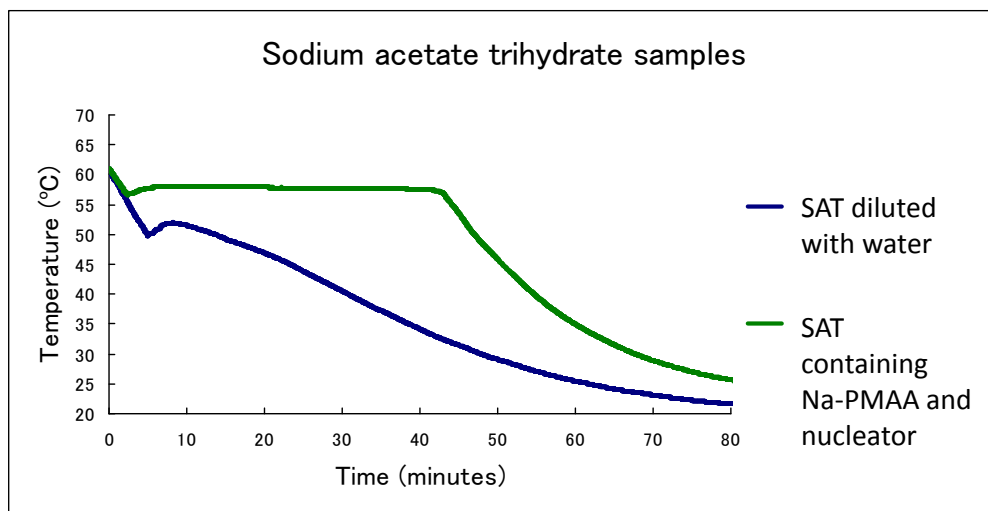
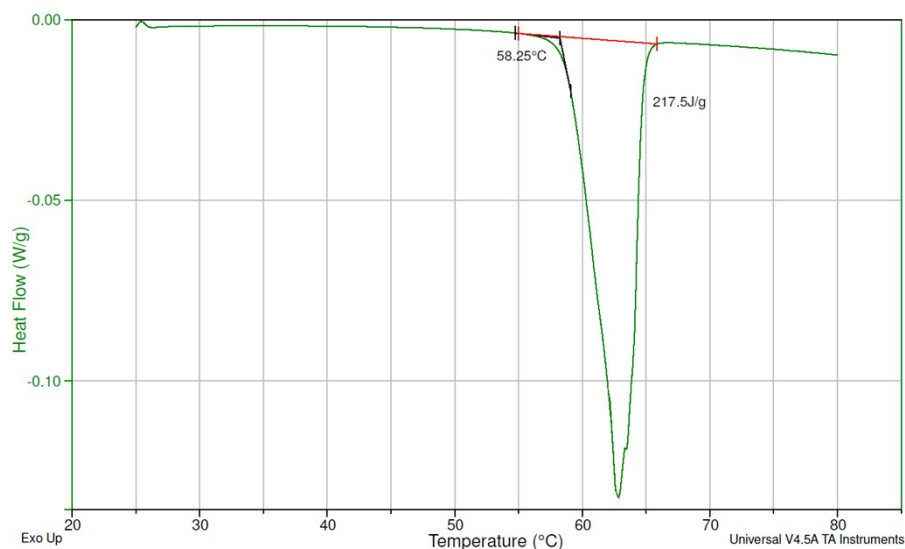


## Crystallisation studies of sodium acetate trihydrate – suppression of incongruent melting and sub-cooling to produce a reliable, high-performance phase-change material

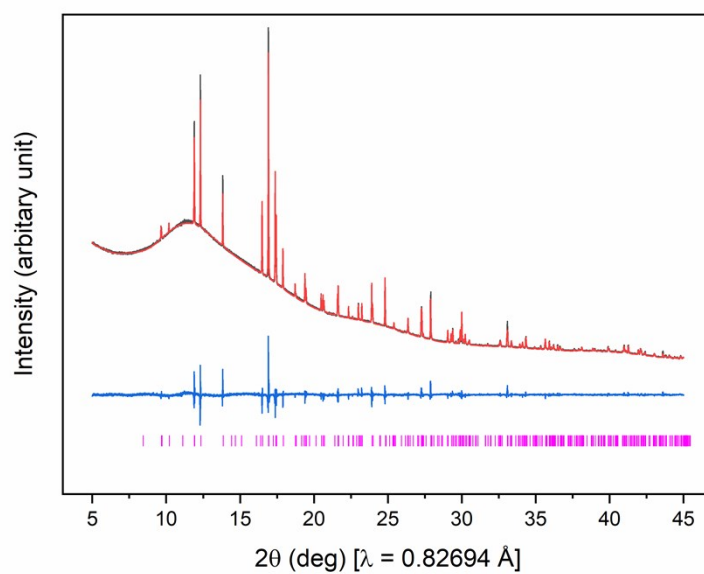
### Electronic Supplementary Information



**Figure S1** Illustration of nucleation of SAT sample containing Na-PMAA and  $\text{Na}_2\text{HPO}_4$  with no significant sub-cooling and subsequent temperature plateau at the freezing point of SAT. In contrast, dilution of pure SAT sample results in sub-cooling and loss of the temperature plateau.



**Figure S2** A representative differential scanning calorimetry (DSC) scan of a mixture of sodium acetate trihydrate, water, and Na-PMAA polymer with the composition shown in Table 2. Heating rate =  $10\text{ °C min}^{-1}$ .



**Figure S3** Rietveld refinement (black – experimental; red – calculated; and blue – difference) of the experimental X-ray powder diffraction pattern of the liquid sample at 25°C showing the presence of anhydrous Na<sub>2</sub>HPO<sub>4</sub> (pink tick marks).