

## Supplementary Information

Figures attached are saved as OriginPro files with associated data in each figure.

Fig. S1 Volumetric powder particle distribution

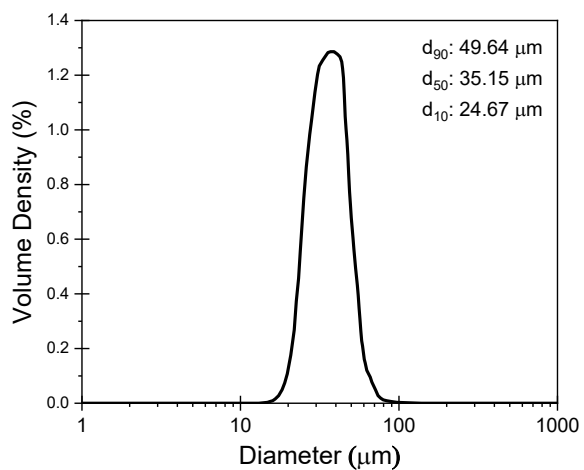


Fig. S2 XRD pattern of powder

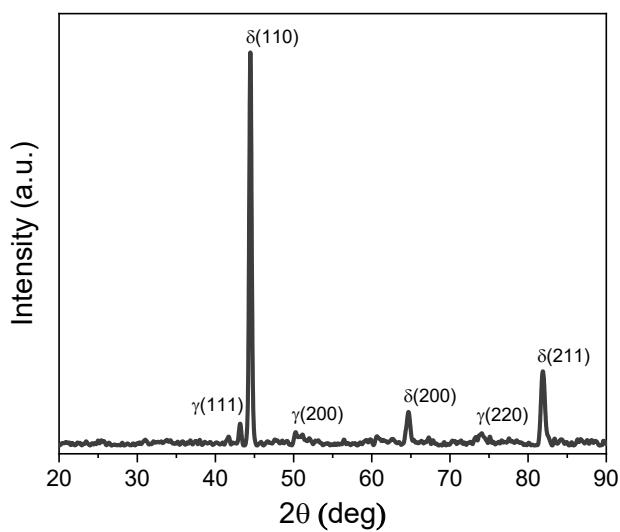


Fig. S3 Sample density and porosity percentage

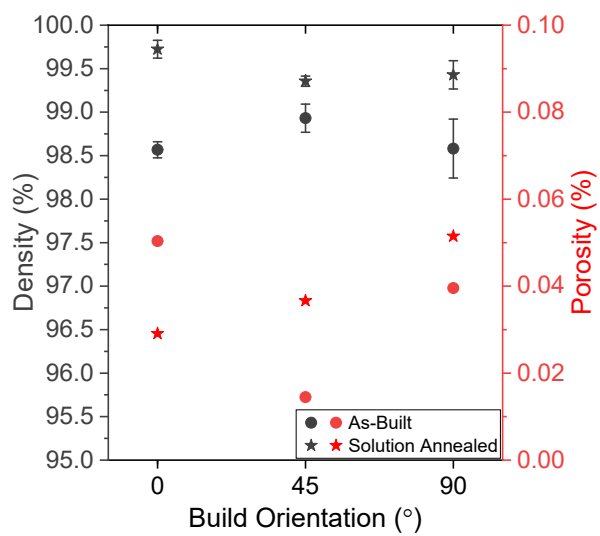


Fig. S4 XRD pattern of as built samples

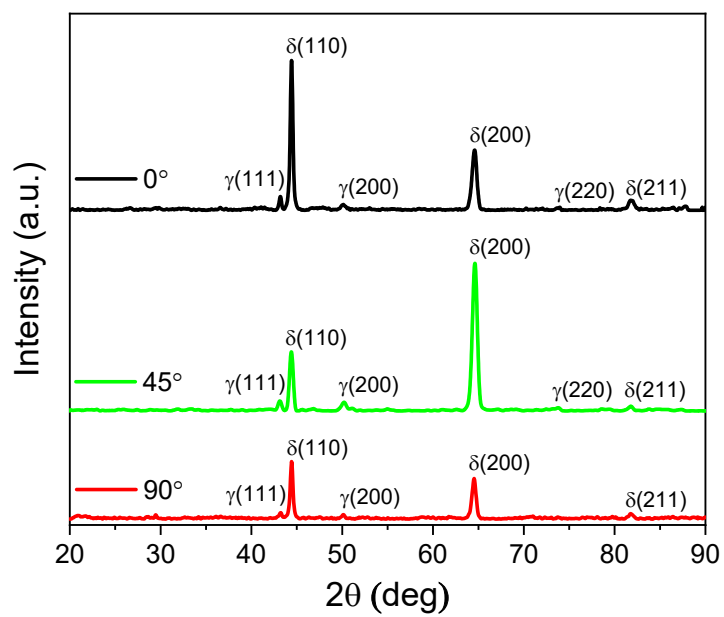


Fig. S5 XRD pattern of solution annealed samples

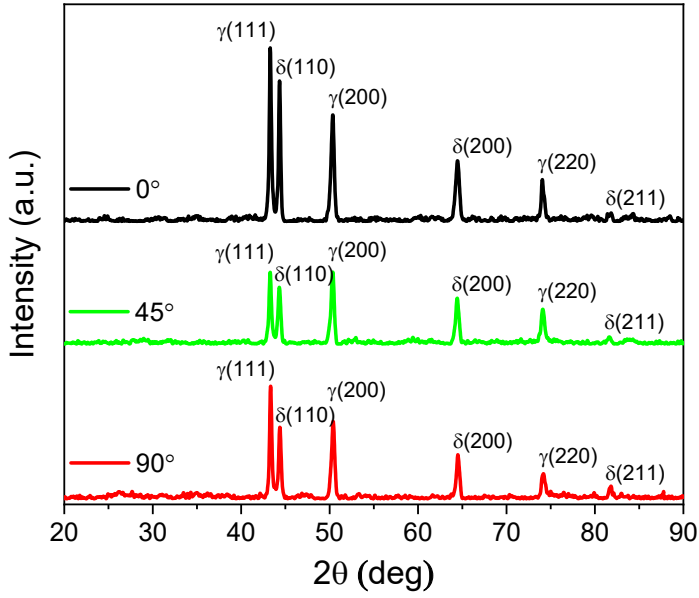


Fig. S6 Misorientation angle histograms of  $\delta$ -ferrite: $\gamma$ -austenite interfaces of As Built samples in the  $0^\circ$  build orientation

