

Supporting information for

Bendable, Self-Standing Calcite Thin Films

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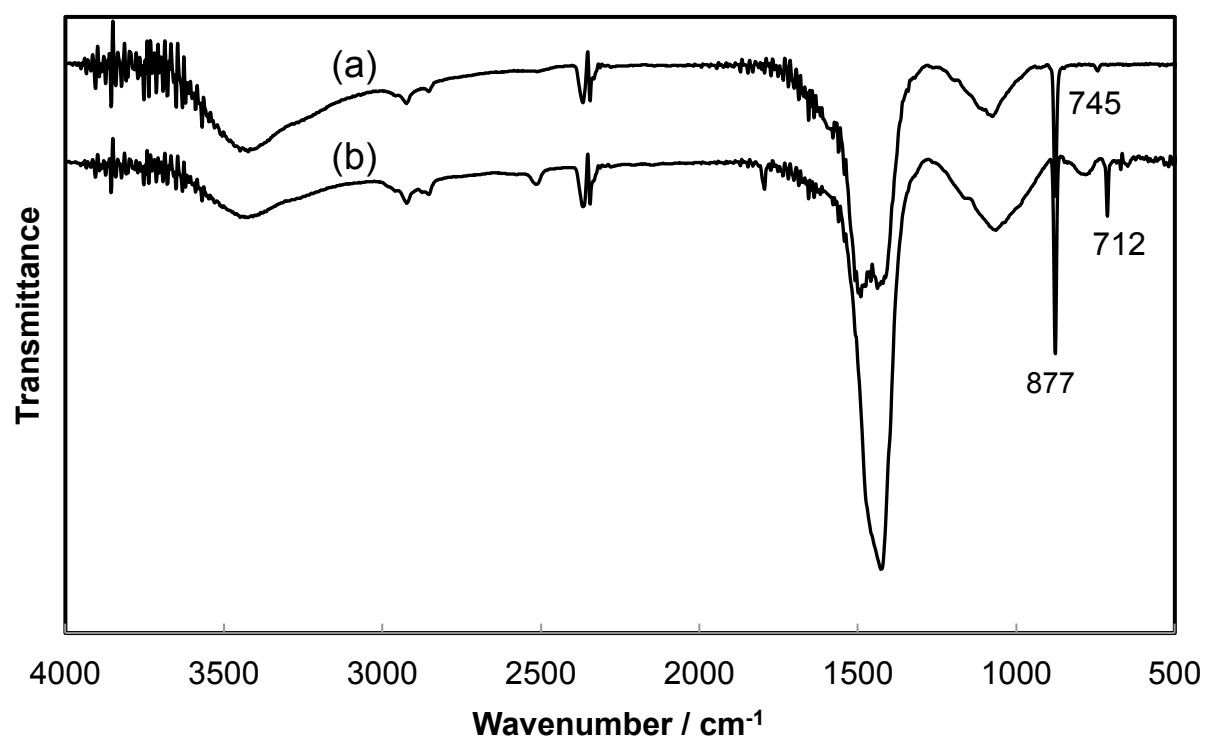
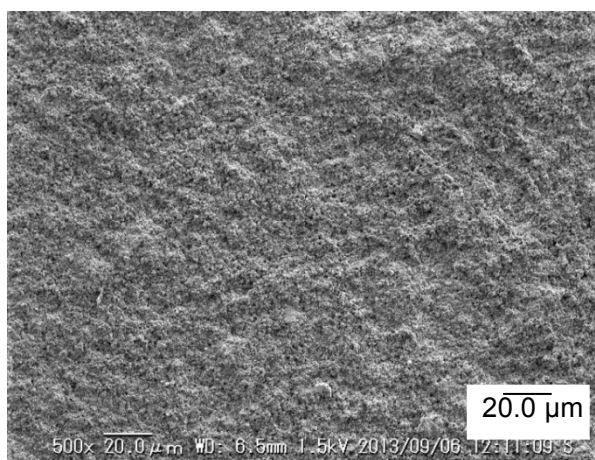
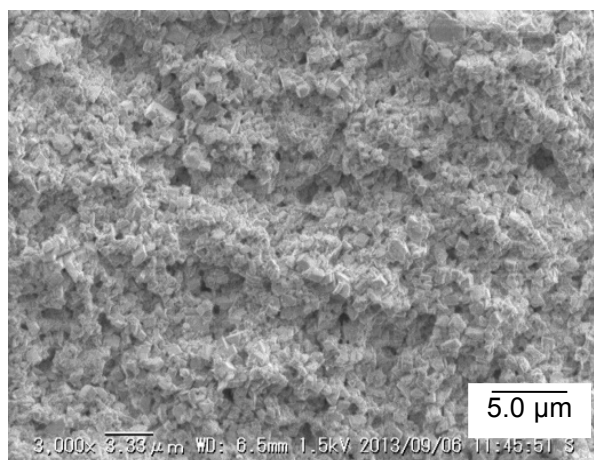


