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Additive manufacturing process creates local surface roughness modifications leading to variation in cell adhesion on multifaceted TiAl6V4 samples

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Title: Low dose Rituximab for Pre-emptive Treatment of Epstein Barr Virus Reactivation after Allogenic Hematopoietic Stem Cell Transplantation

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Table 1: Comparison between the chemical composition of Ti64 samples-as-SLM and Ti64 powders

Composition of Ti64-ELI powders									
Al	C	Fe	H	N	O	Ti	V	Others	All Others
6.2	0.01	0.14	0.002	0.01	0.07	Bal	4.1	<0.1	<0.01
Composition of Ti64-ELI samples-as SLM in the surface									
Al	C	Fe	H	N	O	Ti	V	Others	All Others
4,97 ± 0,26	-	0,19 ± 0,38	-	-	-	91,64 ± 1,26	2,74 ± 0,20	-	-

Table 2: Manufacturing parameters and stripes hatching strategy

	Puissance	Vitesse	Gaz de protection	Argon
Bulk filling	175 W	775 mm/s	Pattern type	stripes
Contour filling	100 W	525 mm/s	Hatch vector	120 μm
Border	100 W	525 mm/s	Distance inter ext. border /center	60 μm
			Layer width	30 μm

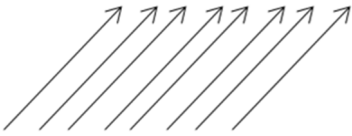
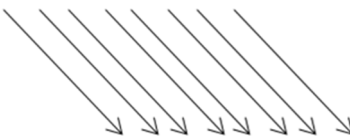
Stripes hatching strategy		
	Couche n	Couche n+1

Table 3: Measured roughness parameters on the different surfaces of the complex Ti6Al4V

	Zone 1	Zone 2	Zone 3	Zone 4	Laser grooves
Number of partially melted powder/mm²	188,3 ± 35.9	412.7 ± 89.7	500.9 ± 81.0	1192.1 ± 89.4	NA
Average height: Sa (μm)	8,7 ± 0.6	9,9 ± 1.1	10,5 ± 0.2	19.2 ± 1.2	0.11 ± 0.03
Maximum height : Sz (μm)	125,8 ± 15.1	138,07 ± 6.8	161,3 ± 4.9	230.4 ± 2.5	0.87 ± 0.42
Root mean square : Sq (μm)	11,8 ± 0.6	12,8 ± 1.4	13,8 ± 0.6	24,1 ± 1.8	0.13 ± 0.3
core roughness depth : Sk (μm)	25,16 ± 3.7	29,48 ± 4.6	31,58 ± 1.6	61.8 ± 2.9	0.22 ± 0.3
reduced peak height : SpK (μm)	21,0 ± 0.7	18,2 ± 1.3	19,7 ± 2.9	18,2 ± 1.0	0,1 ± 0.01
reduced valley depth : SvK (μm)	8,2 ± 1.6	9,1 ± 0.8	10,2 ± 0.2	27,4 ± 5.2	0.11 ± 0.11
kurtosis : Sku (no unit)	6,1 ± 1.1	4,7 ± 0.8	5,4 ± 1.7	3,2 ± 0.3	2.73 ± 0.51
skewness : SsK (no unit)	1,2 ± 0.2	0,8 ± 0.1	0,8 ± 0.4	0,3 ± 0.1	-0.07 ± 0.4
developed interfacial area ratio : Sdr (%)	79,15 ± 20.6	79,3 ± 23.7	139,1 ± 38.3	351.3 ± 58.7	3.06 ± 3.18
root mean square gradient : Sdq (no unit)	1,9 ± 0.3	1,8 ± 0.3	2,5 ± 0.4	4,3 ± 0.3	0.28 ± 0.21
Polar spectrum					
Texture direction : Std (°)					