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## Forming and defect analysis for single track scanning in selective laser melting of Ti6Al4V

Selective laser melting (SLM) is one of the most promising additive manufacturing (AM) processes. Each single track in SLM may affect the forming defects and the resultant relative density of final SLM parts. A three-dimensional randomly distributed powder bed model of Ti6Al4V was established to study the forming process of single track. The numerical model is verified by experimental tests. The numerical results show that—the typical metallurgical defects associated with SLM such as balling effect is significantly affected by line energy density (LED). The optimal LED range is given by numerical and experimental results.

### Speaker Biography

Zhengying Wei has completed her PhD in 2003 from Xi'an Jiaotong University, China. She is the professor and doctorial tutor at Xi'an Jiaotong University, China. Her research interests are in the microstructure designing and rapid manufacturing. In 2008, she won the province award for Youth Science and Technology. She is also the author of several international publications.

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