Figure S1. FT-IR spectra of (a) (PDDA/vaterite)₁₀/PDDA and (b) (calcite films)₁ obtained by incubation of (PDDA/vaterite)₁₀/PDDA in distilled water for 5 days.

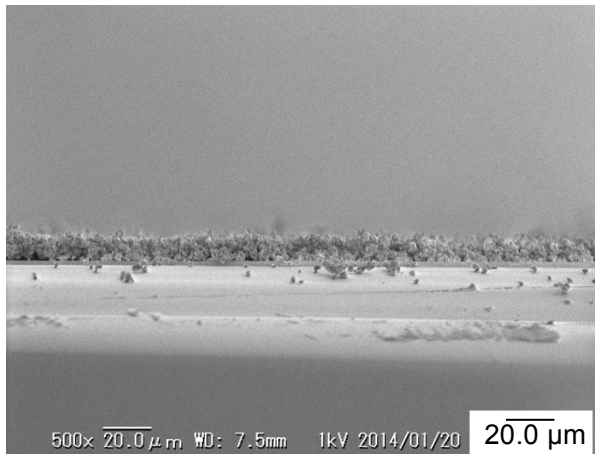
(a)



(b)



(c)



(d)

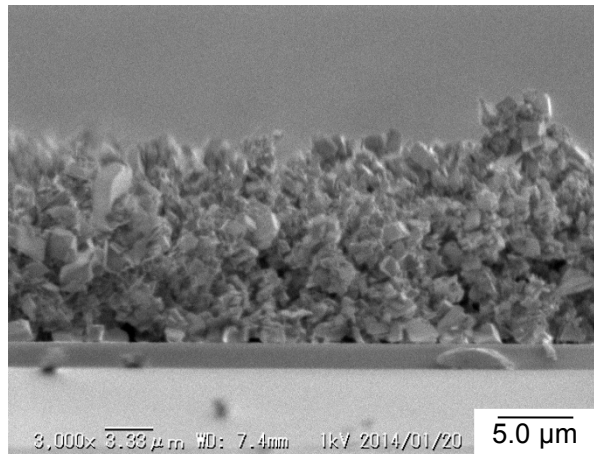


Figure S2. SEM images of (a), (b) the top surface and (c), (d) the cross-section of (calcite film)₁.

