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Standard method for microCT-based additive manufacturing quality control 4: metal powder analysis

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Protocol status: Working

We use this protocol and it's working

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Keywords: additive manufacturing, microCT, x-ray tomography, metal powders, standardization in powder analysis, powder analysis, ti6al4v powder, analyse powder feedstock, additive manufacturing quality control, commercial powder bed fusion, based additive manufacturing quality control, additive manufacturing community, defects in powder, computed tomography, standard method for microct, powder, image analysis procedure, identification of impurity, scan condition

Abstract

X-ray micro computed tomography (microCT) can be applied to analyse powder feedstock used in additive manufacturing. In this paper, we demonstrate a dedicated workflow for this analysis method, specifically for Ti6Al4V powder typically used in commercial powder bed fusion (PBF) additive manufacturing (AM) systems. The methodology presented includes sample size requirements, scan conditions and settings, reconstruction and image analysis procedures. We envisage this method will support standardization in powder analysis in the additive manufacturing community. This is aimed at ultimately improving the quality of additively manufactured parts, through the identification of impurities and defects in powders.

Attachments



[Method for microCT a...](#)

1.7MB



[04 Powder foam struc...](#)

25.4MB



[04 Powder Internal p...](#)

59.6MB

Troubleshooting

