

Supplementary Material

Nanoindentation Investigation of Chloride-Induced Stress Corrosion Crack Propagation in an Austenitic Stainless Steel Weld

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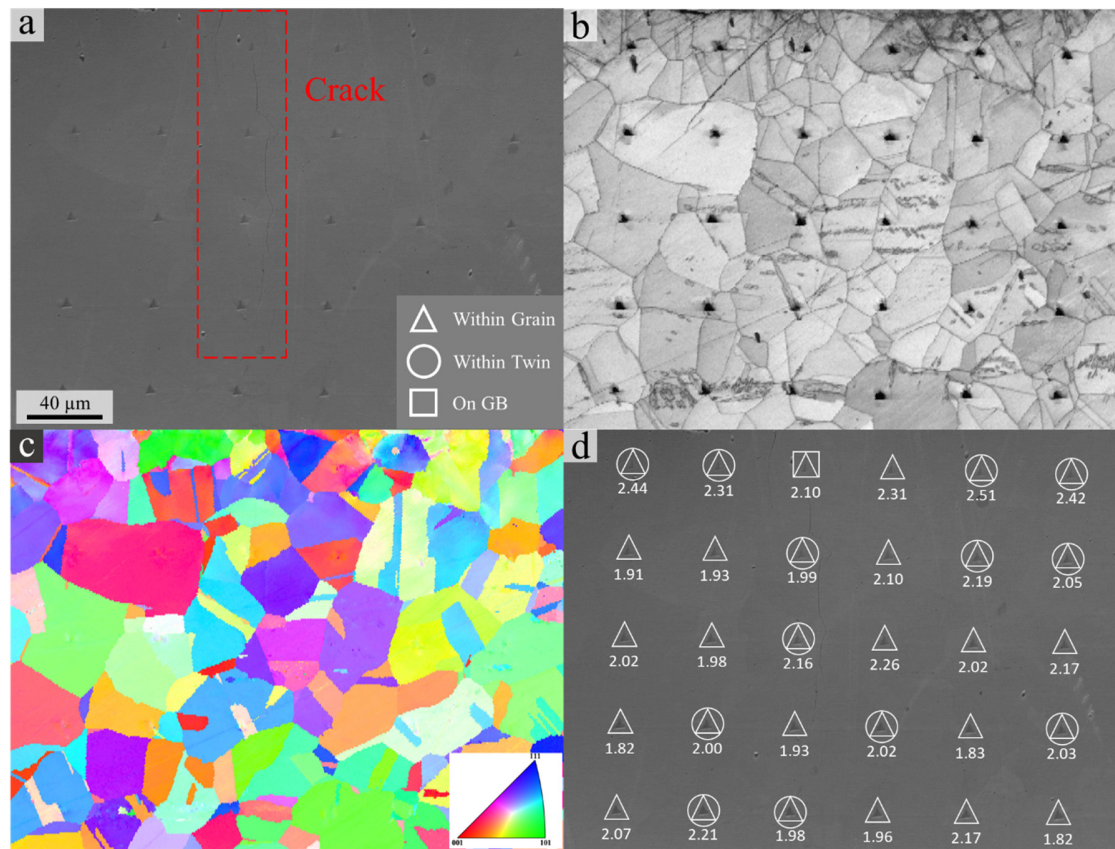


Figure S1. Nanoindentation and EBSD maps of crack #2 region. (a) SEM image with crack marked in red; (b,c) EBSD-IQ and IPF maps showing the grain structure; (d) SEM image annotated with hardness and triangle indentation position, with circle and square marks indicating that the corresponding indent is located on GBs or within a twin, respectively.