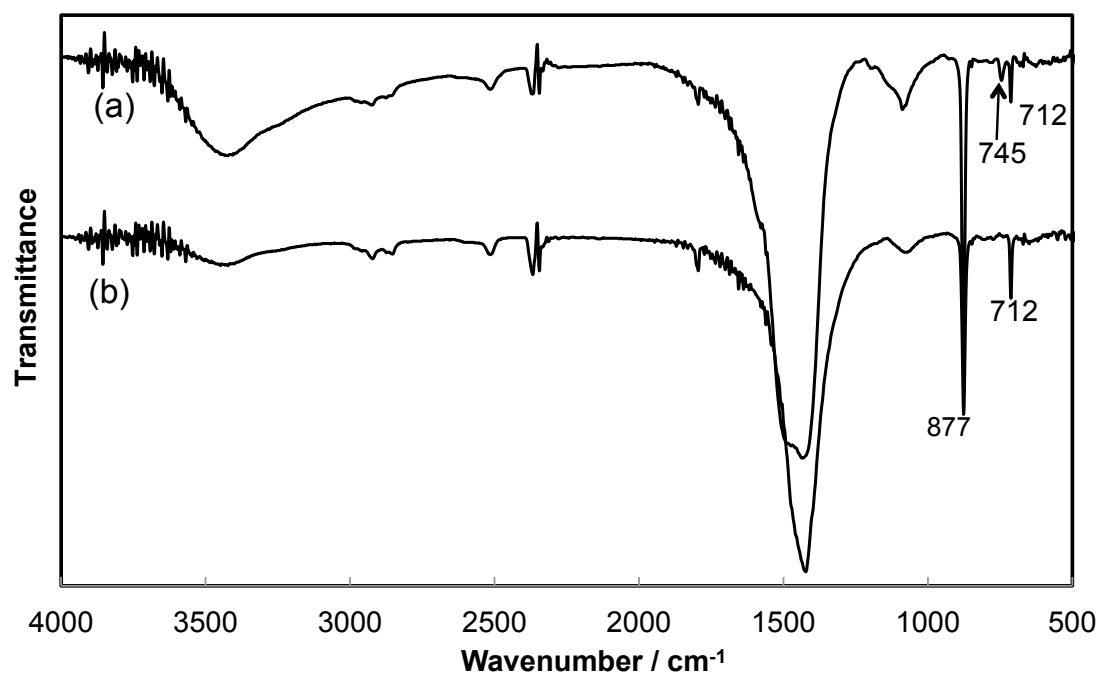


Figure S3. FT-IR spectra of (a) the (calcite film)₁/(vaterite)₁₀/PDDA multilayer film and (b) (calcite film)₂ obtained by incubation of (calcite film)₁/(vaterite)₁₀/PDDA in distilled water for 5 days.

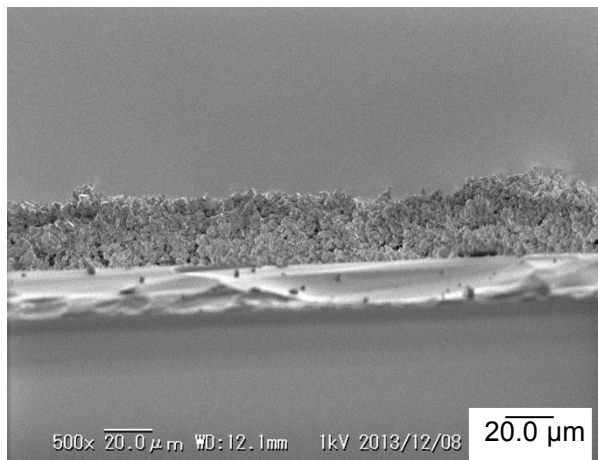


Figure S4. A SEM image of the cross-section of (calcite film)₂.

