

Supplementary Information

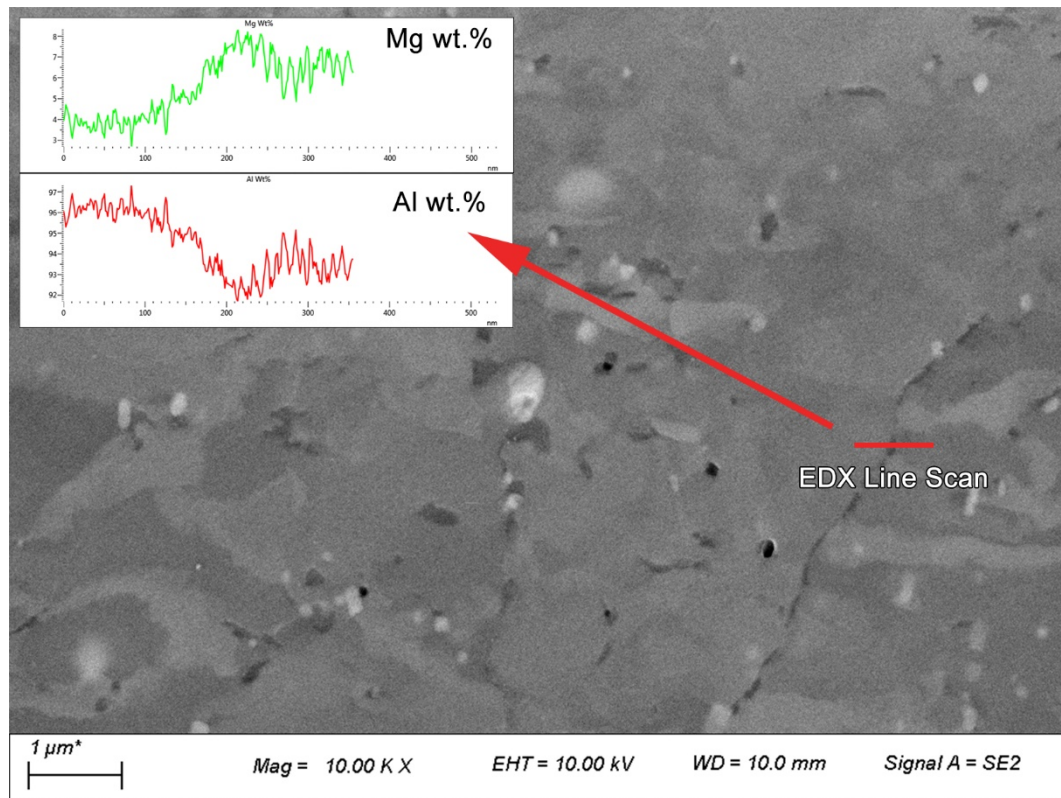


Figure S1. SEM/EDX analysis of the Mg enrichment along the grain boundaries, indicating the presence of β - Al_3Mg_2 phase.