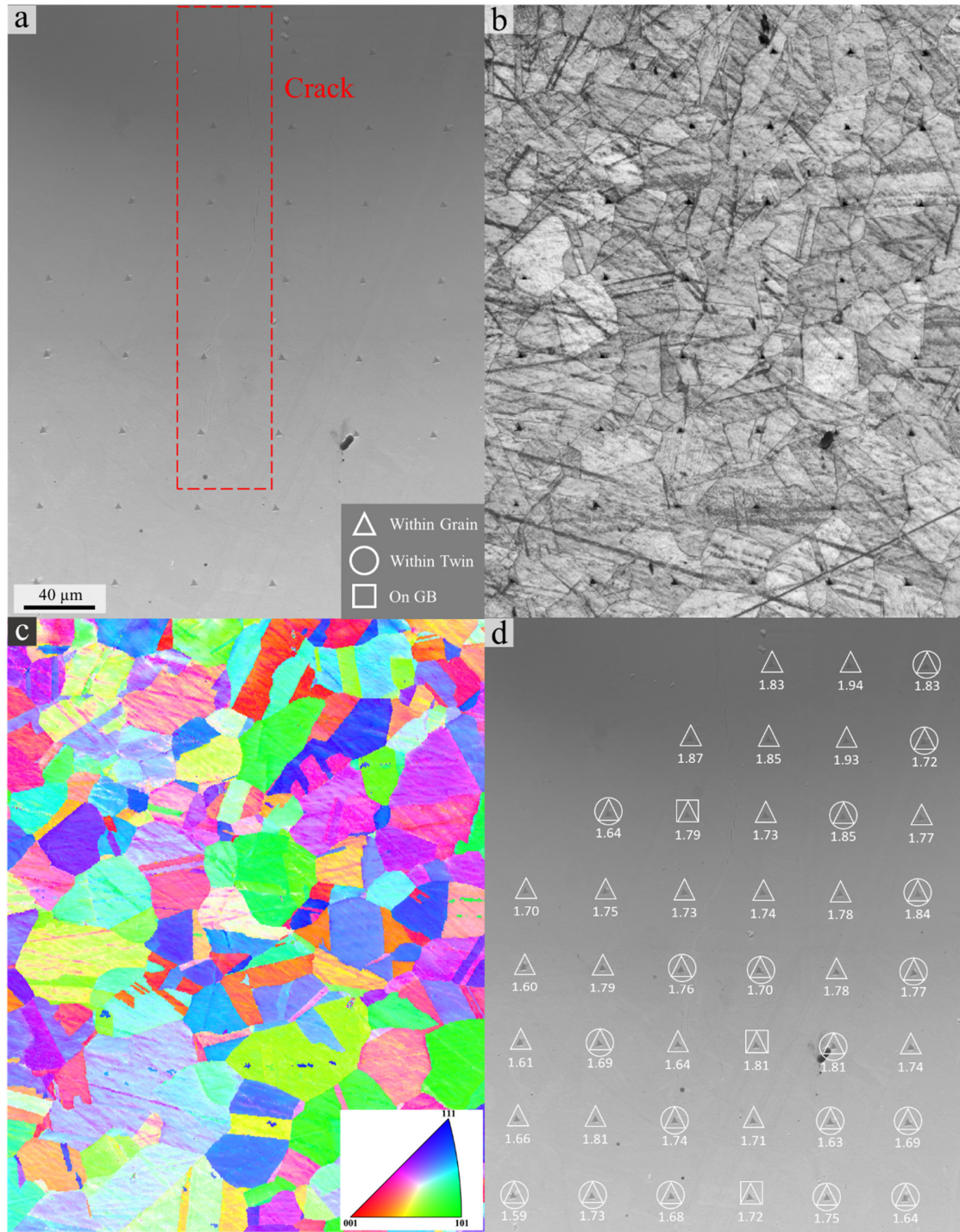


Figure S2. Nanoindentation and EBSD maps of crack #3 region. (a) SEM image with crack marked in red; (b,c) EBSD-IQ and IPF maps showing the grain structure; (d) SEM image annotated with hardness and triangle indentation position, with circle and square marks indicating that the corresponding indent is located on GBs or within a twin, respectively.