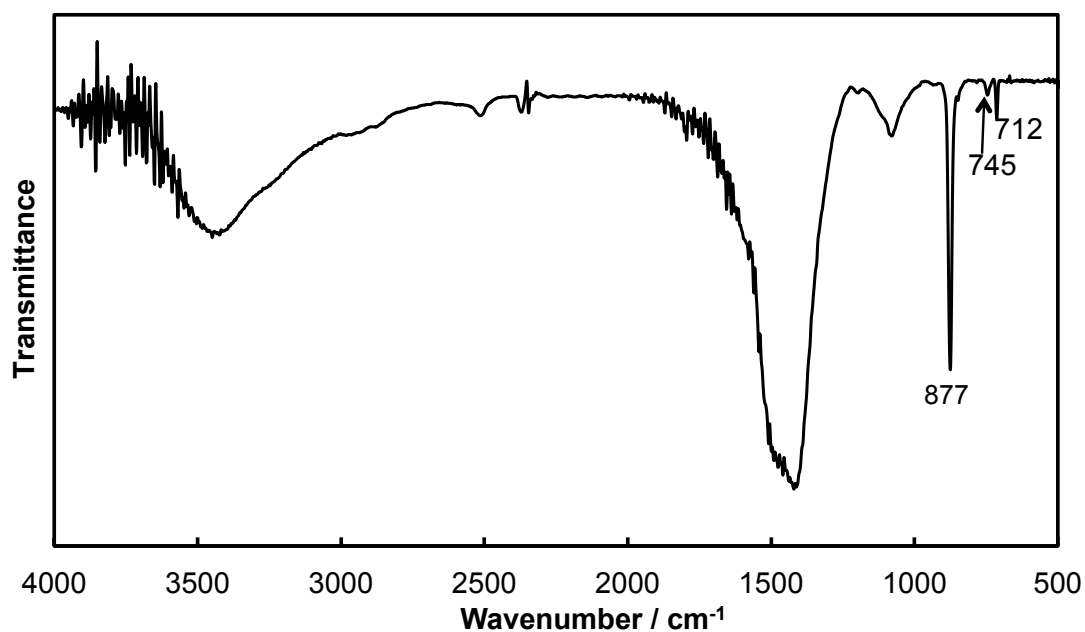


Figure S5. FT-IR spectrum of the (calcite film)₂/(vaterite)₁₀/PDDA multilayer film.

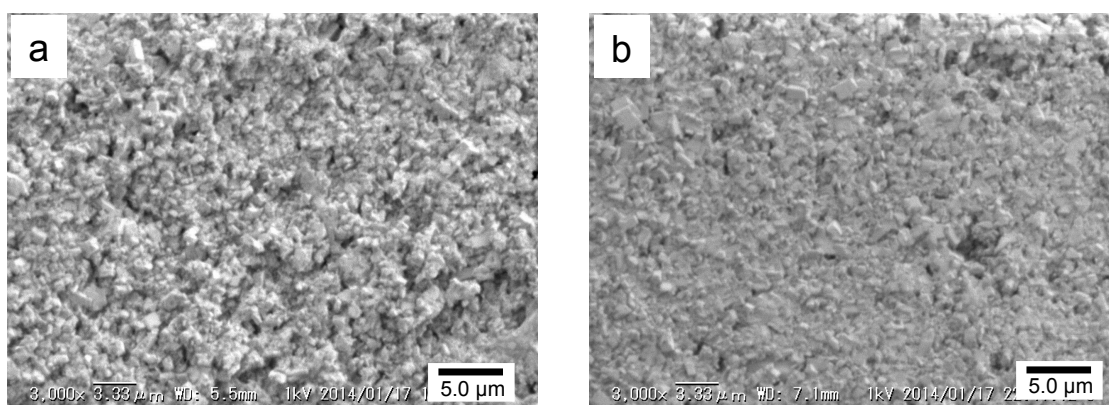


Figure S6. SEM images of the top (a) and down (b) surfaces of the self-standing calcite thin films.

