Supplementary Material

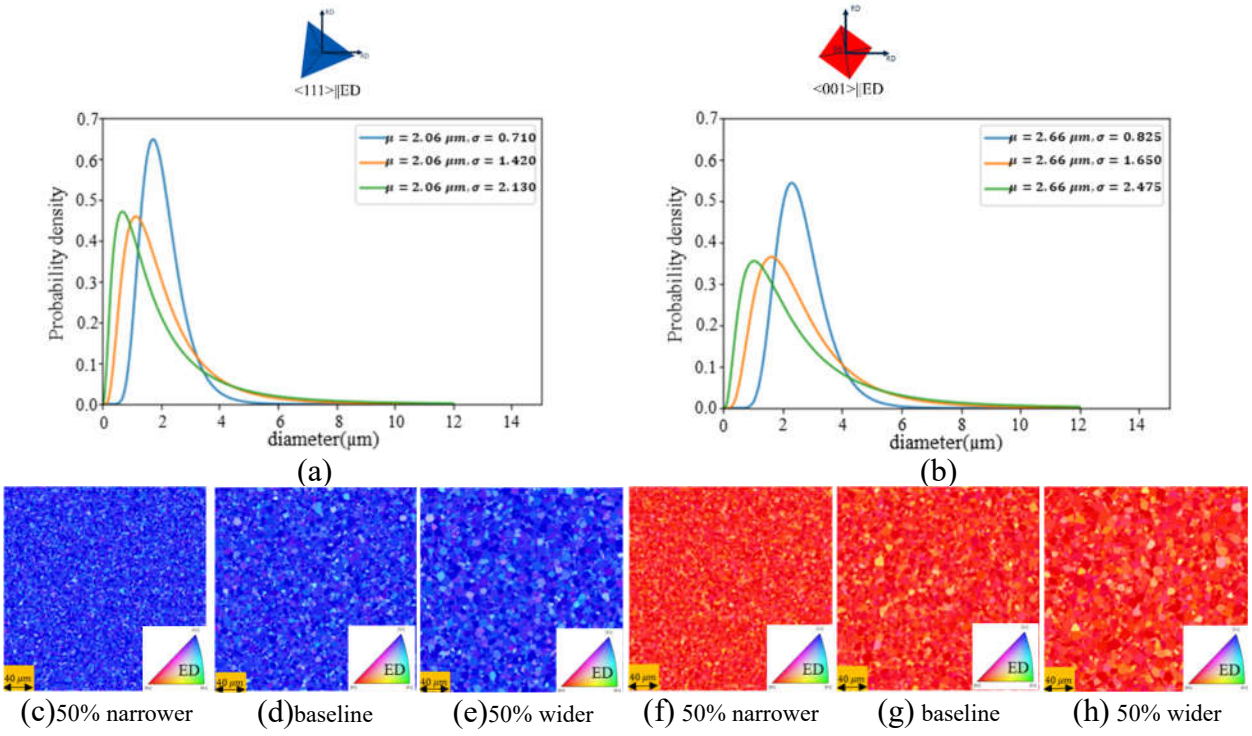
Initial synthesized microstructures and results for <001>||ED

Table S1. Key parameters for the initial microstructures synthesized to study the role of subgrain size distribution

Orientation	50% narrower	Baseline	50% wider
<001>||ED	$\mu = 2.66\ \mu m, \sigma = 0.83\ \mu m$	$\mu = 2.66\ \mu m, \sigma = 1.65\ \mu m$	$\mu = 2.66\ \mu m, \sigma = 2.48\ \mu m$

Table S2. Half-width angle in degree for ODF calculation of the initial microstructures synthesized to study the role of disorientation distribution

Orientation	*50% narrower*	*25% narrower*	*Baseline*	*25% wider*	*50% wider*
<001>||ED	4.5	6.75	9	11.25	13.5



(a) (b)

(c)50% narrower (d)baseline (e)50% wider (f) 50% narrower (g) baseline (h) 50% wider

Figure S1. Different simulations to study the role of initial subgrain size distribution on the growth.