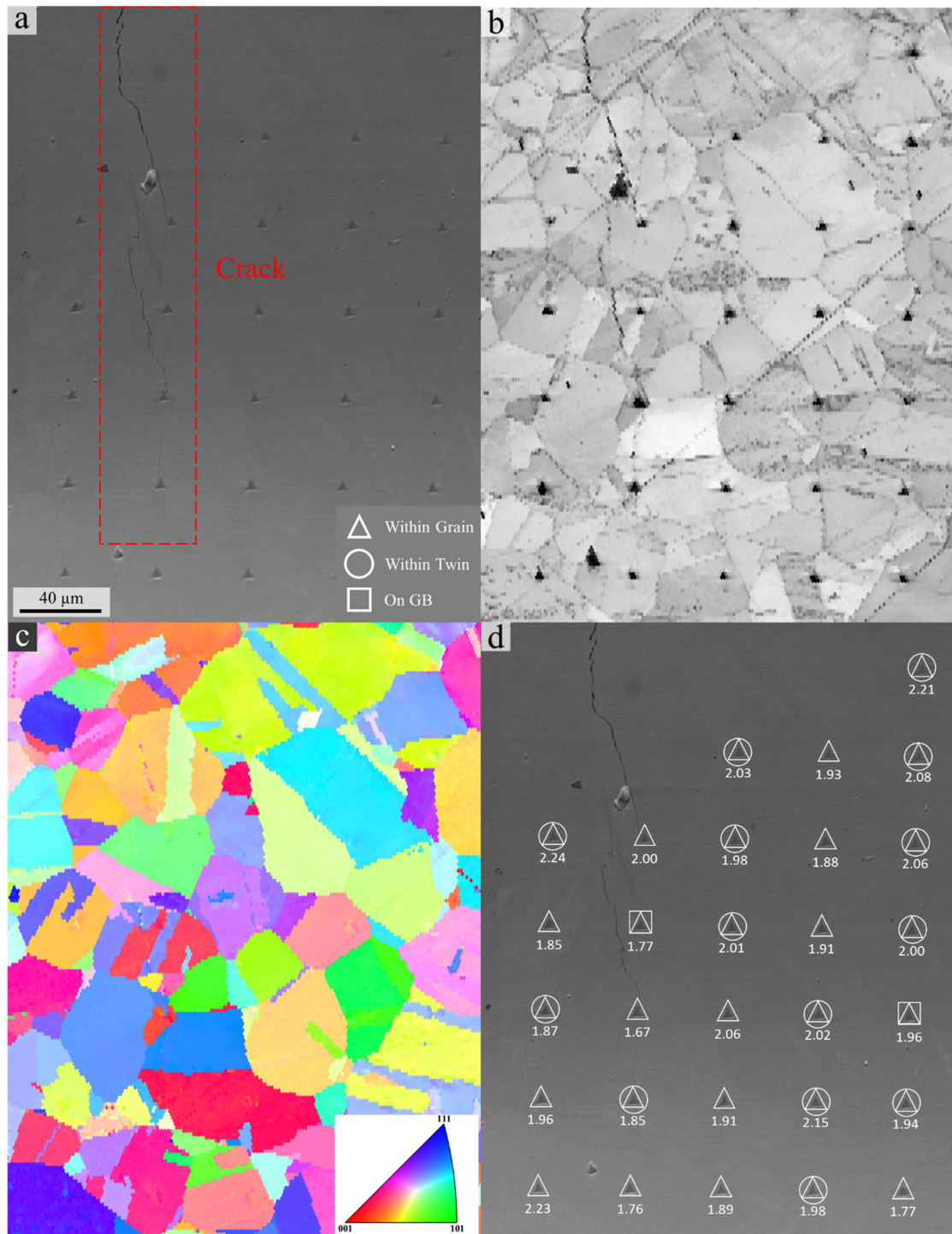


Figure S3. Nanoindentation and EBSD maps of crack #4 region. (a) SEM image with crack marked in red; (b,c) EBSD-IQ and IPF maps showing the grain structure; (d) SEM image annotated with hardness and triangle indentation position, with circle and square marks indicating that the corresponding indent is located on GBs or within a twin, respectively.