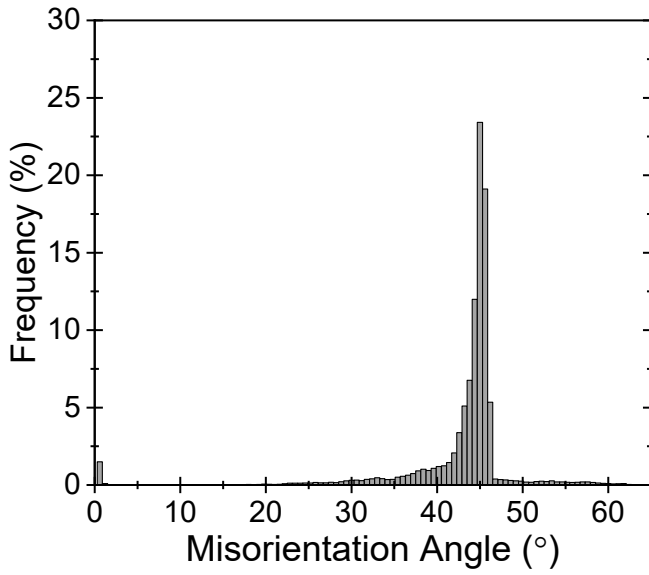


Fig. S7 Misorientation angle histograms of  $\delta$ -ferrite: $\gamma$ -austenite interfaces of As Built samples in the  $45^\circ$  build orientation

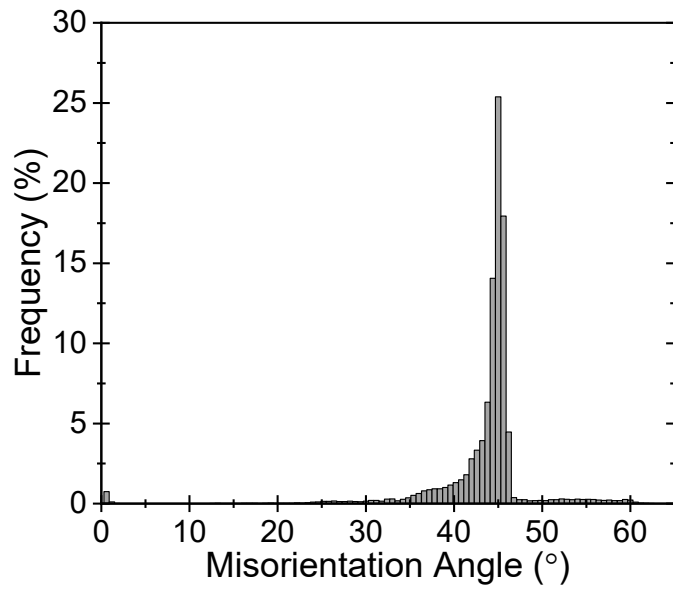


Fig. S8 Misorientation angle histograms of  $\delta$ -ferrite: $\gamma$ -austenite interfaces of As Built samples in the 90° build orientation

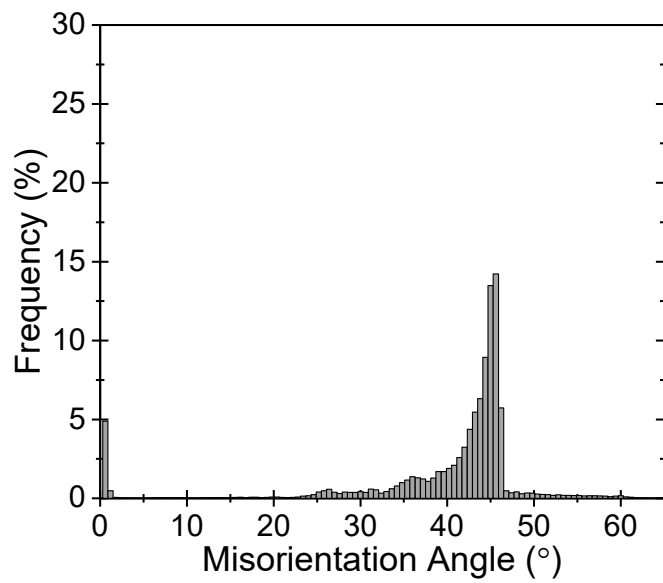


Fig. S9 Misorientation angle histograms of  $\delta$ -ferrite:  $\delta$ -ferrite interfaces of As Built samples in the 0° build orientation

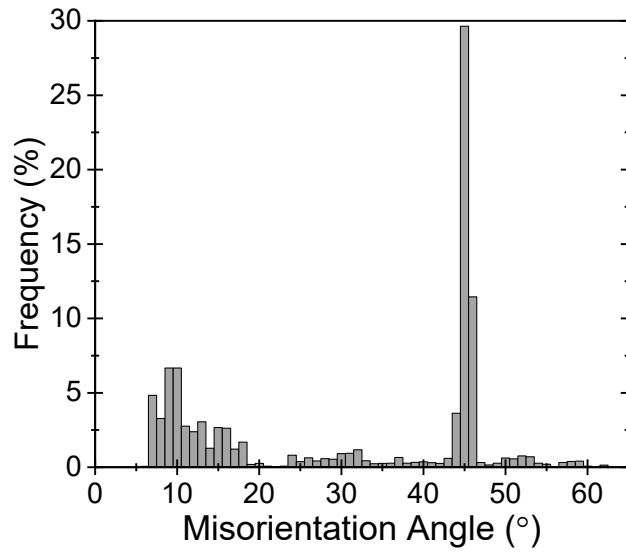


Fig. S10 Misorientation angle histograms of  $\delta$ -ferrite:  $\delta$ -ferrite interfaces of As Built samples in the 45° build orientation