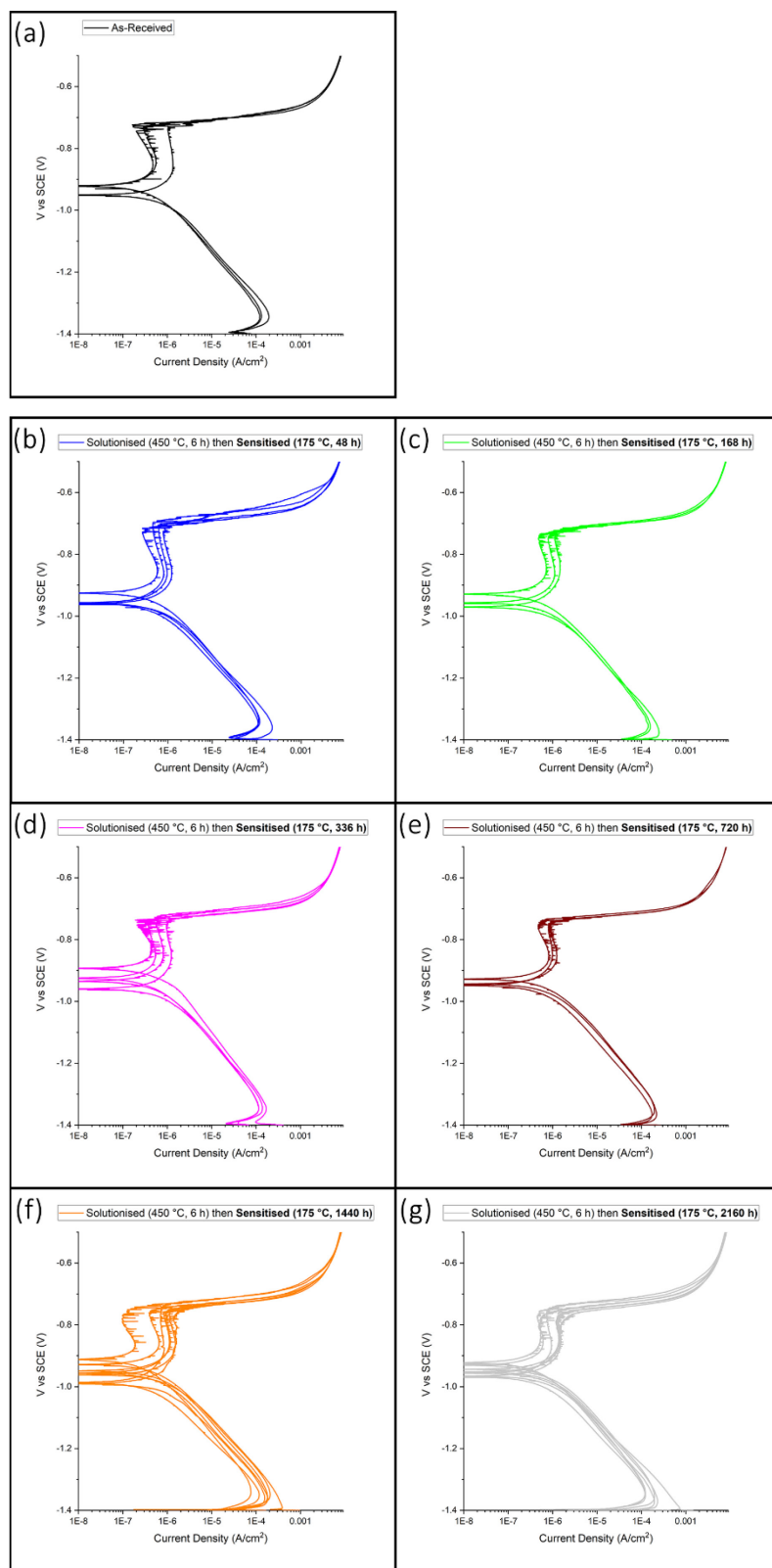


Figure S2. Potentiodynamic polarisation curves for the AA5083 (a) as-received microstructure, and the (b)-(g) sensitised microstructures in deaerated 3.5 wt.% NaCl electrolyte. The sensitised microstructures have undergone the additional isothermal heat treatment at 175 °C for (b) 48 hours, (c) 168 hours, (d) 336 hours, (e) 720 hours, (f) 1440 hours, and (g) 2160 hours. Each curve was done on a separate freshly-polished AA5083 sample.

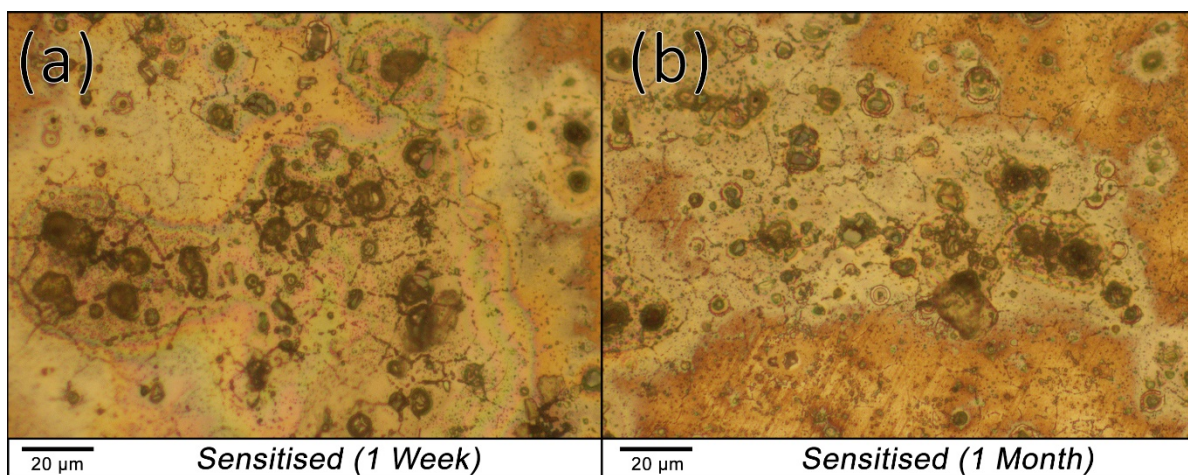


Figure S3. OM analysis of the sensitised AA5083 microstructure after the full potentiodynamic polarisation test (starting at -1.4 V vs SCE) for the isothermally heat-treated (a) 175 °C for 1 week sample, and the (b) 175 °C for 1 month sample.

