

Anisotropy in the thermal expansion of uranium silicide measured by neutron diffraction

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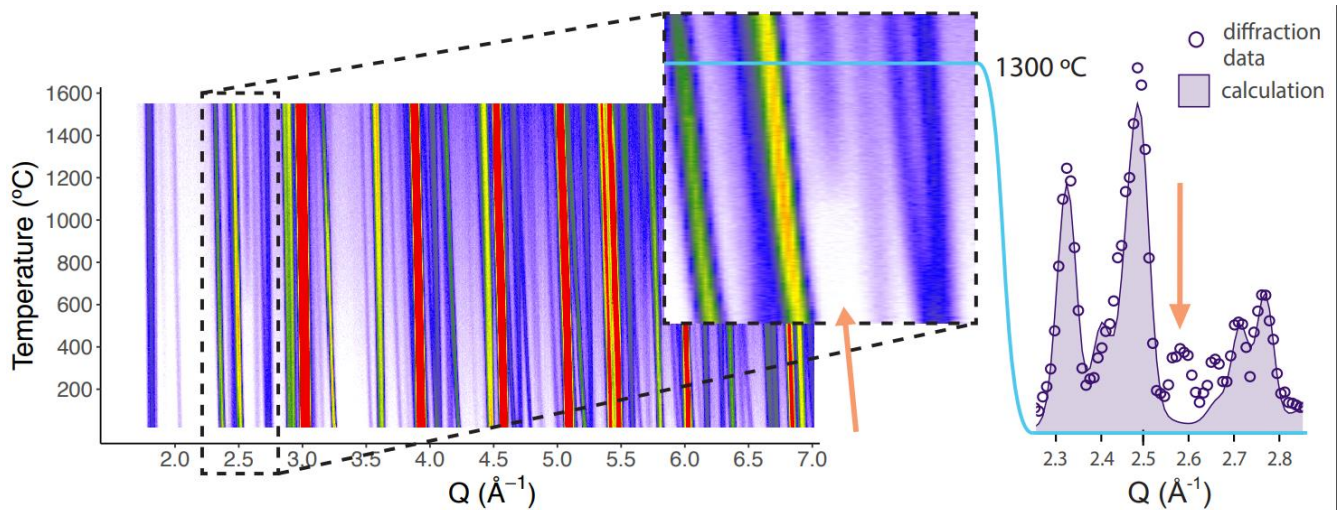
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Figures and Captions for Obbard et al. 'Anisotropy in the thermal expansion of uranium silicide measured by neutron diffraction'



Graphical Abstract

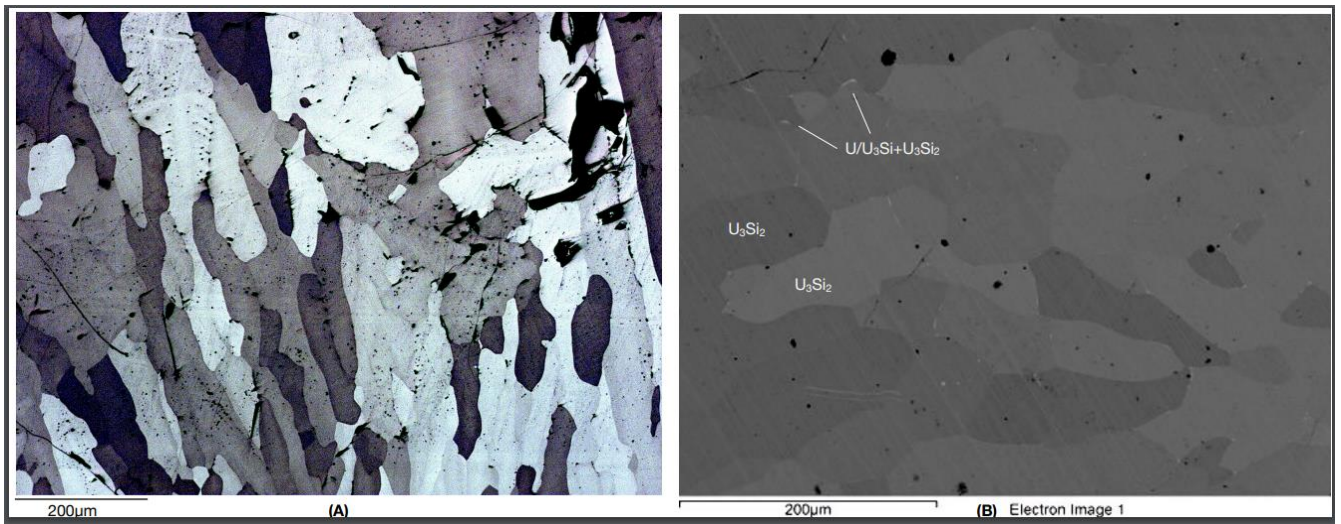


Figure 1: (a) Optical micrograph and (b) backscattered electron SEM micrograph of as-cast U_3Si_2 sample material.