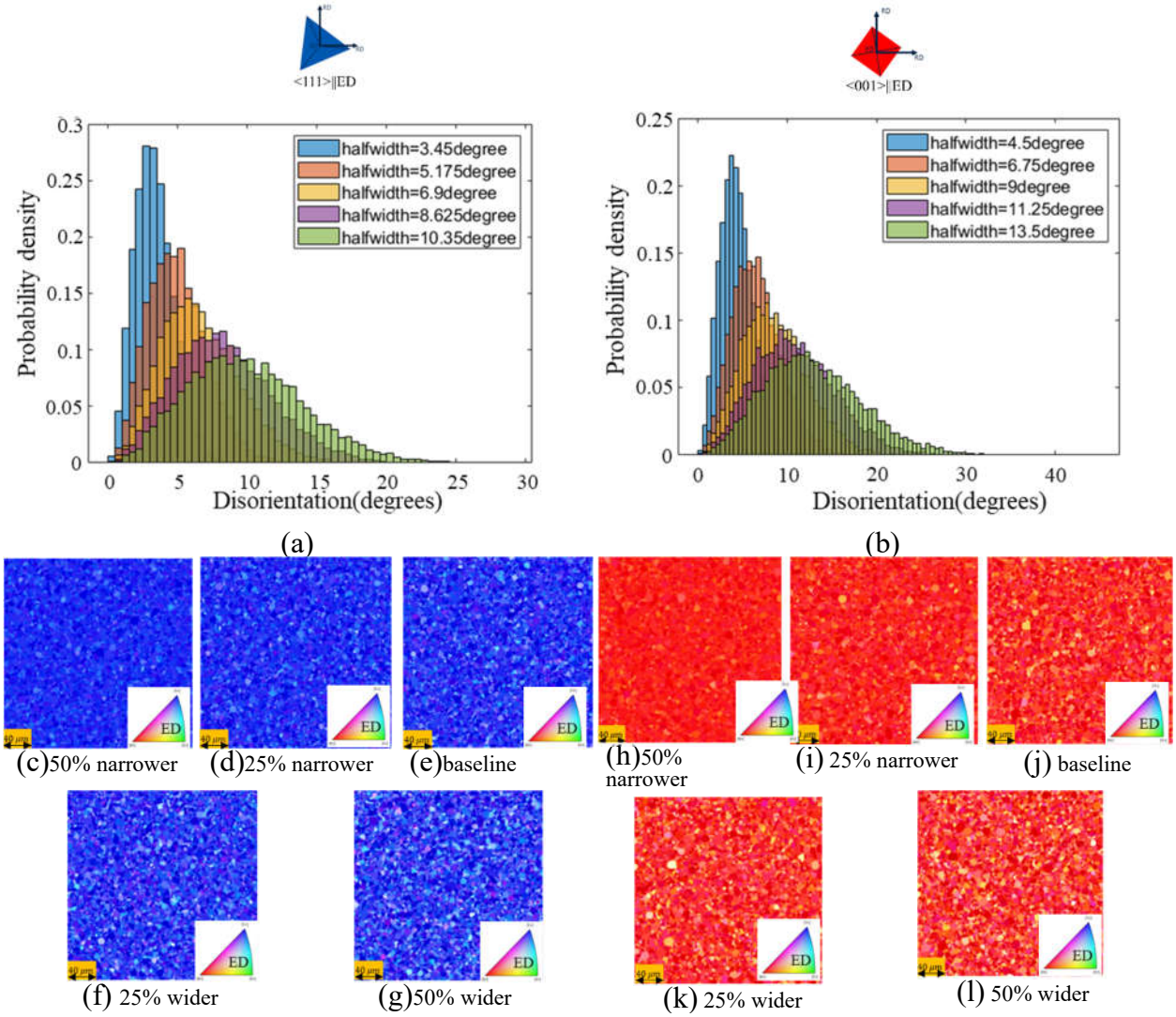


Figure S2. Different simulations to study the role of initial subgrain disorientation distribution on the growth.

