

SUPPLEMENTARY INFORMATION

Effect of cycling conditions on hydride stability of the $\text{Ti}_{11}\text{Nb}_{61}\text{Cr}_{28}$ alloy

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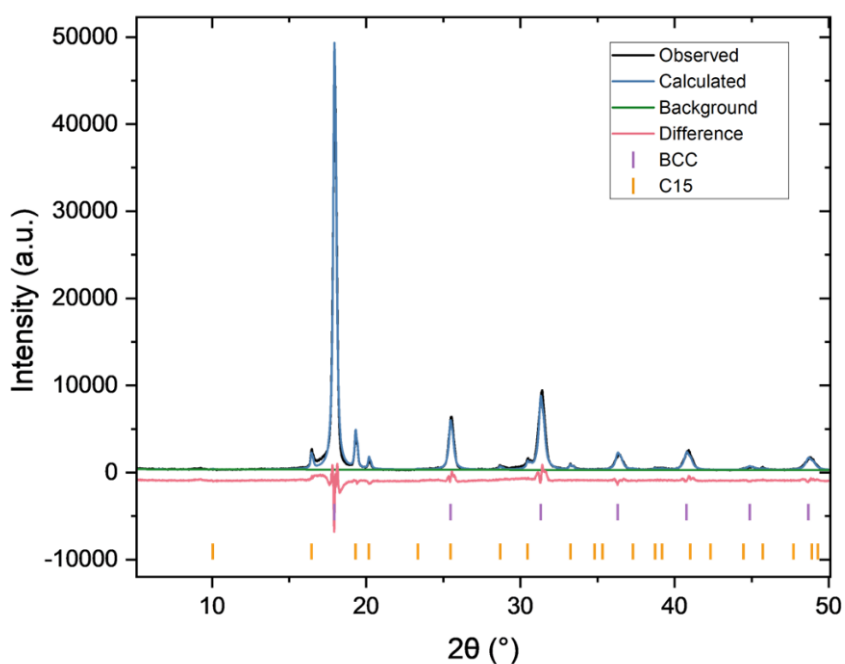


Figure S1: Rietveld refinement of the XRD pattern of the as-cast $\text{Ti}_{11}\text{Nb}_{61}\text{Cr}_{28}$ alloy.

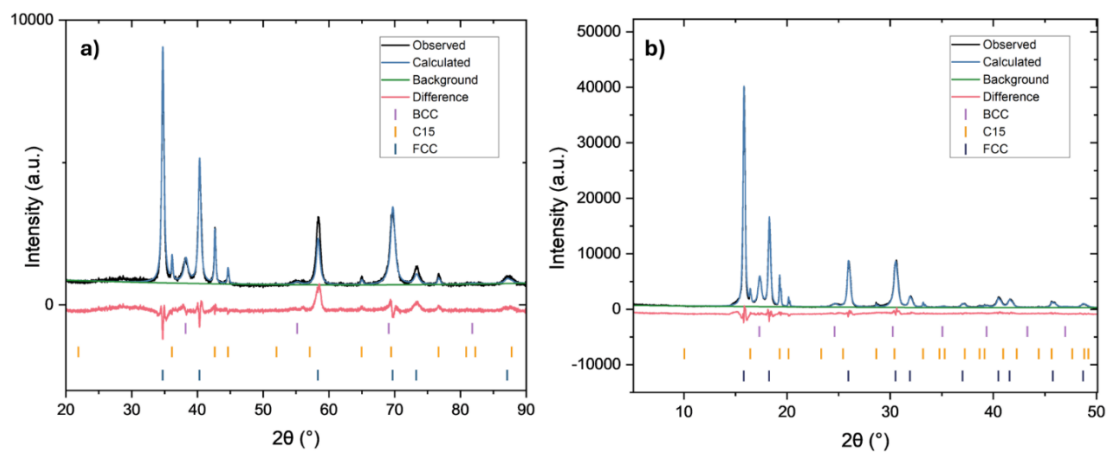


Figure S2: Rietveld refinement of the XRD pattern of the first-hydrogenated $\text{Ti}_{11}\text{Nb}_{61}\text{Cr}_{28}$ alloy, a) 1 day and b) 700 days after hydrogenation.