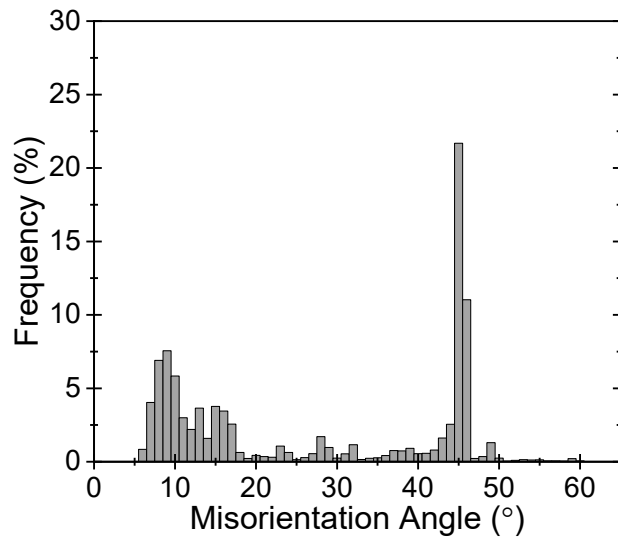


Fig. S11 Misorientation angle histograms of  $\delta$ -ferrite:  $\delta$ -ferrite interfaces of As Built samples in the 90° build orientation

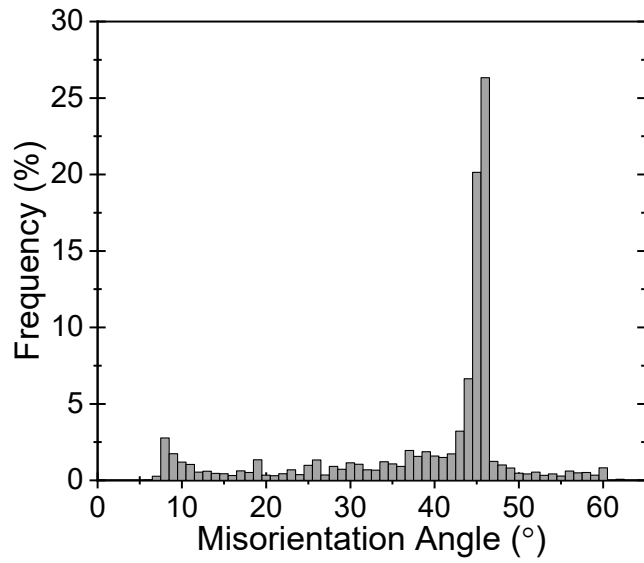


Fig. S12 Misorientation angle histograms of  $\gamma$ -austenite: $\gamma$ -austenite interfaces of As Built samples in the 0° build orientation

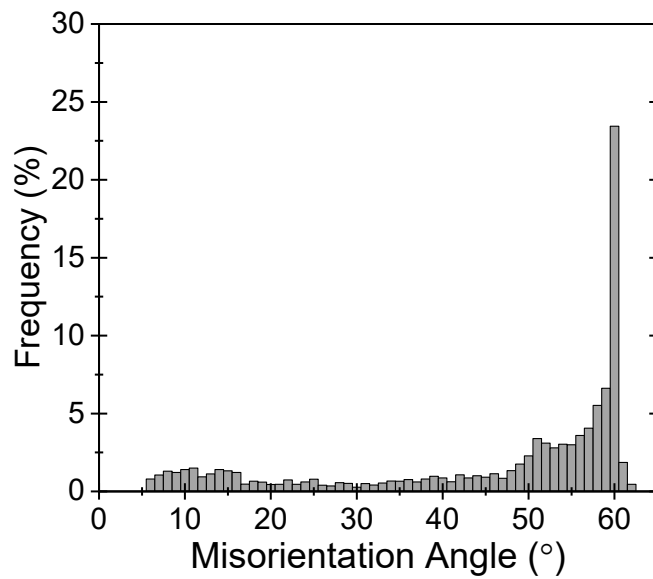


Fig. S13 Misorientation angle histograms of  $\gamma$ -austenite: $\gamma$ -austenite interfaces of As Built samples in the 45° build orientation

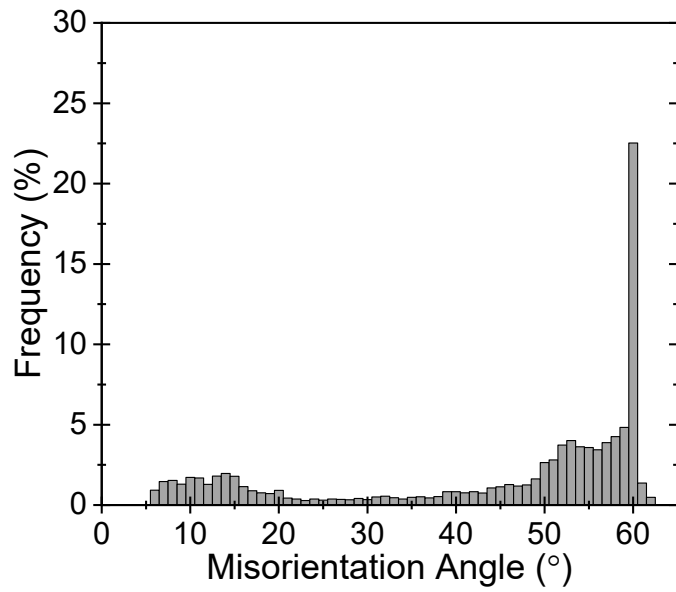


Fig. S14 Misorientation angle histograms of  $\gamma$ -austenite: $\gamma$ -austenite interfaces of As Built samples in the 90° build orientation

