

ORIGINAL RESEARCH ARTICLE

Microstructural gradients and associated mechanical and fatigue behavior in DED Ti-6Al-4V across the build height

Supplementary File

Table S1. Semiquantitative phase composition of the α and β phases determined by X-ray diffraction analysis

Phase composition	Sample						
	1	2	3	4	5	6	7
α -Ti (wt.%)	96	95	92	94	84	93	95
β -Ti (wt.%)	4	5	8	6	16	7	5

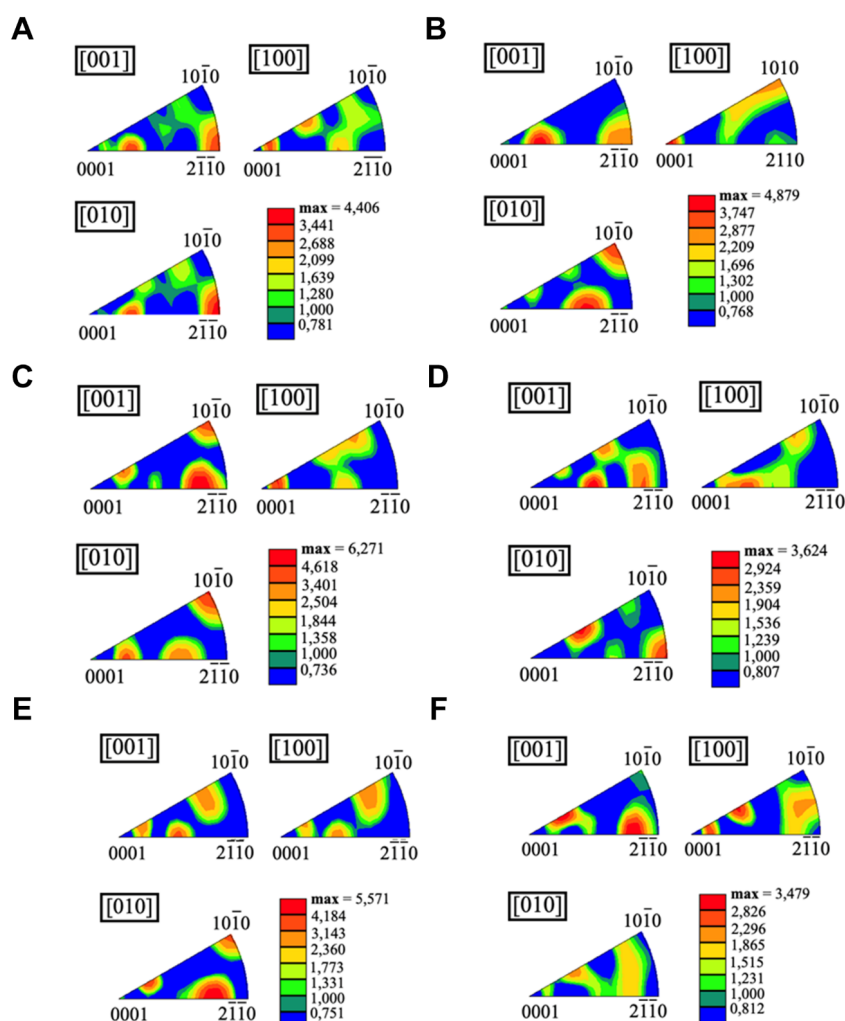


Figure S1. Inverse pole figure triangles for the longitudinal and transverse directions at individual monitored points. (A, B) Level 1: (A) Regions 1a and (B) 1b. (C, D) Level 3: (C) Regions 3a and (D) 3b. (E, F) Level 7: (E) Regions 7a and (F) 7b.

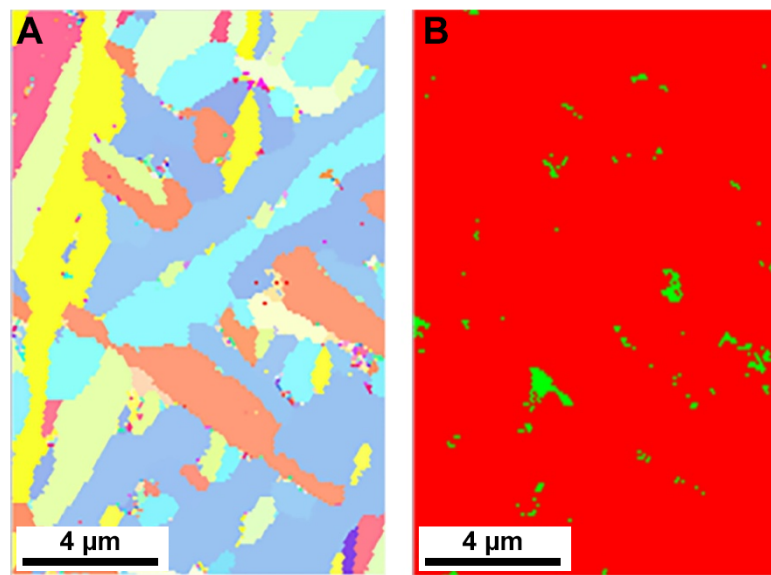


Figure S2. Inverse pole figure map showing evidence of the presence of the β phase (green color) (scale bar = 4 μm): (A) Inverse pole figure with (B) the phase map from the same region

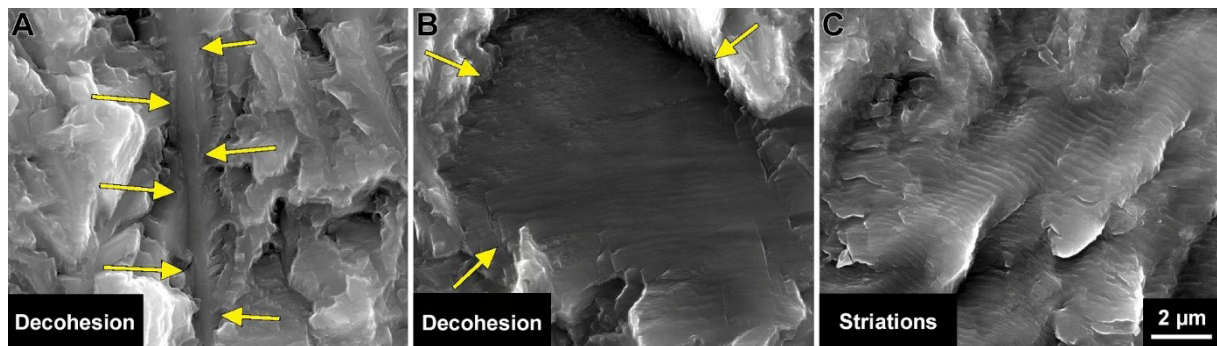


Figure S3. Detailed fractography of directed energy deposition–laser fracture surface after fatigue crack growth rate test, showing (A, B) platelet decohesion and (C) a striation field (scale bar = 2 μm)