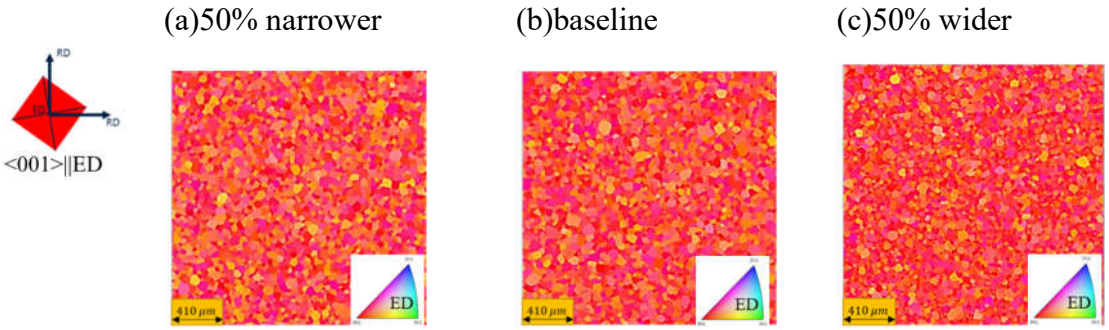


Figure S3. Evolved subgrains structure of different microstructures with different standard deviation and the same average for <001>||ED grain.

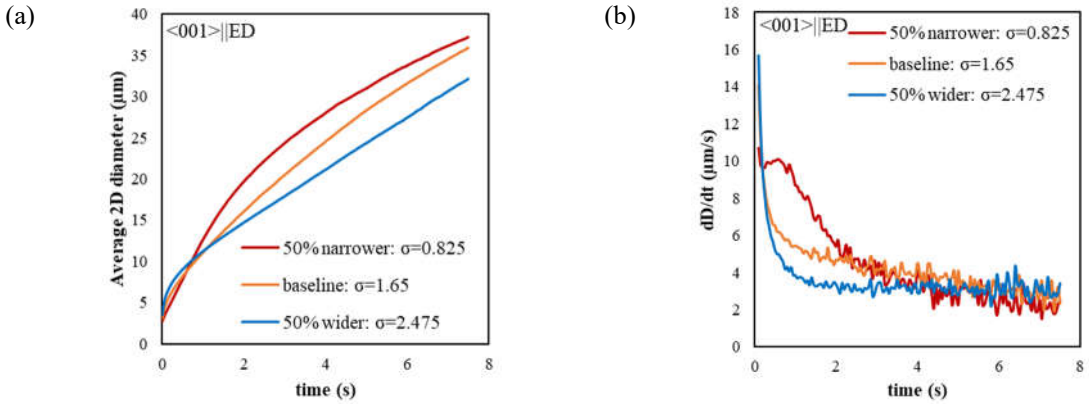


Figure S4. a) Evolution of the equivalent area average 2D diameter of <001>||ED microstructures with different initial subgrain size distribution and b) evolution of rate of change of the equivalent area average diameter of the same microstructures.