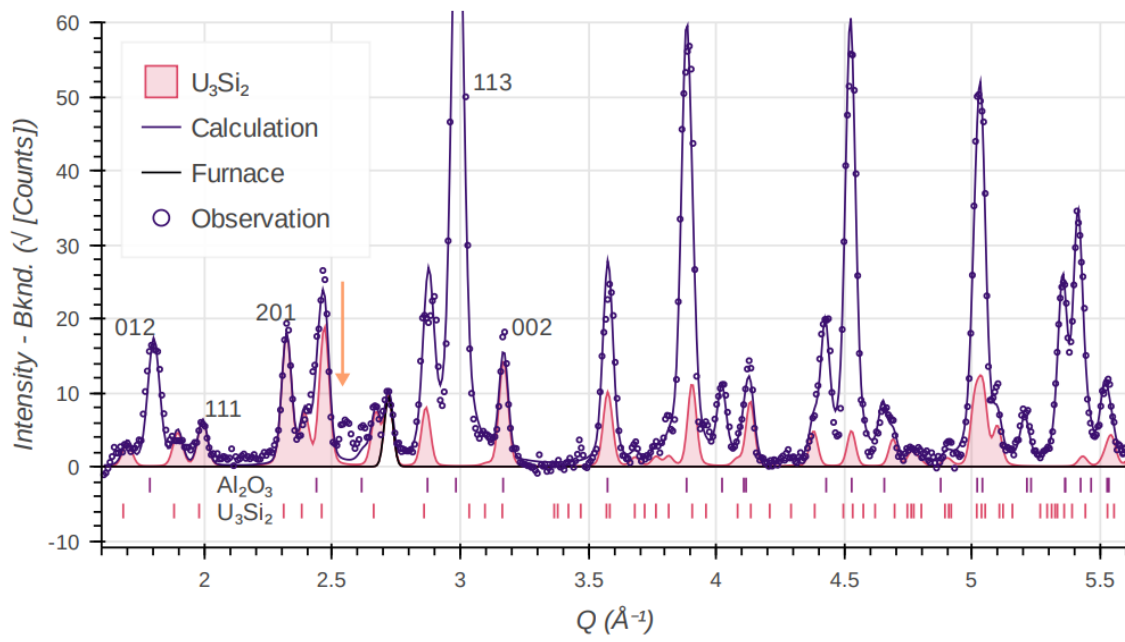


Figure 2: Neutron diffraction pattern and Rietveld/Le Bail refinement models for U_3Si_2 in an Al_2O_3 tube at 1305 °C.

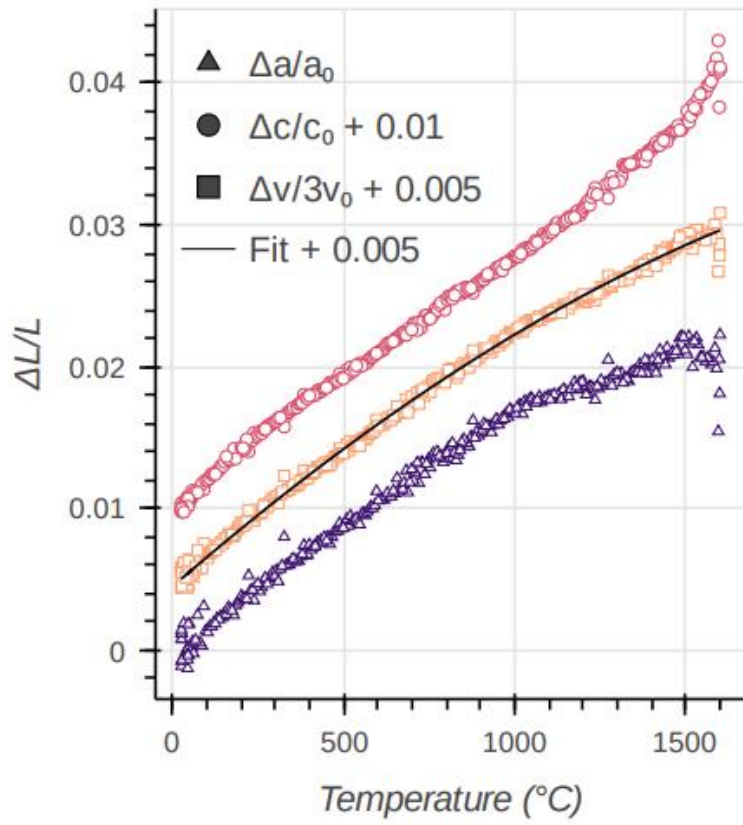


Figure 3: Thermal strain in U_3Si_2 a and c lattice parameters and in cell volume (data for c and v are offset from a).

