Supporting Information

Dextrin Nanocomposites as matrices for solid dosage forms

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S1. Dextrin molar mass characterization

The degree of polymerisation was estimated from intrinsic viscosity measurements assuming that the Mark-Houwink relationship established for dextran holds. Dextrin was dissolved in 0.2 M $NaNO_3$ by heating to 65 °C. A clear solution was obtained containing 0.85 wt % dextrin. Solutions containing lower amounts were obtained by progressive dilution with 0.2 M $NaNO_3$. The kinematic viscosity was measured at 45 °C using an Ubbelohde viscometer with a viscosity range of $0.6 - 3\ mm^2 \cdot s^{-1}$. The conventional data extrapolation approach yielded an intrinsic viscosity value that allowed the estimation of the degree of polymerization (DP) from the Mark-Houwink constants for dextran [32]. The final estimate for the degree of polymerization was DP = 53 ± 5.

S2. Estimating crystallinity from an XRD diffractogram

Relative crystallinity was estimated as the ratio of crystalline peaks after baseline subtraction to that of the area of the original diffractogram. Savitzky-Golay smoothing was used on the original diffractogram data. After baseline subtraction the crystallinity of each individual crystalline element was estimated via integration of that peak and dividing by total crystalline area after baseline subtraction [24]. Figure S1 displays an example of how the baseline looks after being calculated and fitted, and then subtracted.

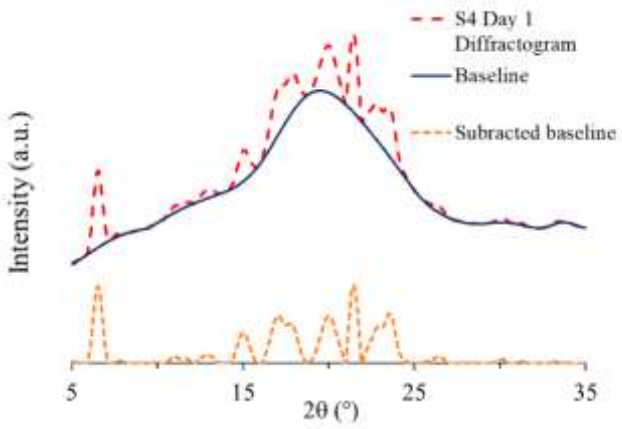

Figure S1. An illustration showing how the diffractogram was manipulated in order to estimate the compound crystallinity.