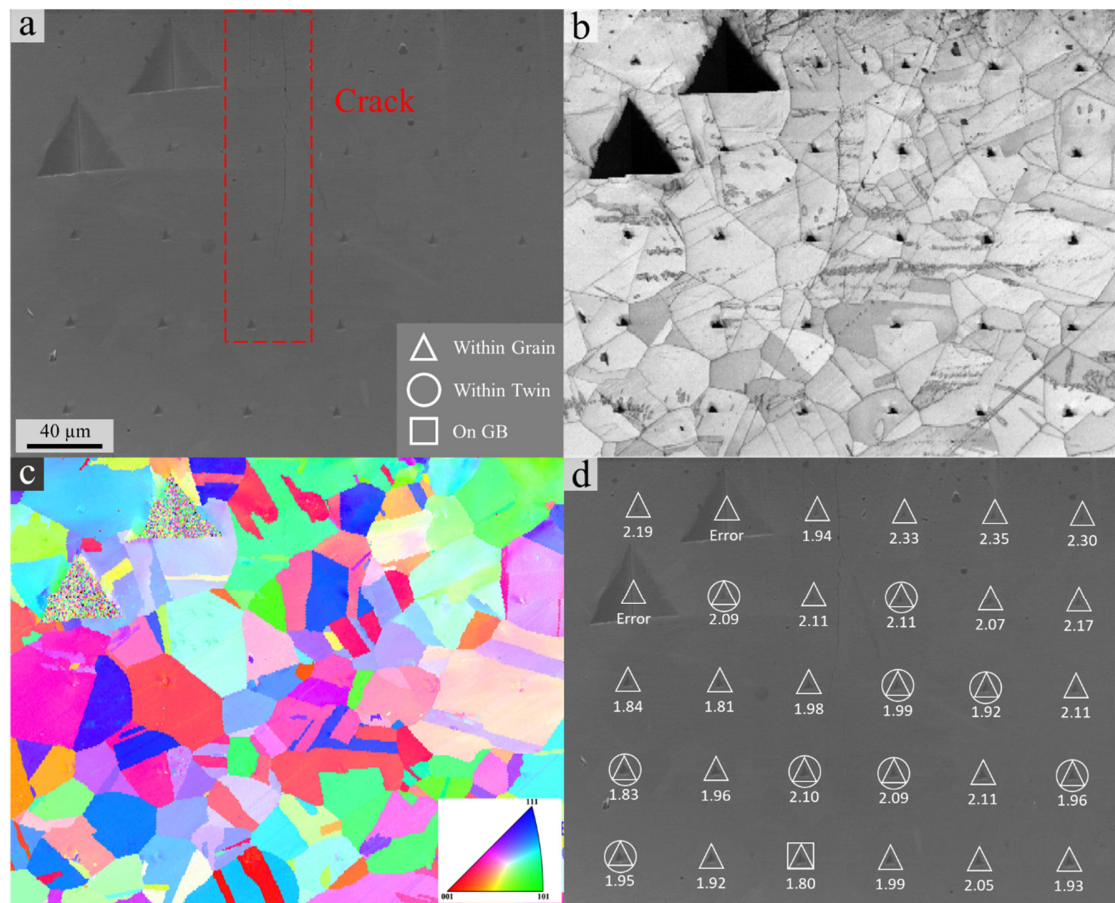


Figure S4. Nanoindentation and EBSD maps of crack #5 region. (a) SEM image with crack marked in red; (b,c) EBSD-IQ and IPF maps showing the grain structure; (d) SEM image annotated with hardness and triangle indentation position, with circle and square marks indicating that the corresponding indent is located on GBs or within a twin, respectively.