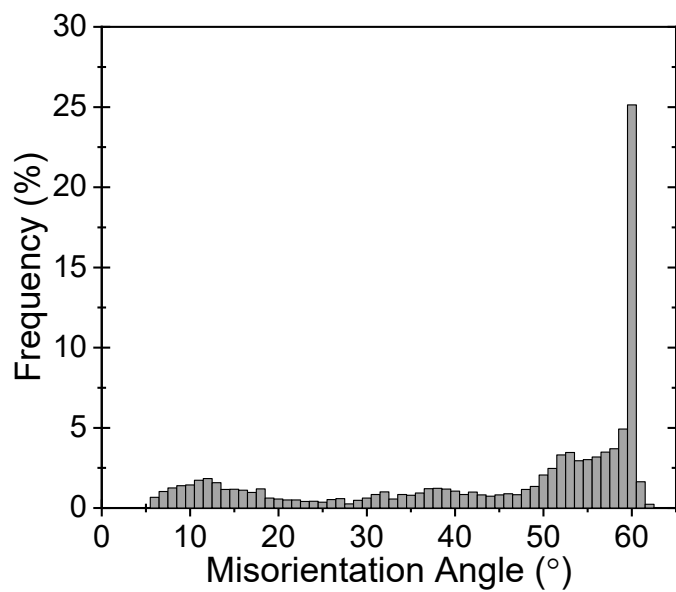


Fig. S15 Misorientation angle histograms of  $\delta$ -ferrite: $\gamma$ -austenite interfaces of Solution Annealed samples in the 0° build orientation

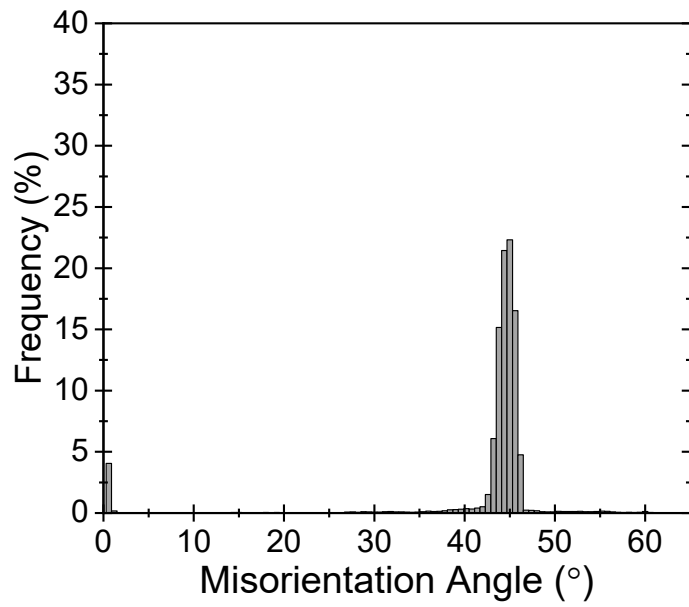


Fig. S16 Misorientation angle histograms of  $\delta$ -ferrite: $\gamma$ -austenite interfaces of Solution Annealed samples in the 45° build orientation

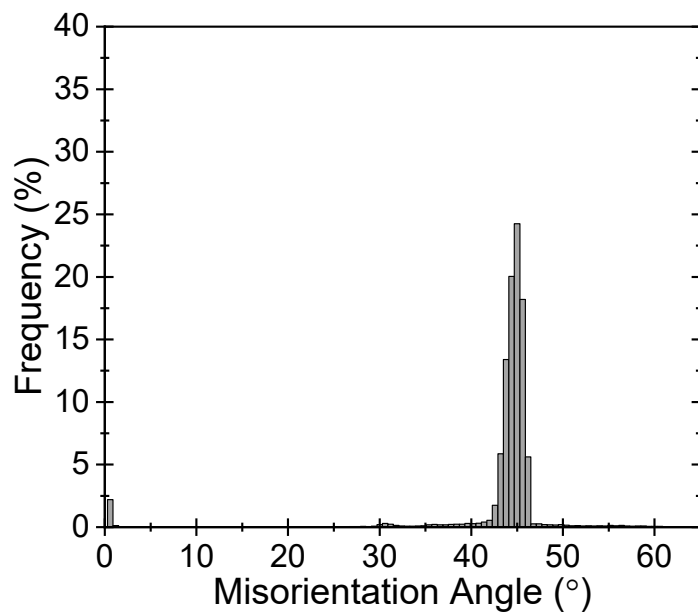


Fig. S17 Misorientation angle histograms of  $\delta$ -ferrite: $\gamma$ -austenite interfaces of Solution Annealed samples in the 90° build orientation



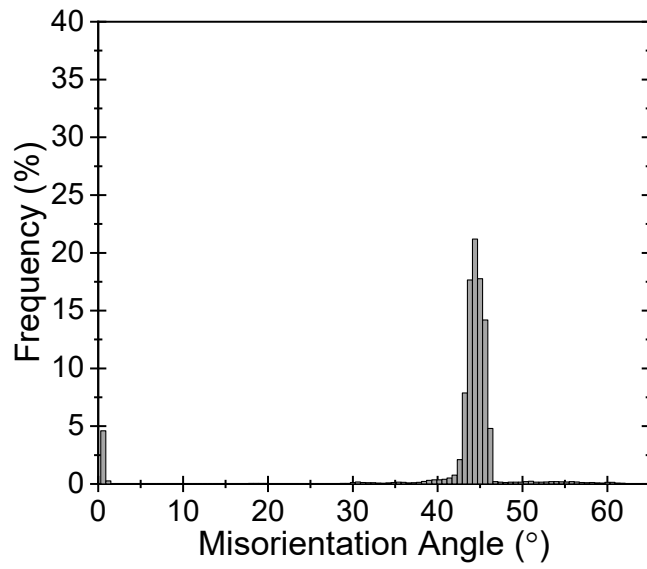


Fig. S18 Misorientation angle histograms of  $\delta$ -ferrite:  $\delta$ -ferrite interfaces of Solution Annealed samples in the 0° build orientation