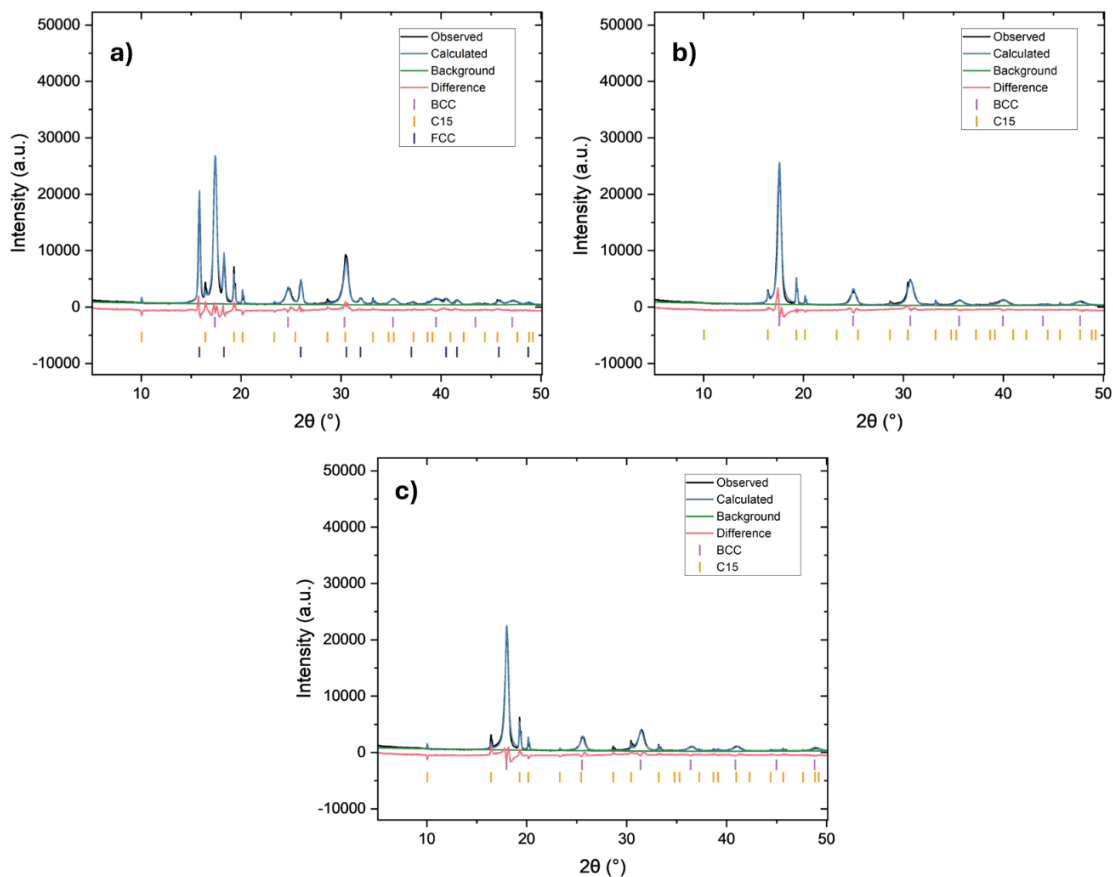


Figure S3: Rietveld refinement of the XRD pattern of the $\text{Ti}_{11}\text{Nb}_{61}\text{Cr}_{28}$ alloy after DSC/TGA measurements up to a) 290 °C, b) 340 °C, and c) 550 °C.

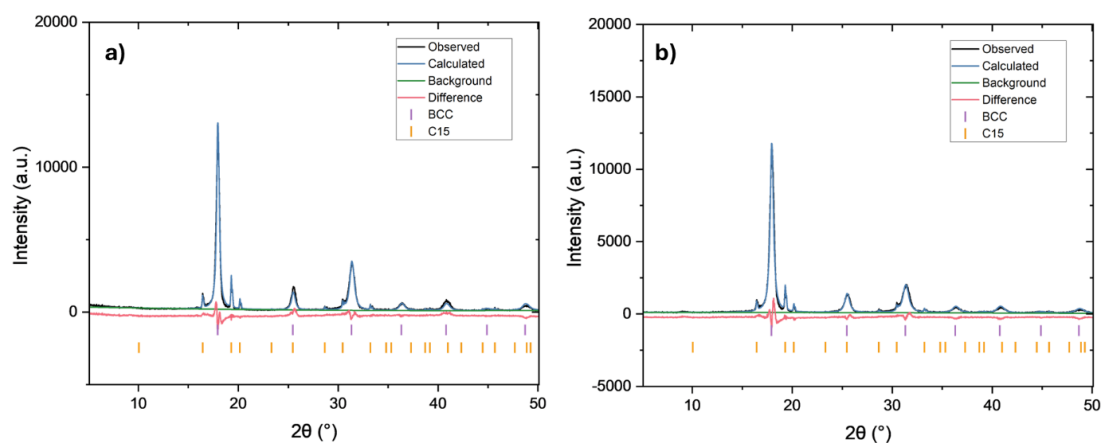


Figure S4: Rietveld refinement of the XRD pattern of the $\text{Ti}_{11}\text{Nb}_{61}\text{Cr}_{28}$ alloy after desorption at 350 °C in the a) 1st and b) 10th cycles.