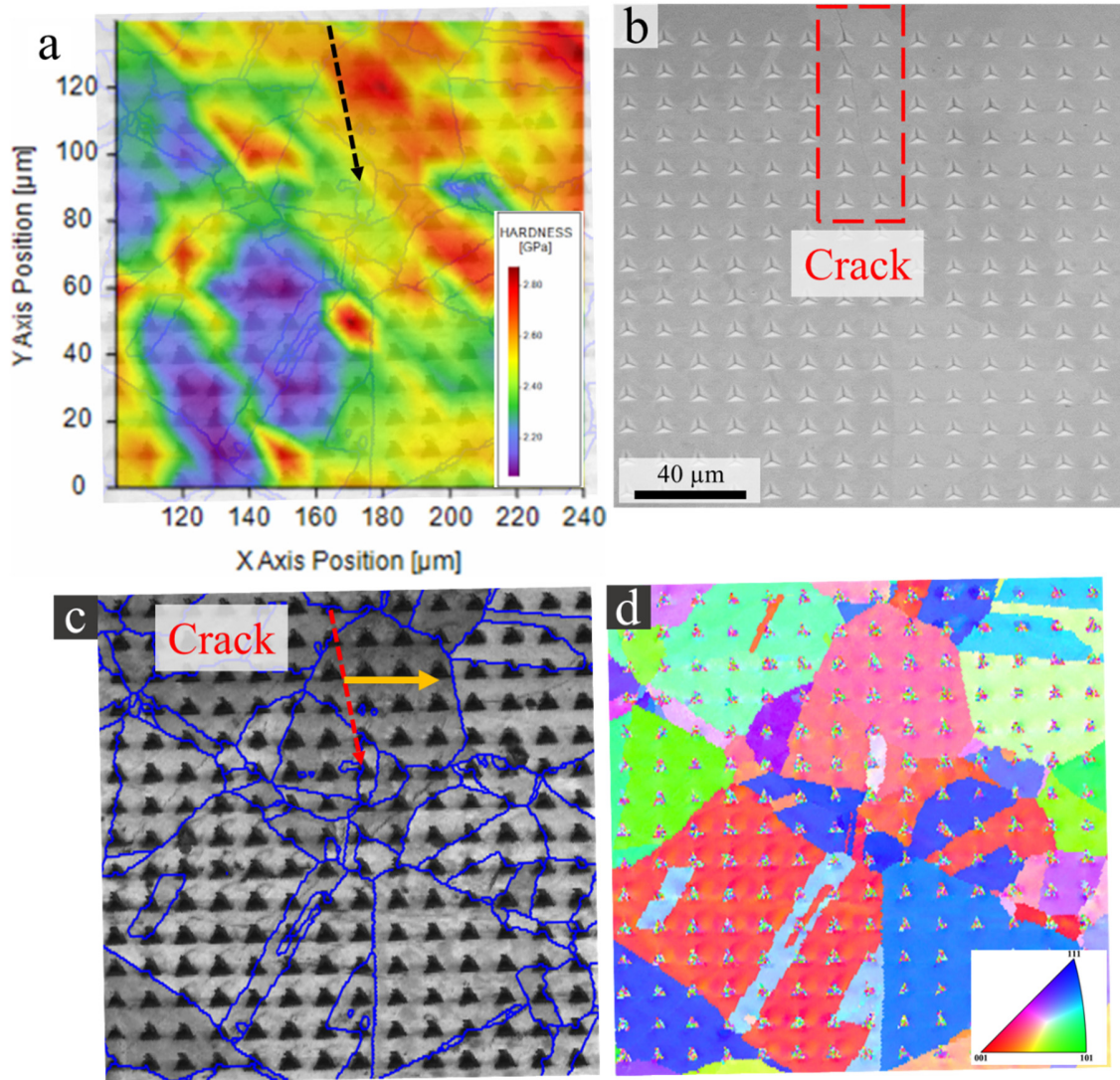


Figure S5. Crack #7 region: (a) NanoBlitz maps overlaid with EBSD-IQ map for identification of grain structure, with the crack path marked by the arrow; (b) SEM image of the mapped region with crack area marked in red rectangle; (c,d) EBSD-IQ and IPF maps, with GBs marked in blue, crack path traced with red dashed arrow corresponding to intergranular hardness profiles shown in Figure 8, and orange arrow indicating direction of intragranular hardness profiles shown in Figure 9.

