Title: Exploiting processing space in additive manufacturing to enhance material performance

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Abstract: Additive Manufacturing is changing the way we design and manipulate materials due to the ability to spatially and temporally regulate energy and chemistry. Hundreds of processing variables can be controlled at approximately a 100um voxel size enabling optimization of materials never before possible. This combined with machine learning can unlock new processing strategies to get the most out of conventional materials and help design new materials specific to the rapid solidification enabled by laser additive manufacturing. This talk will dive into the details of applying machine learning and insitu sensing to the laser powder bed fusion process to help identify some of the opportunity space in AM processing and material performance.