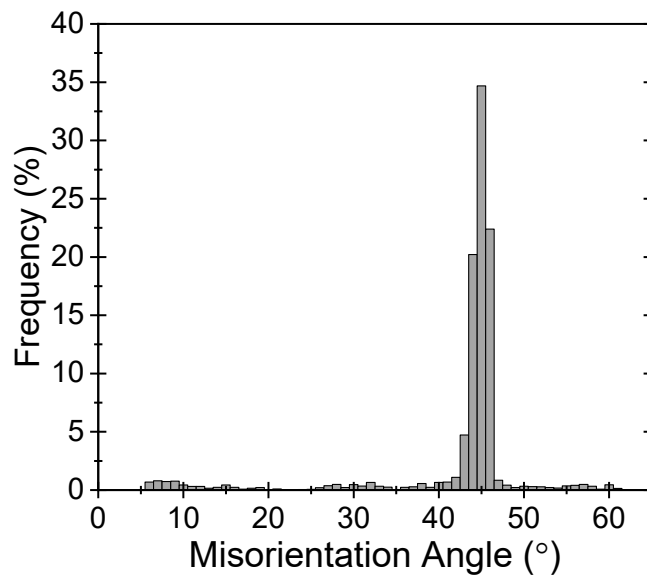


Fig. S19 Misorientation angle histograms of  $\delta$ -ferrite:  $\delta$ -ferrite interfaces of Solution Annealed samples in the 45° build orientation

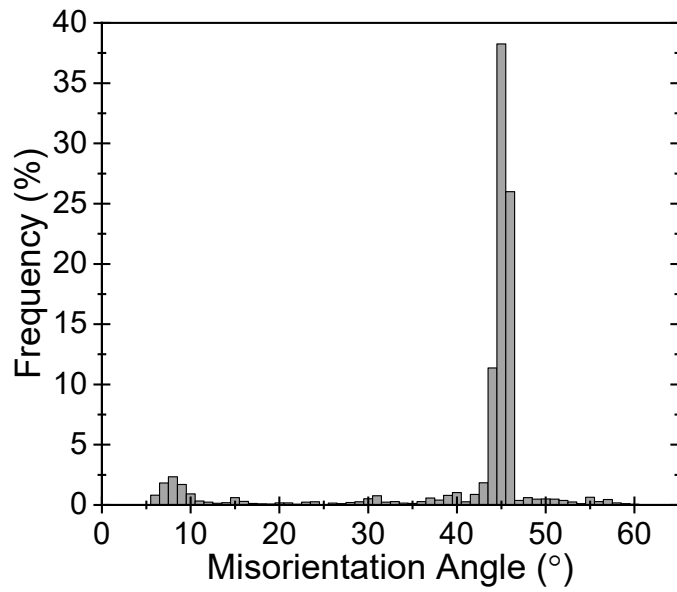


Fig. S20 Misorientation angle histograms of  $\delta$ -ferrite:  $\delta$ -ferrite interfaces of Solution Annealed samples in the 90° build orientation

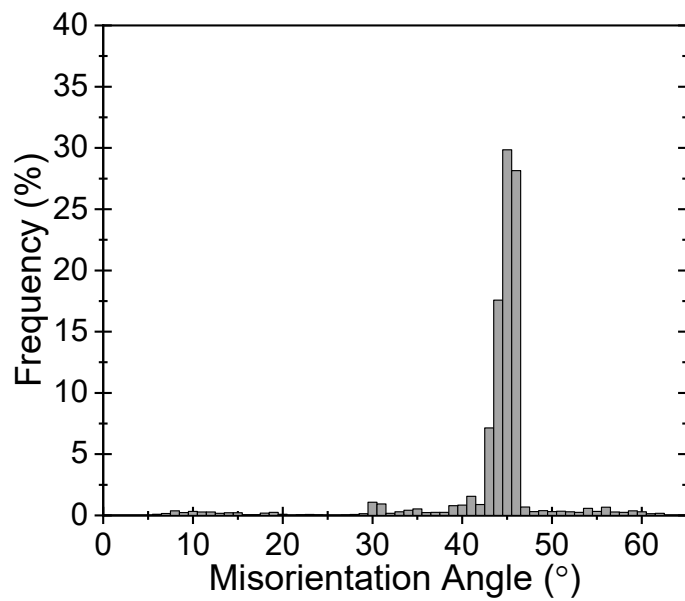


Fig. S21 Misorientation angle histograms of  $\gamma$ -austenite:  $\gamma$ -austenite interfaces of Solution Annealed samples in the 0° build orientation

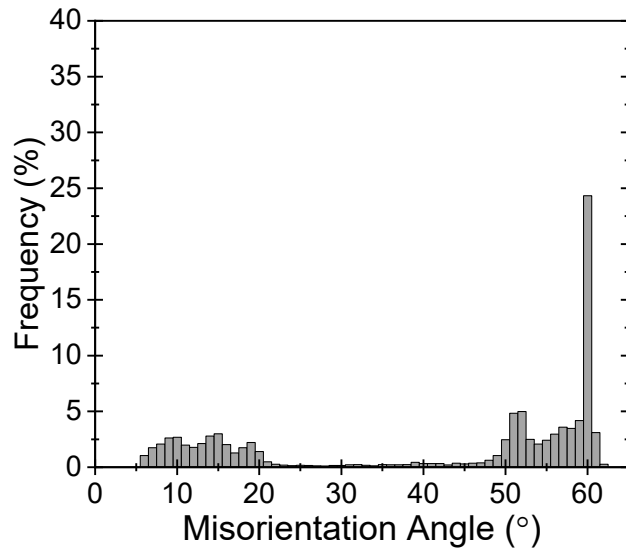


Fig. S22 Misorientation angle histograms of  $\gamma$ -austenite: $\gamma$ -austenite interfaces of Solution Annealed samples in the 45° build orientation