S3. Representative Dynamic Mechanical Analysis results

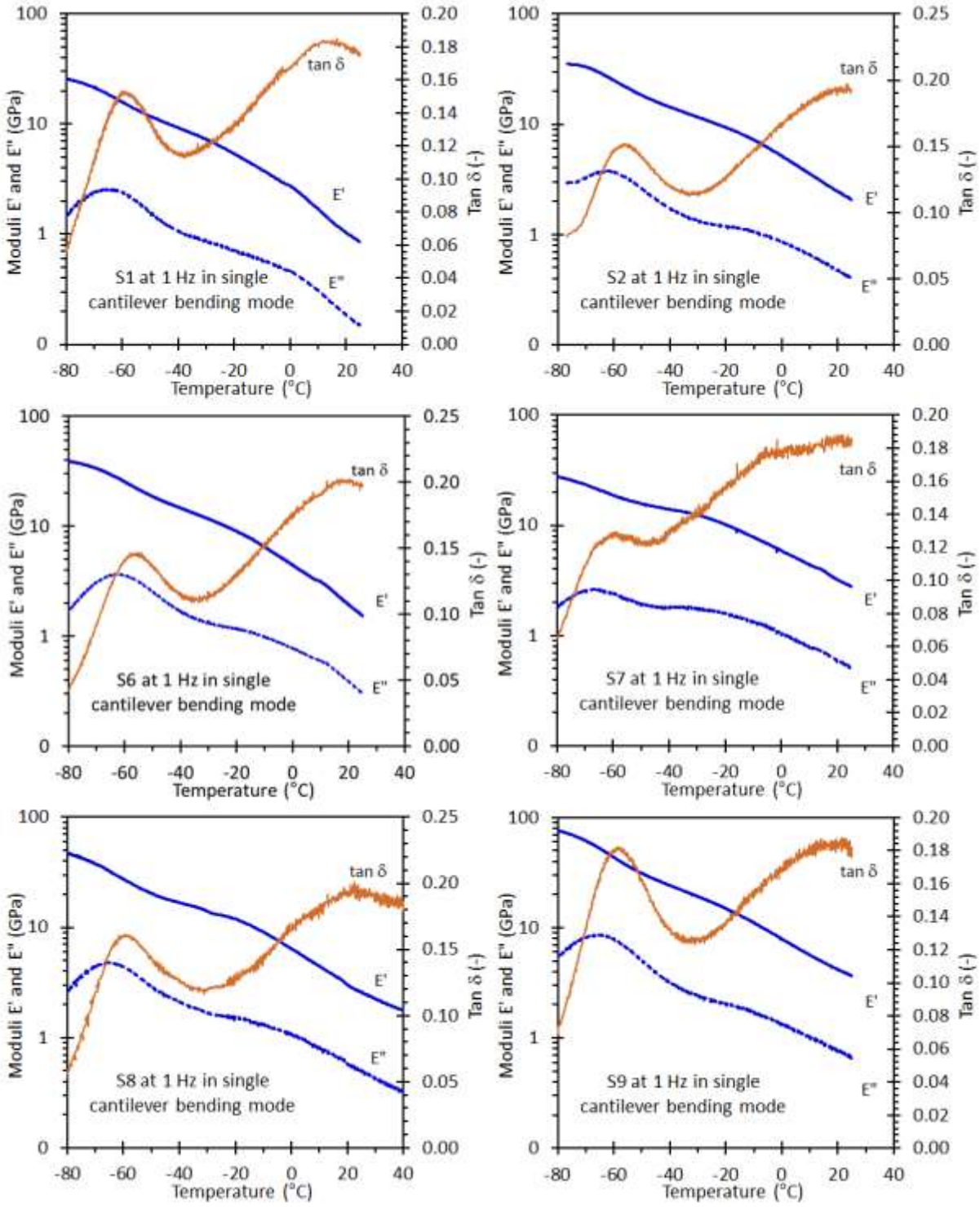

Figure S2. DMA results

The values of the beta and glass transition temperatures were estimated by fitting paraboloits to the experimental data as illustrated in Figure S3.

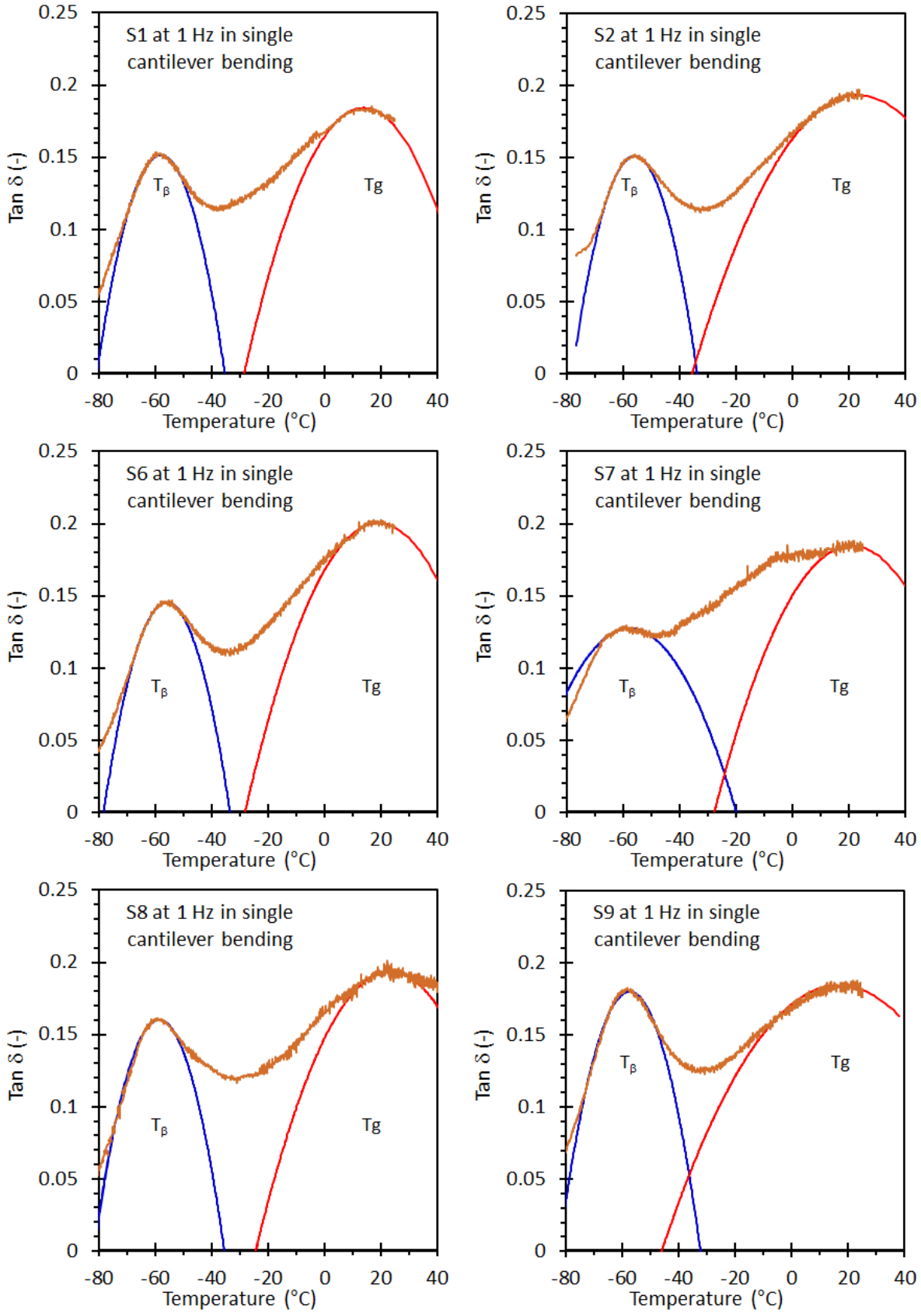

Figure S3. Estimating *Tβ* and *Tg* from DMA tan δ curves