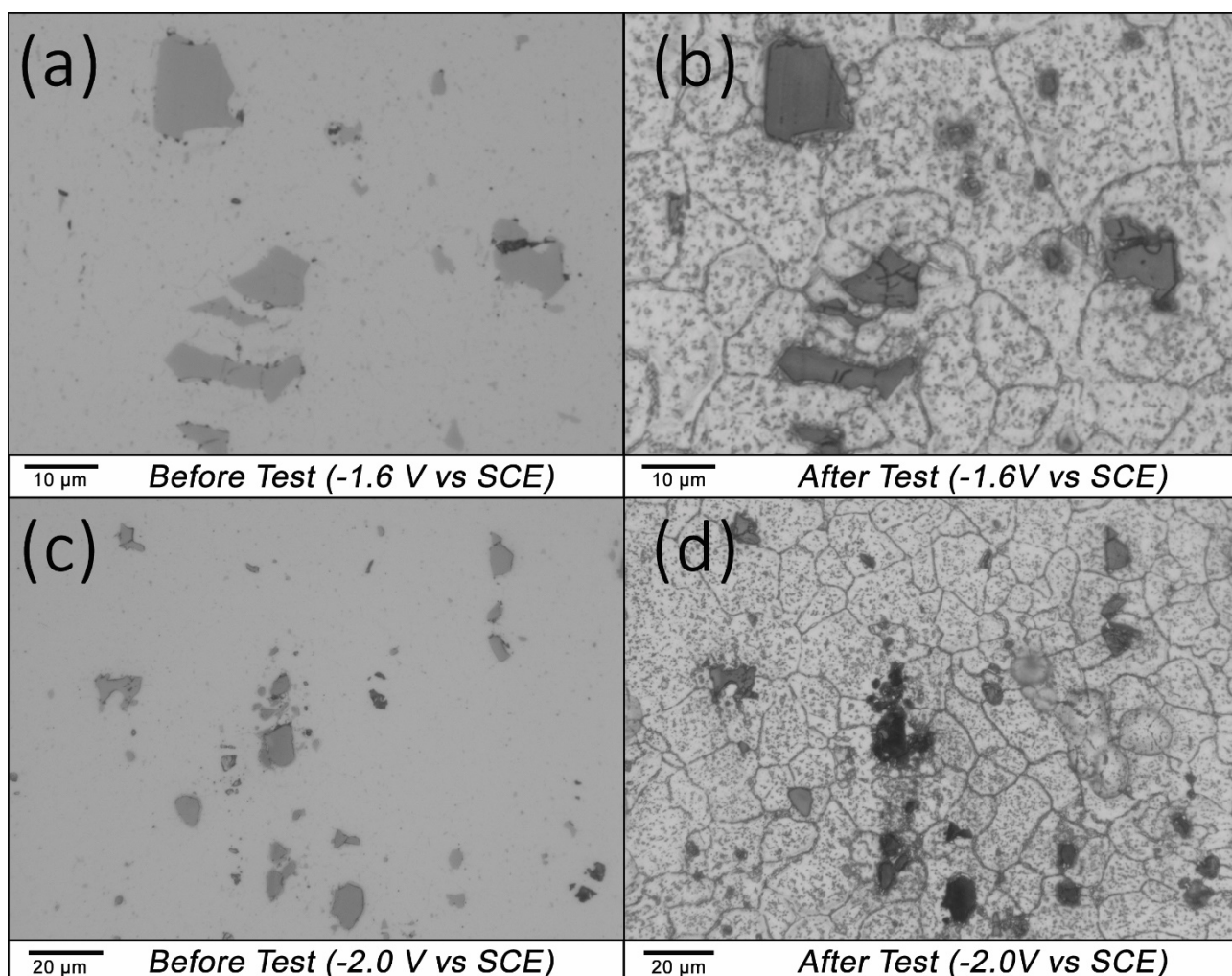


Figure S4. OM analysis of the AA5083 heavily sensitised (175 °C for 3 months) microstructure (a),(c) before and (b),(d) after the potentiostatic hold at (a),(b) -1.6 V vs SCE and at (c),(d) -2.0 V vs SCE.