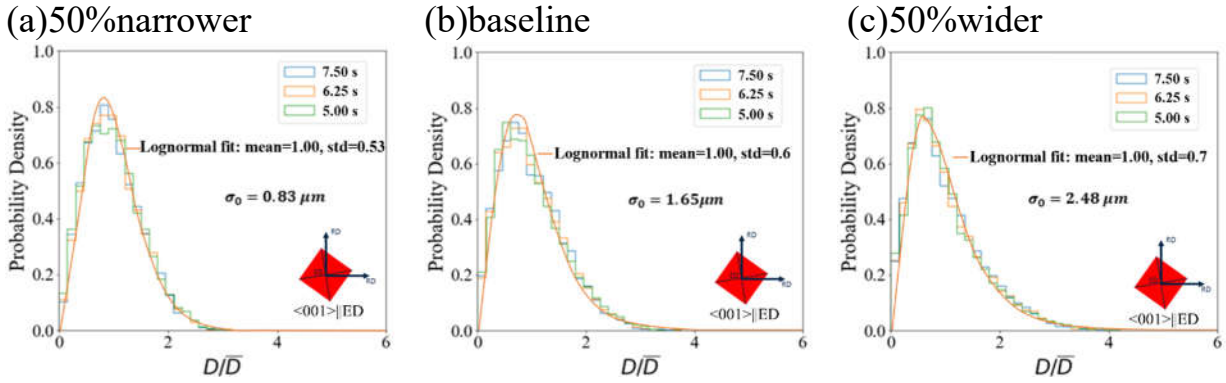


Figure S5. Histogram of evolved normalized diameter for microstructures where <001>||ED with different initial standard deviation and same initial average diameter in different time steps.

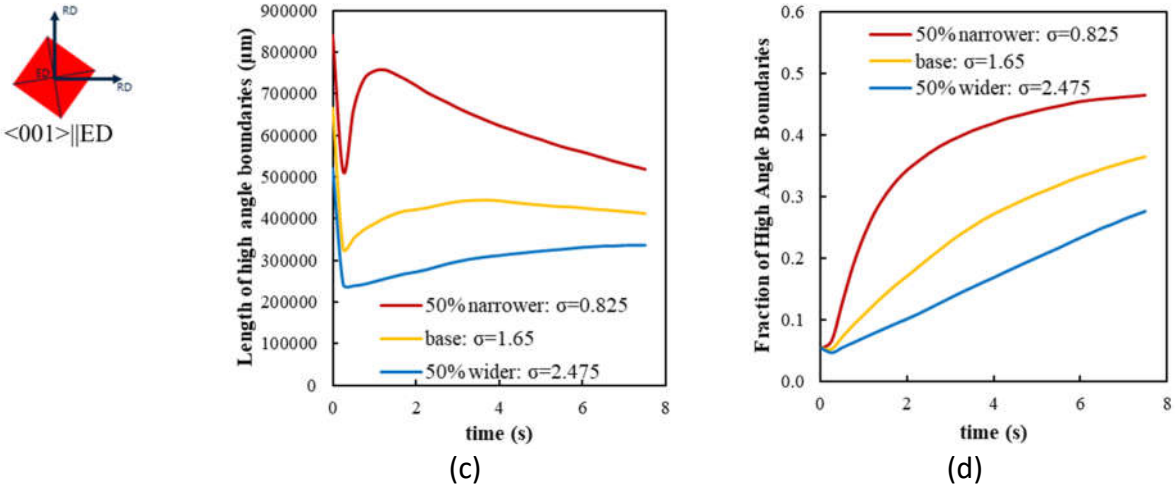


Figure S6. Evolution of (a) the total length of high angle boundaries, (b) the fraction length of the high angle boundaries of single grains in <001>||ED.