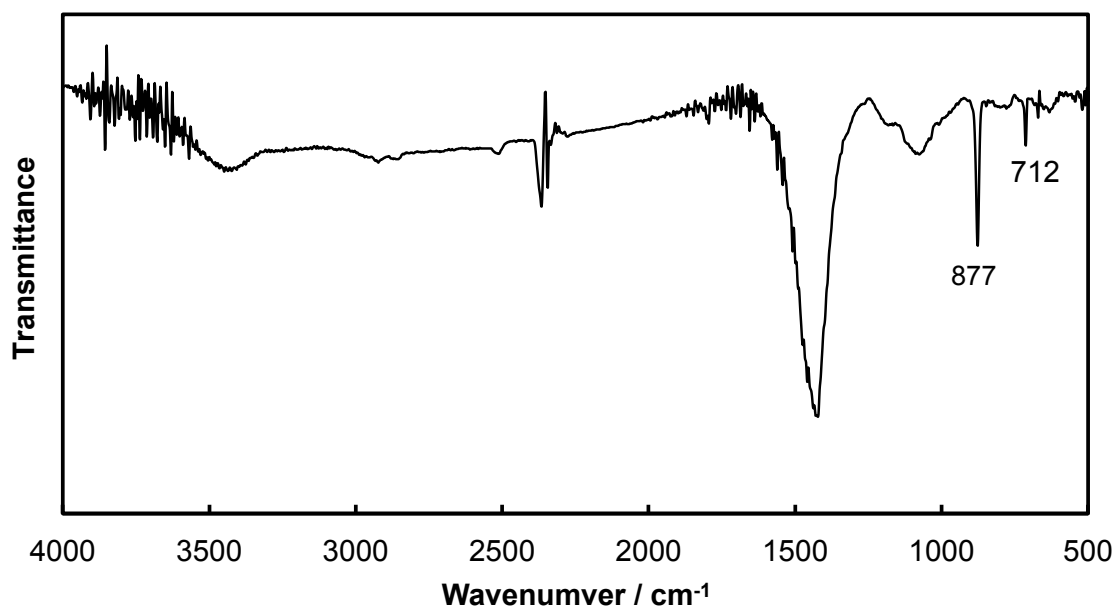


Figure. S7. FT-IR spectrum of the self-standing calcite thin film.

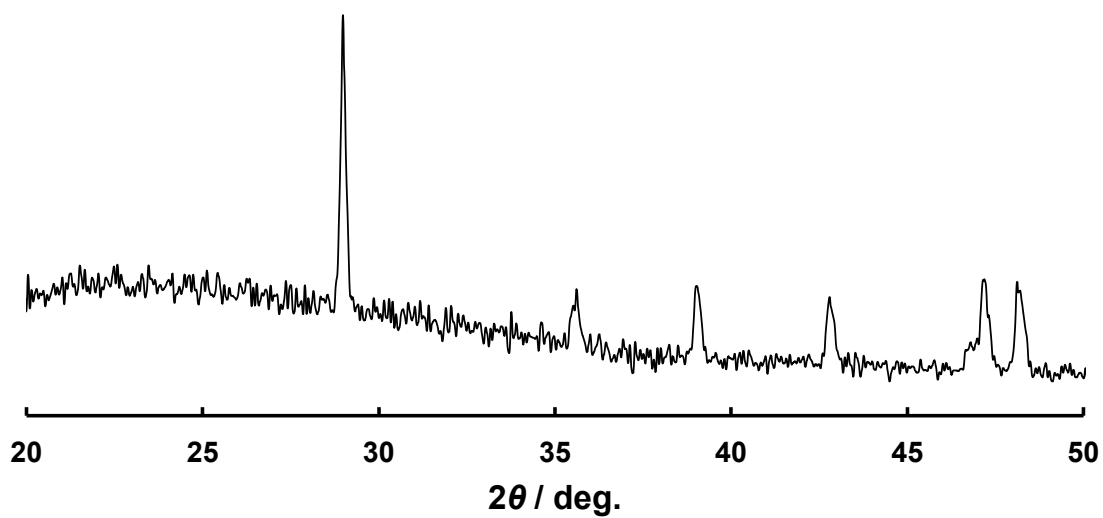


Figure. S8. XRD pattern of the self-standing calcite thin film.

The characteristic of XRD pattern for calcite (d-spacing/ 2θ peak: $3.58 \text{ \AA}/29.4^\circ$, corresponding to hkl: 104).