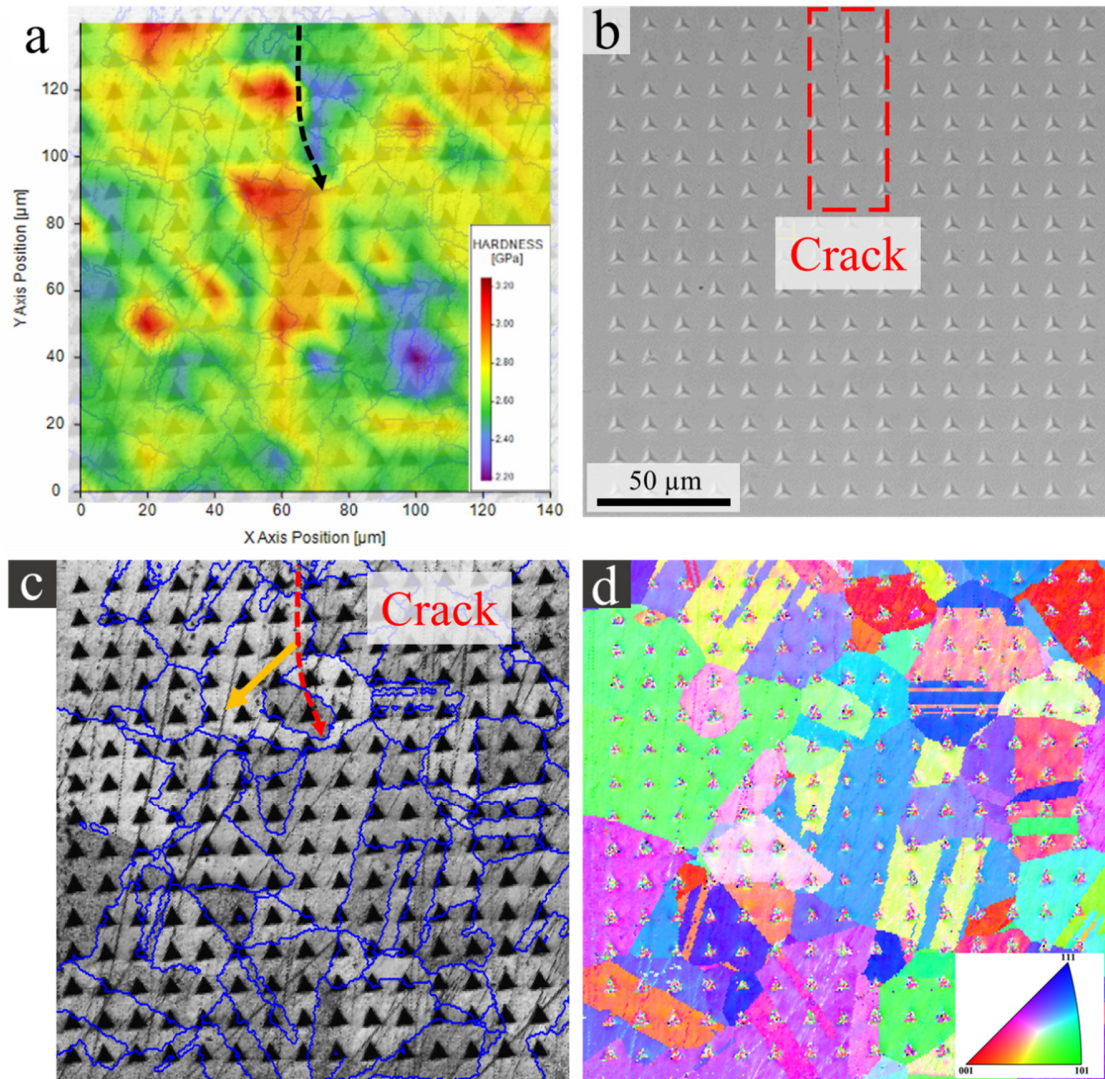


Figure S6. Crack #8 region: (a) NanoBlitz maps overlaid with EBSD-IQ map for identification of grain structure, with the crack path marked by the arrow; (b) SEM image of the mapped region with crack area marked in red rectangle; (c,d) EBSD-IQ and IPF maps, with GBs marked in blue, crack path traced with red dashed arrow corresponding to intergranular hardness profiles shown in Figure 8, and orange arrow indicating direction of intragranular hardness profiles shown in Figure 9.