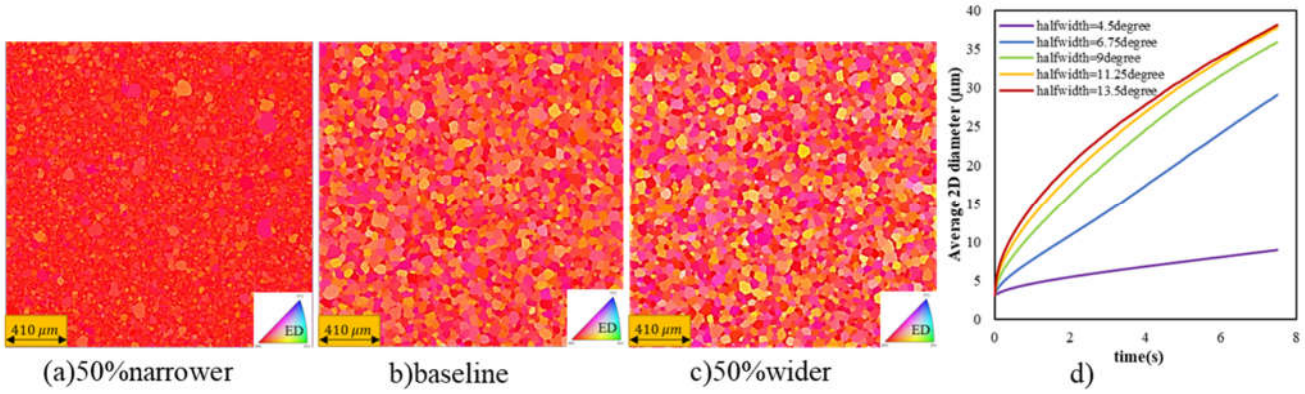


Figure S7. The evolved microstructure of a grain in <001>||ED fibre with the same subgrain size as baseline and disorientation distribution of different half-width angles a) 4.5°, b) 9° (baseline), c) 13.5° at 7.5 s and d) evolution of diameters for different half-width angles.

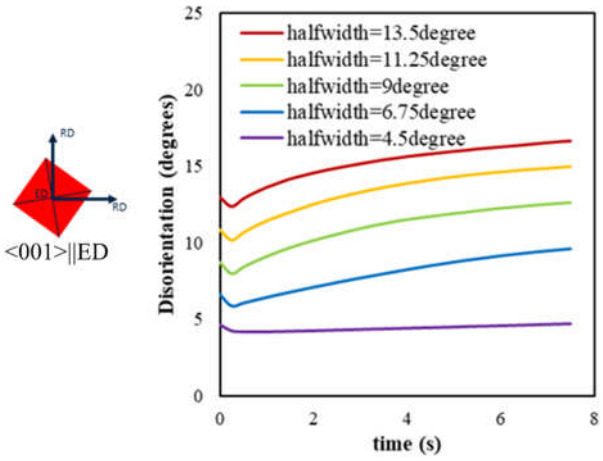


Figure S8. The evolution of average disorientation in the different microstructure of different disorientation distribution with the same subgrain size in a grain with <001>||ED.

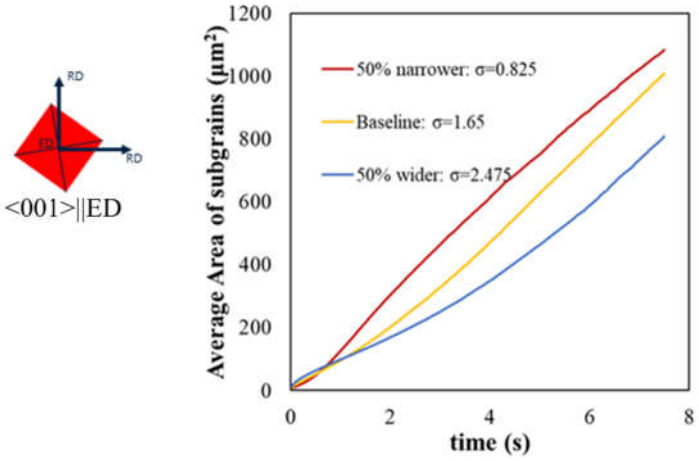


Figure S9. Evolution of subgrains area as a function of time for a grain with <001>||ED.

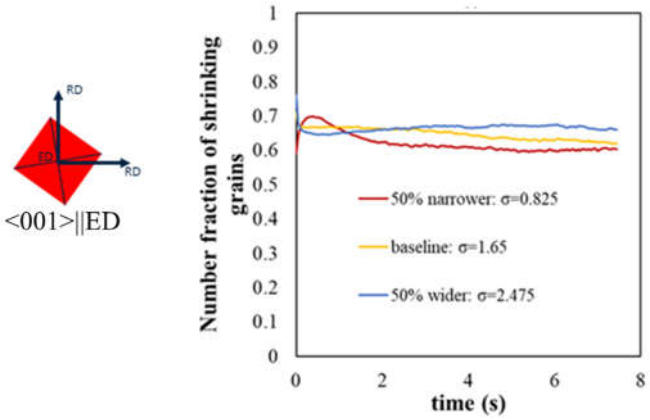


Figure S10. Fraction of shrinking grains as a function of time for <001>||ED grain.