Supplementary Information

Figure S1 Representative EBSD results of AR sample; (a) SEM image and (b) phase map.
Figure S2 SEM images of uncharged (UC) and hydrogen-charged (HC) samples (a) before and after the indentation of $P_{\text{max}} = 10 \text{ mN}$ and (b) after the indentation of $P_{\text{max}} = 5 \text{ mN}$ only in the FCC phase.