Supplementary Material

A high-resolution synchrotron-based diffraction technique for in-situ characterisation of deformation behaviour in magnesium alloys

Zhiyang Wang [a,b,*], Peter A. Lynch [a], Sitarama R. Kada [a], Nicholas Armstrong [c], Ehsan B. Motlagh [a], Justin A. Kimpton [b], Matthew R. Barnett [a]

[a] Institute for Frontier Materials, Deakin University, 75 Pigdons Road, Highton, Victoria 3216, Australia

[b] Australian Synchrotron, 800 Blackburn Road, Clayton, Victoria 3168, Australia

[c] Defence Science and Technology Organisation, Fishermans Bend, Victoria 3207, Australia

* Corresponding author. E-mail: zhiyang.wang@synchrotron.org.au; Tel.: +61 03 85405397

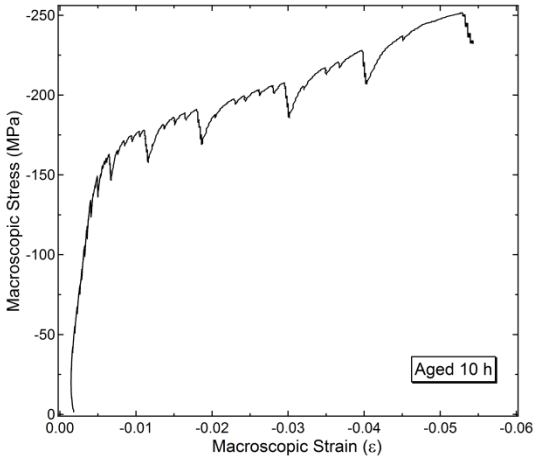

Figure S1. A macroscopic stress-strain curve measured with the micro-deformation stage during in-situ compression on an aged Mg-alloy sample.

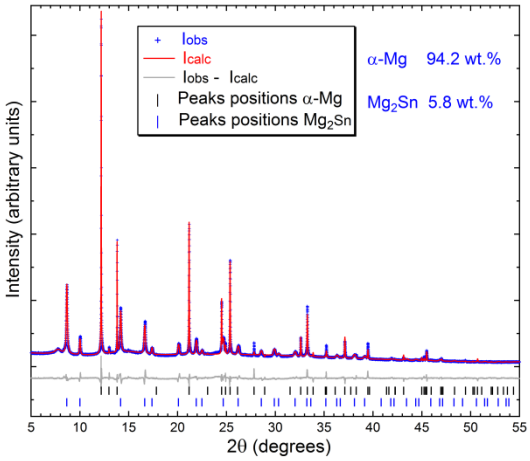

Figure S2. Rietveld refinement with Synchrotron X-ray diffraction data measured from the aged Mg–Sn based alloy sample at the nominal load. The phase fractions obtained from the analysis are indicated. The fit agreement factor R_{wp} = 12.4%.