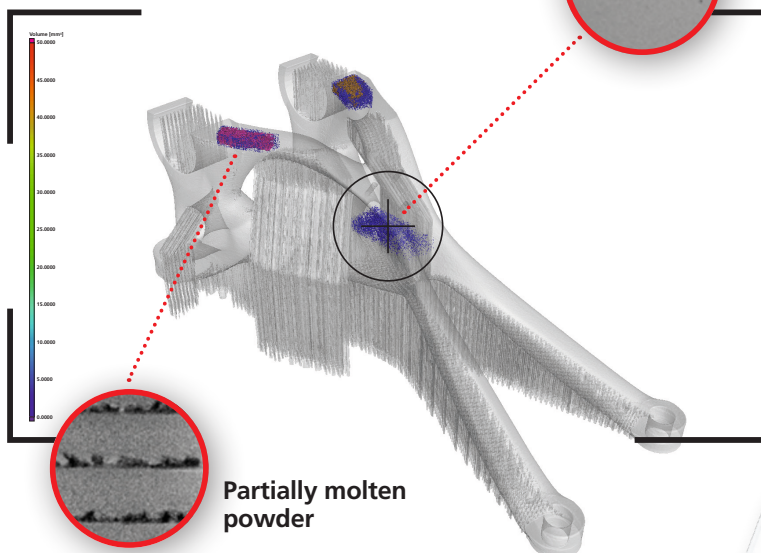
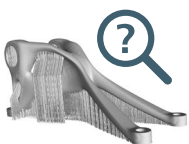
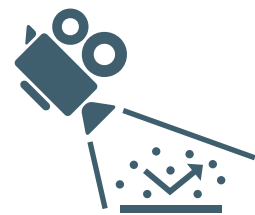
CONTENT AND STRUCTURE OF THE STUDY

Technical Analysis

- System architecture
- Technical features and working principles
- User interface
- Technical comparison

Practical Investigation Using Test Samples

- Objective data evaluation of system output
- Analysis of samples using μ CT and metallographic analysis
- Correlation between build irregularities and data output from different systems



In-Process Monitoring Systems Investigated

Machine manufacturer systems:

- GE Additive*
- EOS*
- Renishaw
- SLM Solutions*
- Trumpf*
- Velo 3D
- 3D Systems

Independent systems:

- Sigma Labs*
- Additive Assurance
- Open Additive

**included in the practical investigation
Material: AlSi10Mg; CoCr; Ti6AlV4*



SECURE THE STUDY RESULTS NOW!

Contact us: process.monitoring@iapt.fraunhofer.de