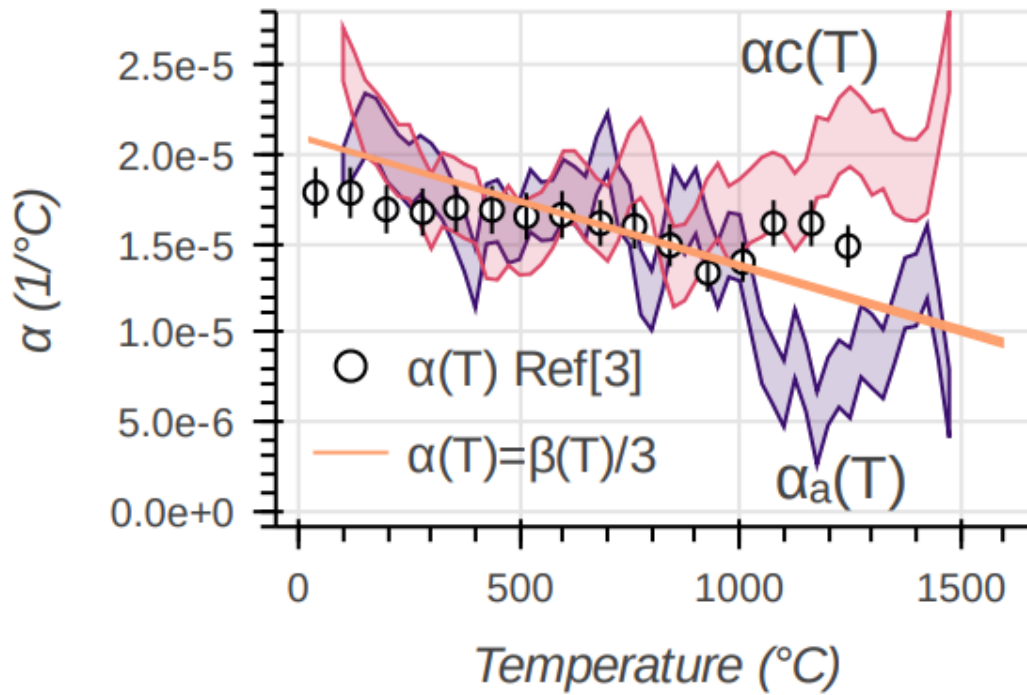


Figure 4: Linear thermal expansion coefficients of U_3Si_2 calculated from local derivative of thermal strain and from fitting Eqn. 2 to volumetric thermal strain. Data points from [3]. Height of shading and thickness of line is their standard error. The line is $\alpha(T) = 2.10 \times 10^{-5} - 7.25 \times 10^{-9} \times T$.

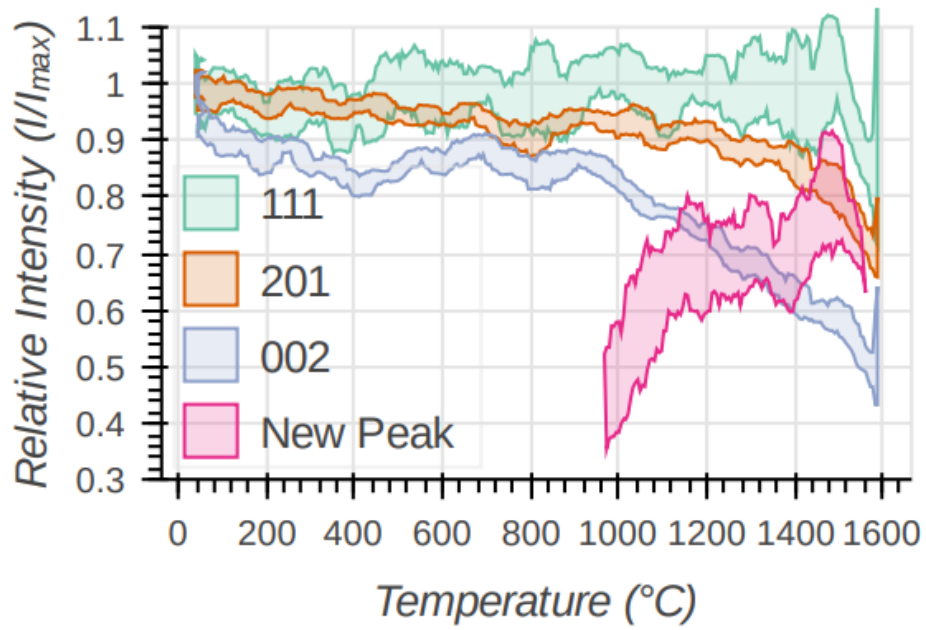


Figure 5: Normalized intensity of selected U_3Si_2 diffraction peaks and of the unidentified peak marked by the arrow in Figure 1; shaded area heights indicate standard error; (for b&w: series/legend order in y direction corresponds at 1000°C).