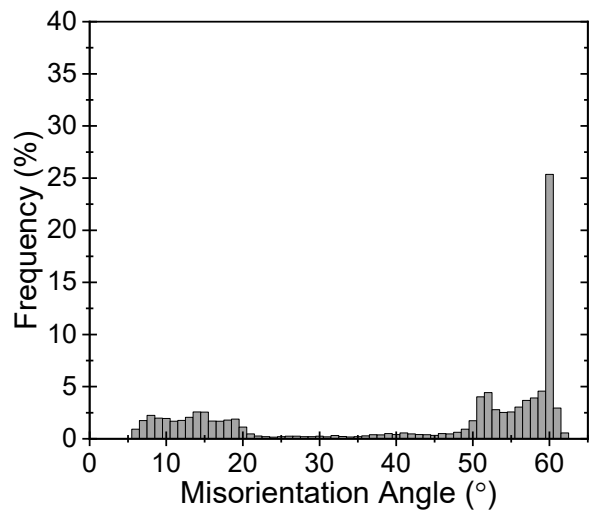


Fig. S23 Misorientation angle histograms of  $\gamma$ -austenite: $\gamma$ -austenite interfaces of Solution Annealed samples in the 90° build orientation

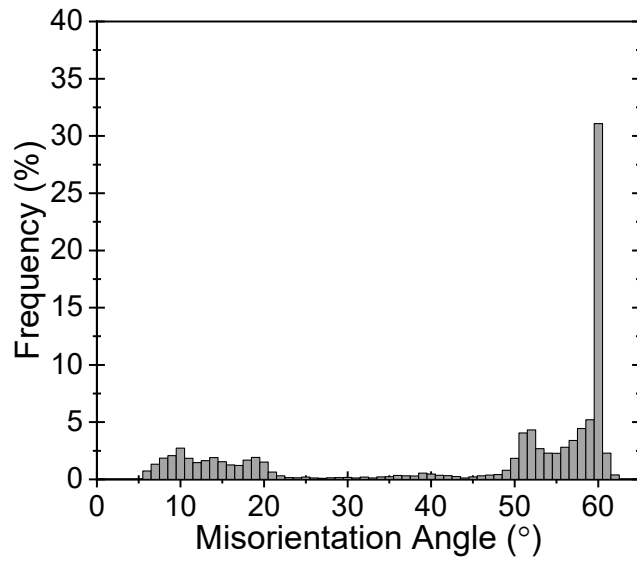


Fig. S24 Instrumented indentation hardness mapping of As-Built sample in the 0° build orientation

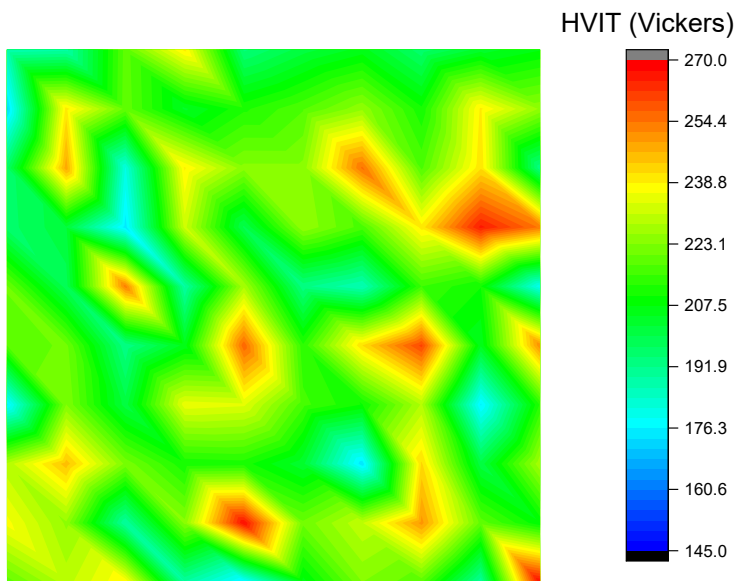


Fig. S25 Instrumented indentation hardness mapping of As-Built sample in the 45° build orientation

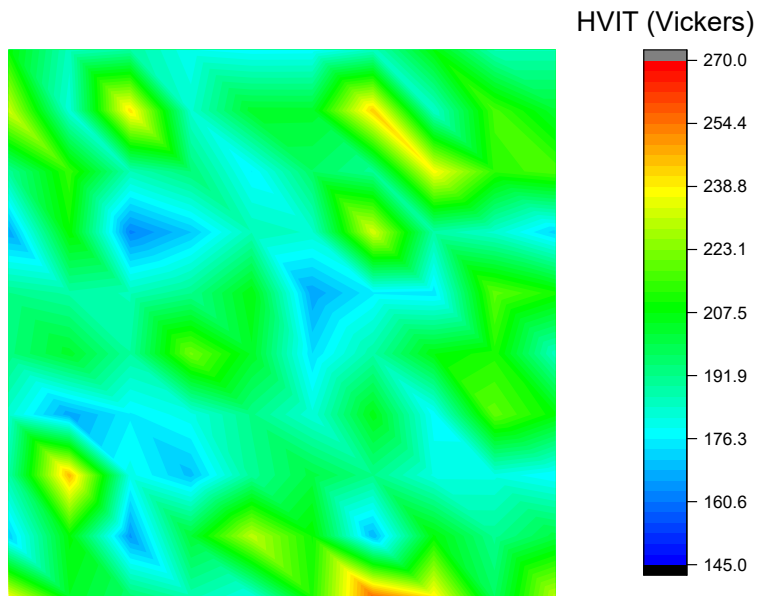


Fig. S26 Instrumented indentation hardness mapping of As-Built sample in the 90° build orientation

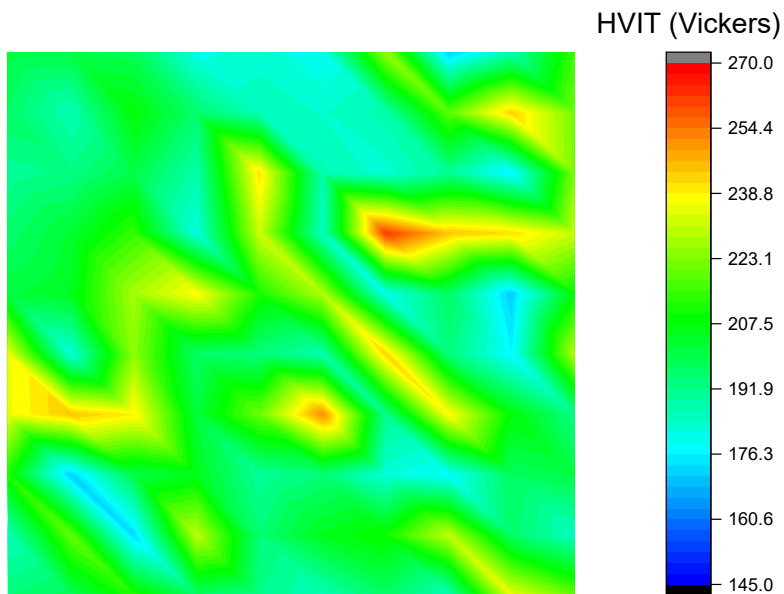


Fig. S27 Instrumented indentation hardness mapping of Solution Annealed sample in the 0° build orientation