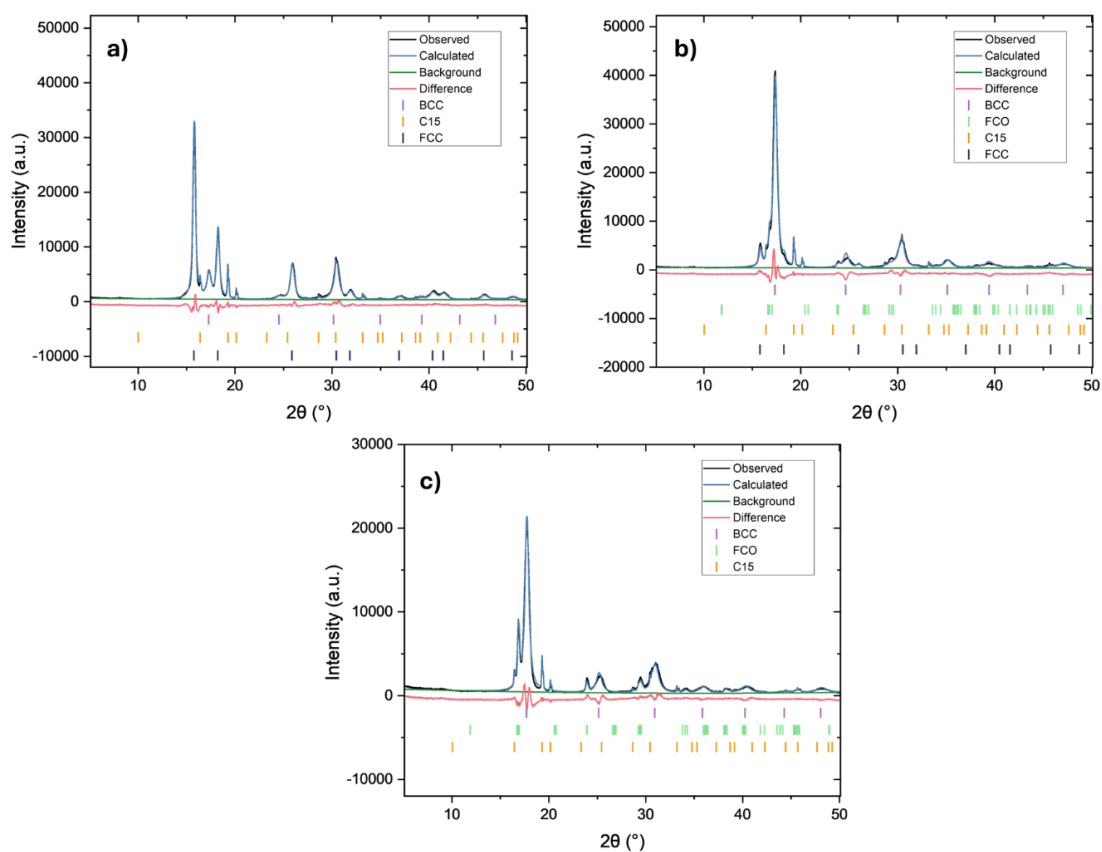


Figure S5: Rietveld refinement of the XRD pattern of the hydrogenated $\text{Ti}_{11}\text{Nb}_{61}\text{Cr}_{28}$ alloy after 10 cycles with absorption at 25 °C and desorption at 350 °C, a) 1 day, b) 120 days, and c) 260 days after hydrogenation.

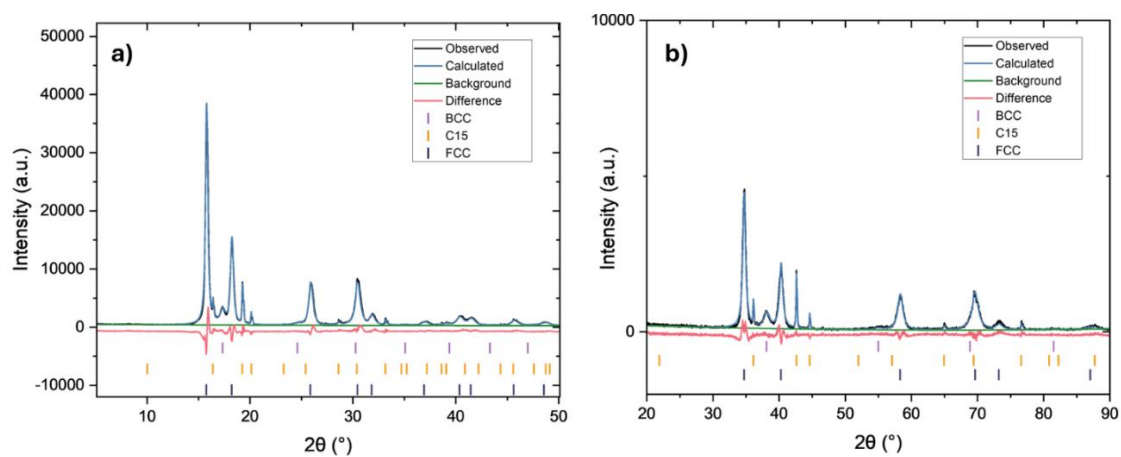


Figure S6: Rietveld refinement of the XRD pattern of the hydrogenated $\text{Ti}_{11}\text{Nb}_{61}\text{Cr}_{28}$ alloy after 20 cycles with absorption and desorption at 25 °C, a) 1 day and b) 120 days after hydrogenation.