

## Supplementary Information

Impact of uneven distribution of grain characteristics on yield **strength**  
and martensitic transformation of as-hot-rolled medium-entropy alloys

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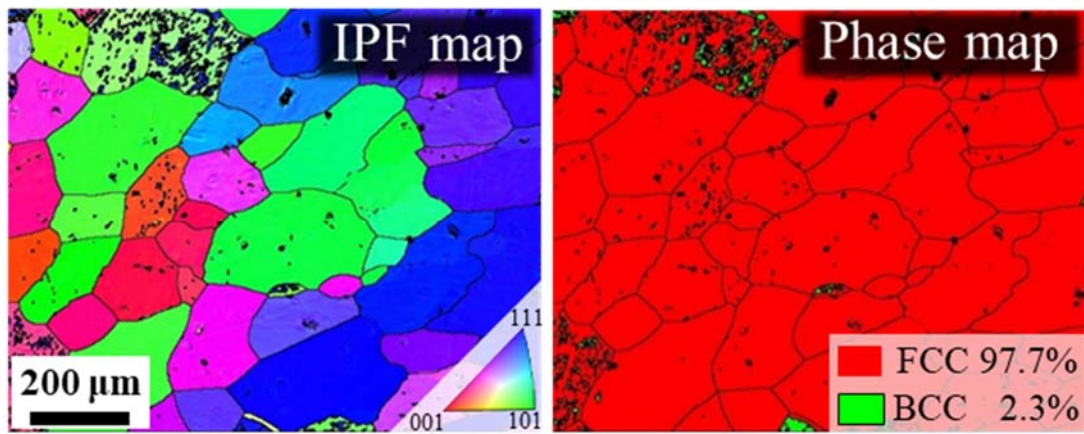
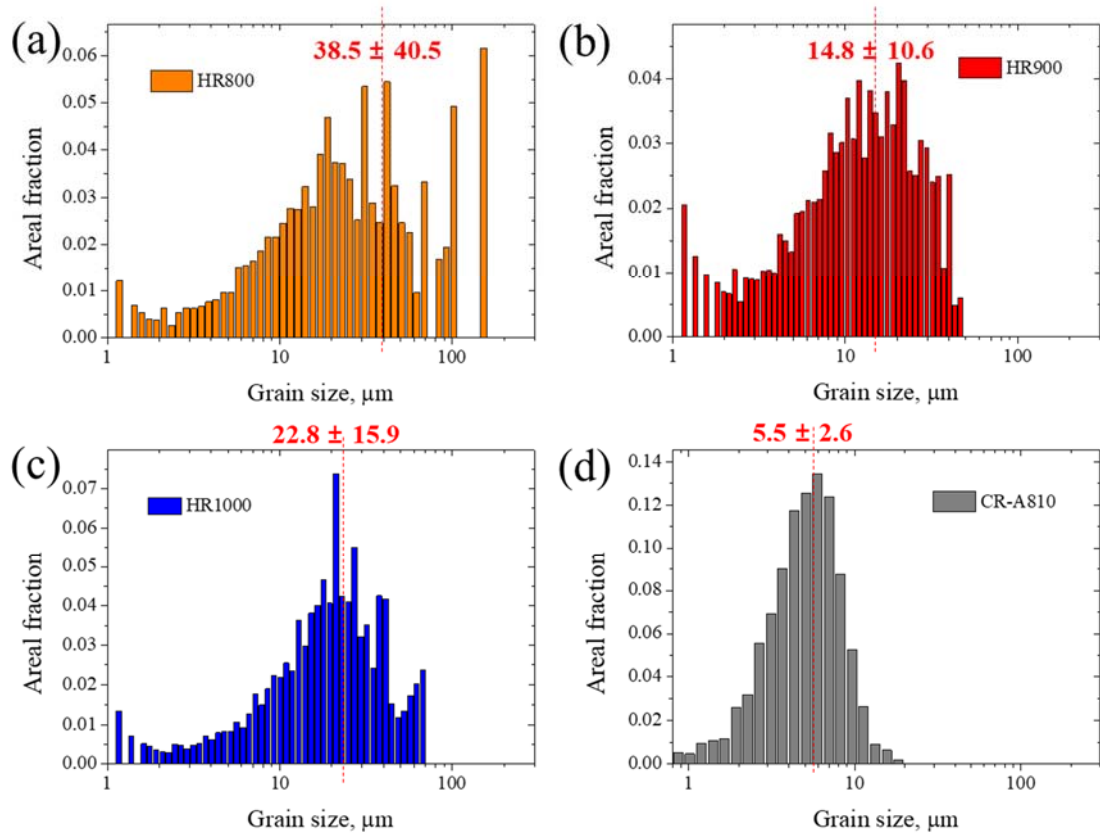
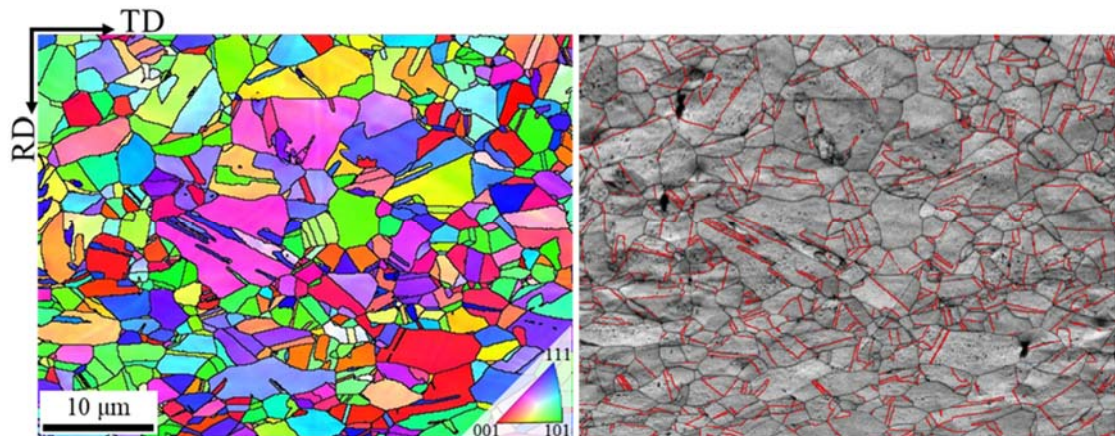