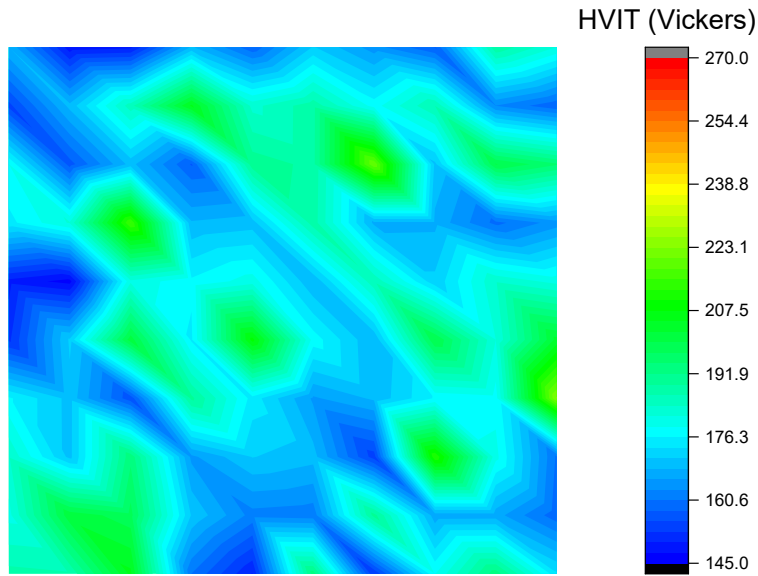


Fig. S28 Instrumented indentation hardness mapping of Solution Annealed sample in the 45° build orientation

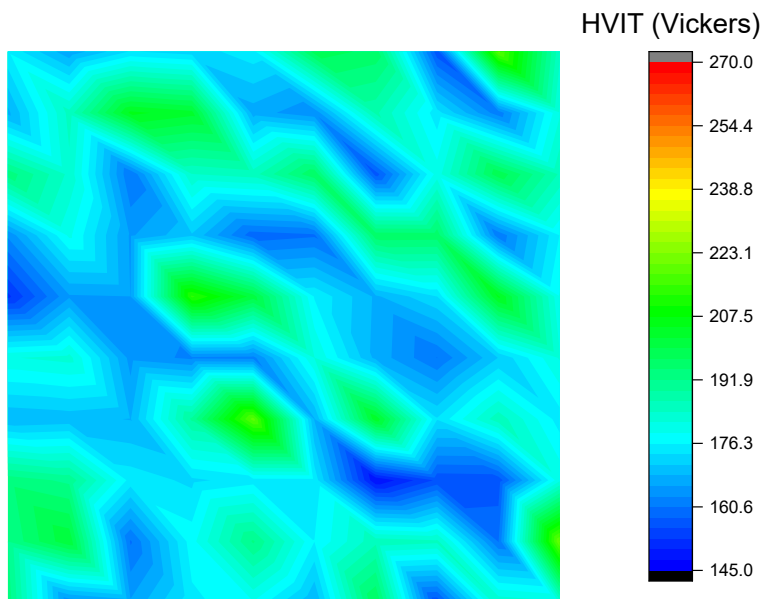


Fig. S29 Instrumented indentation hardness mapping of Solution Annealed sample in the 90° build orientation

