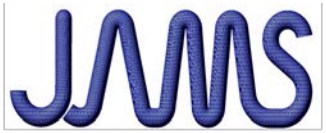
Factors Affecting Qualification/Certification:

Evaluating the Criticality of Inherent Anomalies/Defects on the Fatigue Behavior of LB-PBF Ti-6Al-4V Gr. 5

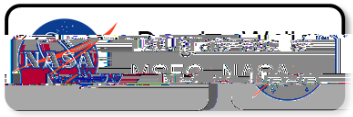
National Center for Additive Manufacturing Excellence (NCAME)



JAMS Technical Review
August 26, 2021

Project team

Advisory Group



NCAME Project Team
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9 Senior Investigators
10 Graduate Research Assistants

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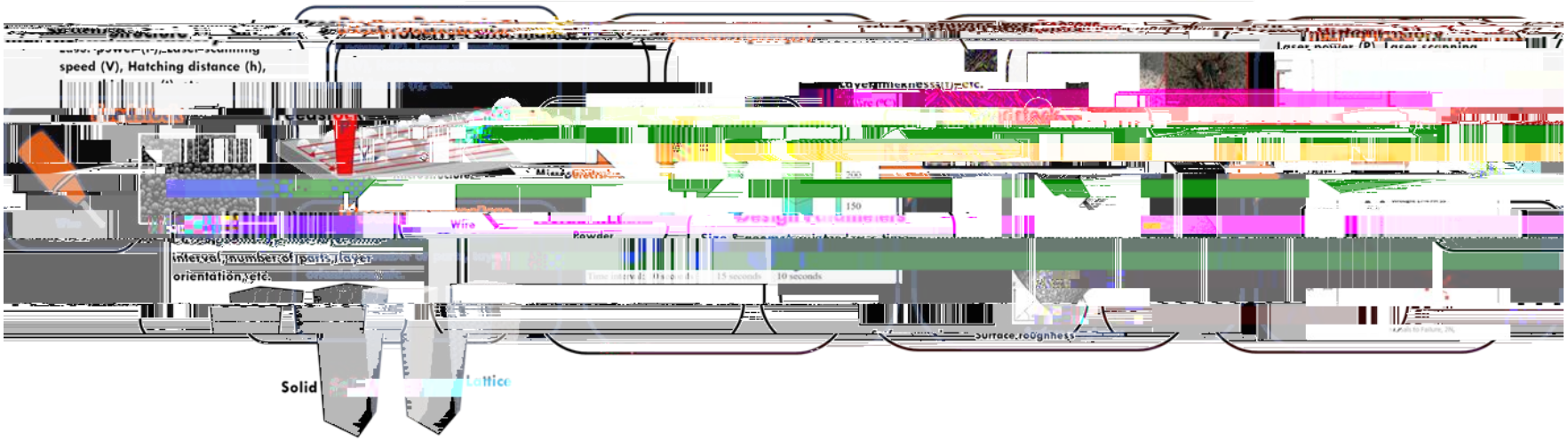
Background

Challenge

- Significant data is needed to statically quantify the mechanical behavior of materials and generate materials allowables in support of qualification
- AM has virtually infinite combinations of feedstock, process, and design parameters, which influence micro-/defect-structure
- Knowledge on defect-criticality may be beneficial in decoupling the fatigue properties from the explicit consideration of process/design parameters – if defect information is known