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 μCT and metalographic 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@iapb.fraunhofer.de