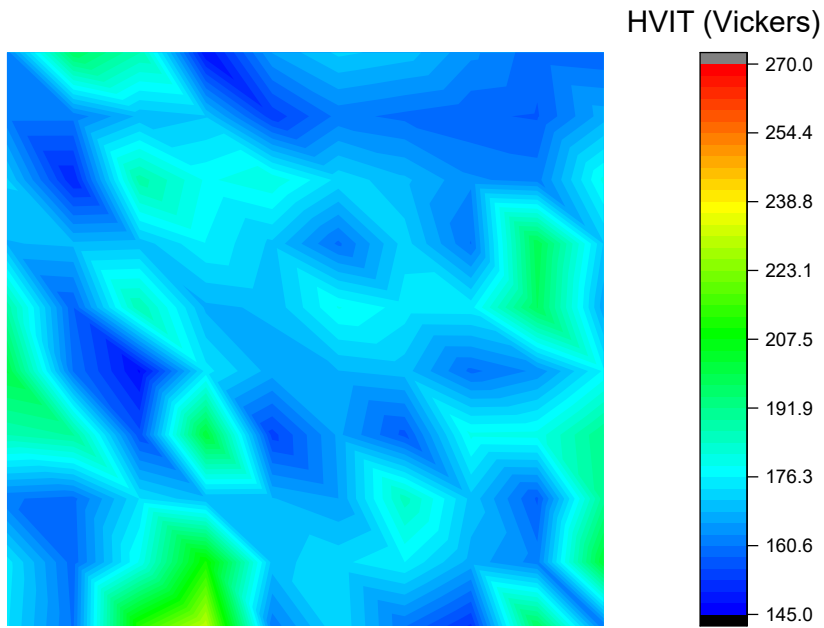


Fig. S30 Tensile results of As Built samples

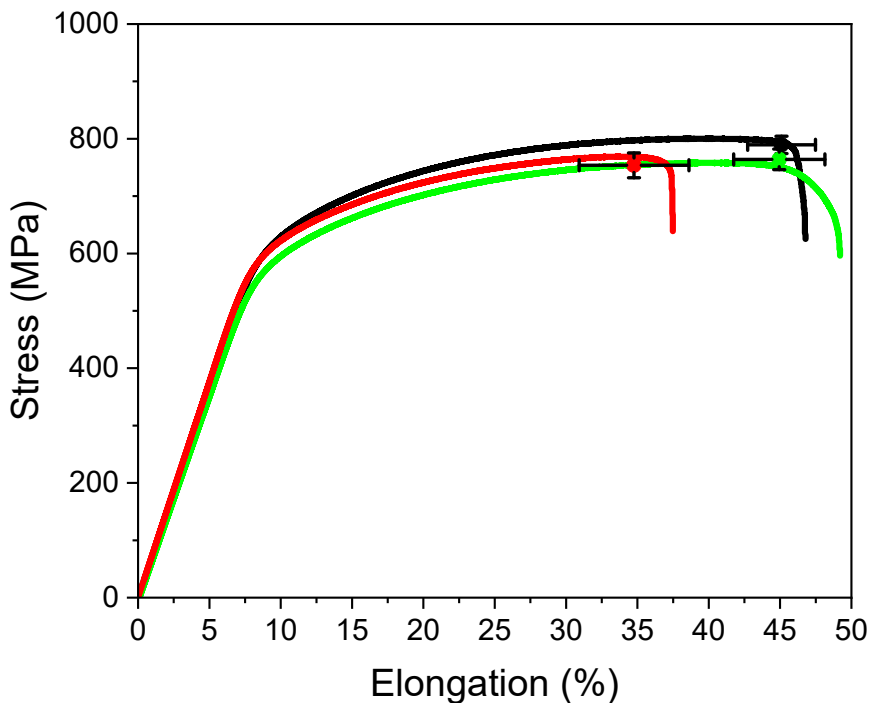


Fig. S31 Tensile results of Solution Annealed samples

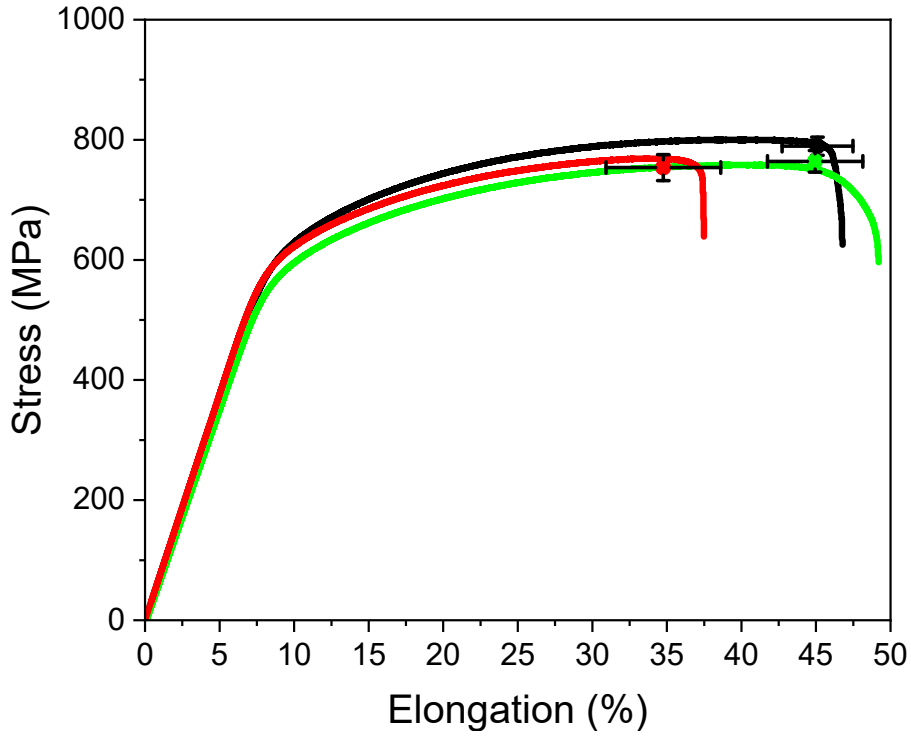


Fig. S32 Corrosion results of As Built samples

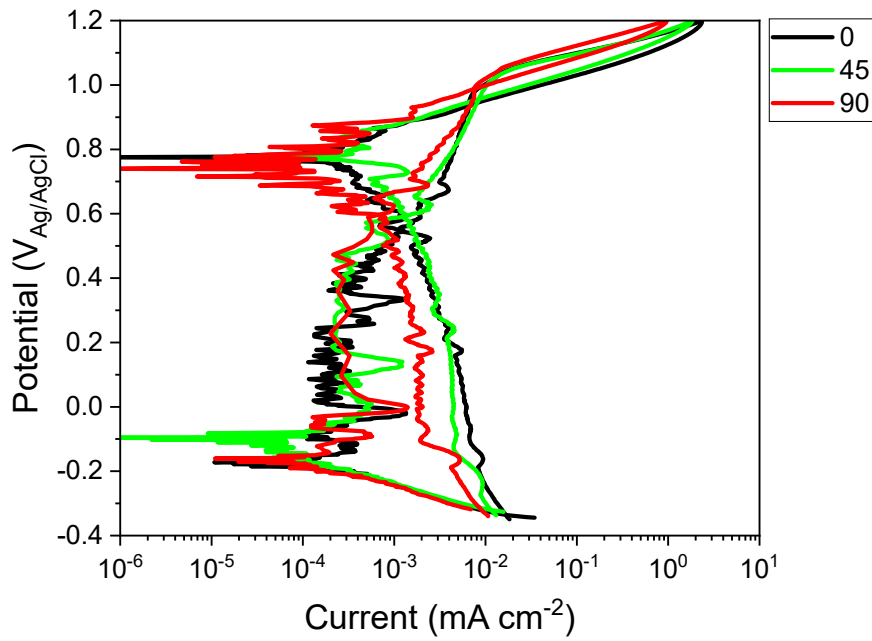


Fig. S33 Corrosion results of Solution Annealed samples