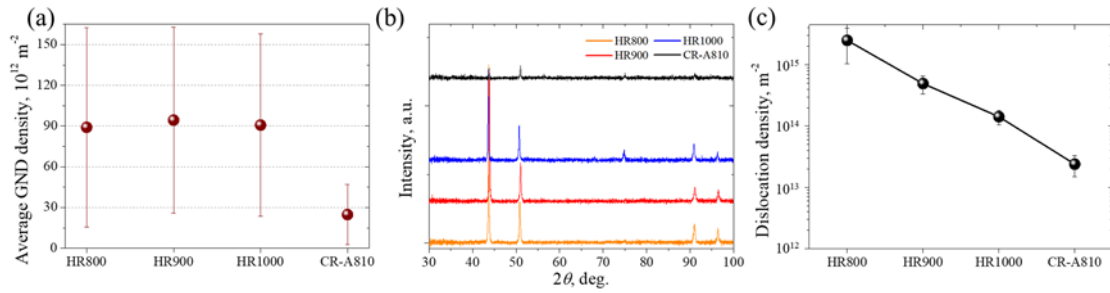
Fig. S1. EBSD IPF map and phase map of the as-homogenized MEA prior to the hot rolling.



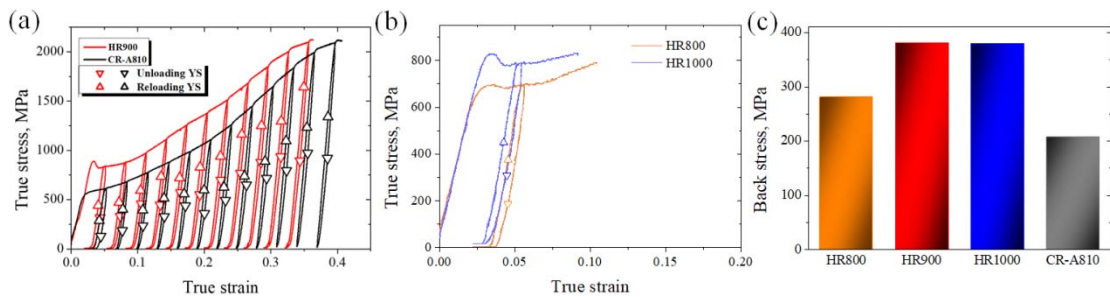
**Fig. S2.** Grain size distribution of the (a) HR800, (b) HR900, (c) HR1000, and (d) CR-A810.



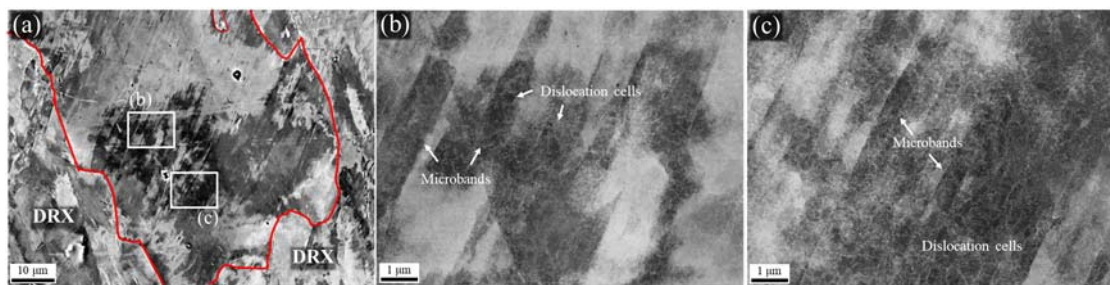
**Fig. S3.** EBSD IPF map and image quality (IQ) map of the CR-A810 with a step size of 0.1  $\mu\text{m}$ . Red lines in the IQ map indicate  $\Sigma 3$  twin boundaries.



**Fig. S4.** (a) Average GND density, (b) XRD profiles, and (c) dislocation density obtained by the CMWP fitting from the (b) for the HRs and the CR-A810.



**Fig. S5.** LUR curves of (a) HR900 and CR-A810 and (b) the HR800 and HR1000 by a low strain. (c) Calculated back stresses ( $\sigma_{\text{HDI}}$ ) from the LUR loop around the lower yield point of the four samples.



**Fig. S6.** ECC images of the initial HR800. (a) The same image in Fig. 4(b). (b, c) Enlarged parts of (a) exhibiting microbands and dislocation cells in an unrecrystallized grain.

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