Non-Destructive Evaluation Methods for Additive Manufacturing

While destructive evaluation methods such as microstructural characterizations and mechanical testing are often used to qualify products, non-destructive evaluation (NDE) methods can provide significant insights without the need for sectioning and damaging the part. Due to the fact that the mechanical performance of additively manufactured parts are often affected by the presence of defects (i.e., pores, lack of fusions, surface roughness, etc.), understanding the type, size and location of defects is key to managing performance expectations and predicting performance. Furthermore, some internal features of additively manufactured parts, for example in lattice structures or cooling channels, cannot be measured easily. Therefore, NDE methods covering both in-process monitoring and post-built inspection, become crucial in identifying defects and evaluating the quality of the additive product. For this reason, topics in this symposium cover current & novel NDE methods and in-process monitoring techniques as they pertain to additive manufacturing.

We welcome all abstracts within the scope of the following topics:
- Applications of current NDE methods for additive manufactured parts
- Novel or improved NDE inspection capabilities
- Current status of standards and guidelines and needs for new standards
- Ultrasonic/Resonance/X-Ray/CT-scan as inspection methods for defects
- NDE as an enabler for defect formation understanding and mitigation
- “Effect-of-defect” (structural modelling, NDE, mechanical testing, etc.), enabling targeted inspection
- In-process monitoring & inspection

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