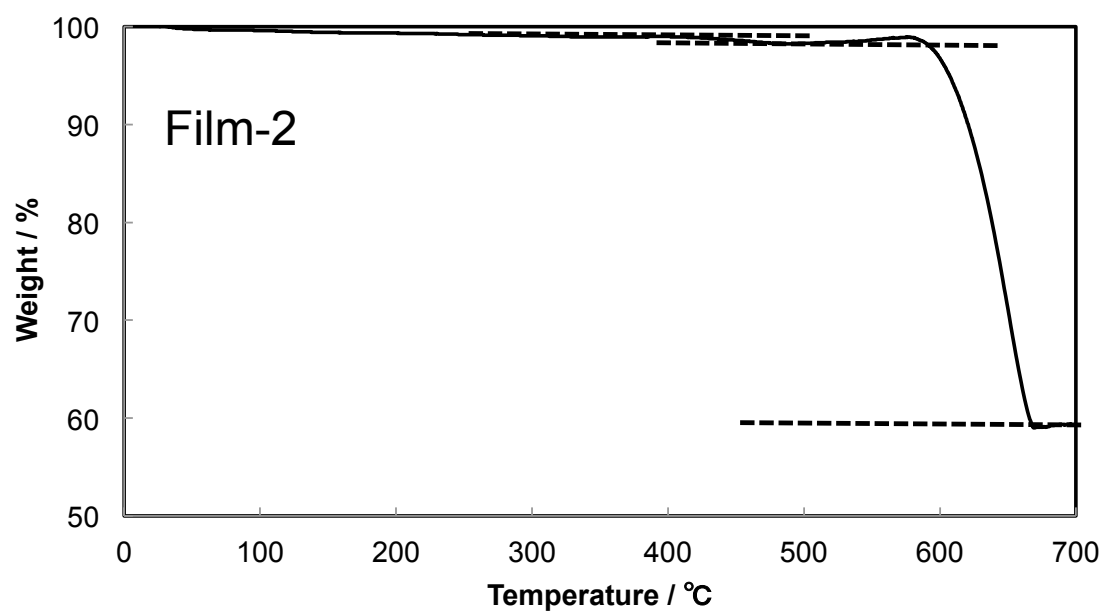
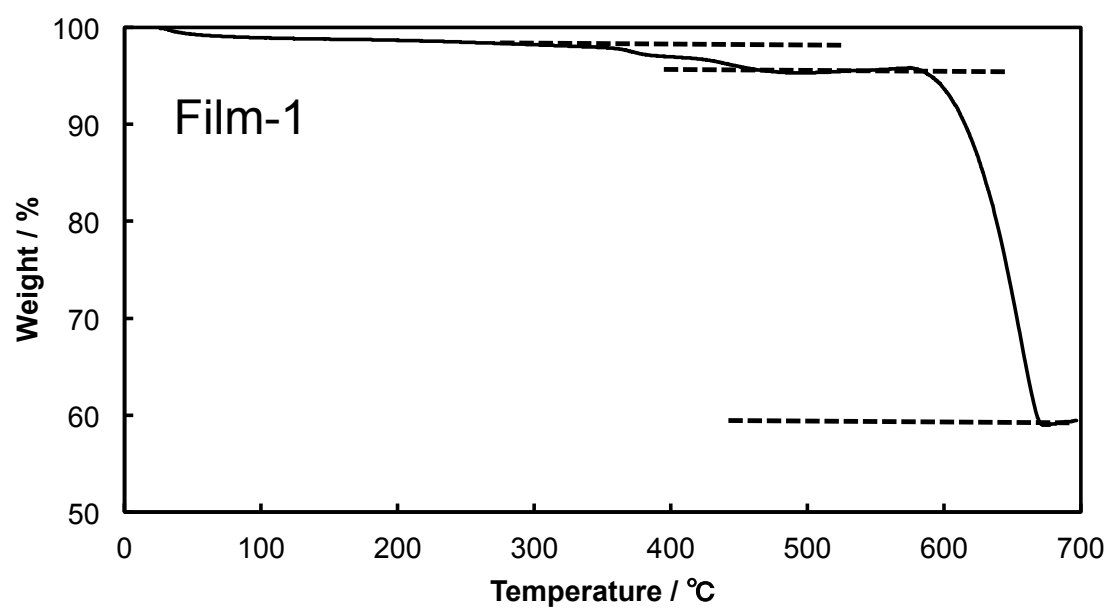


Figure S9. TGA thermographs of Film-1 and Film-2 at a heating 10 °C/min under an air atmosphere.

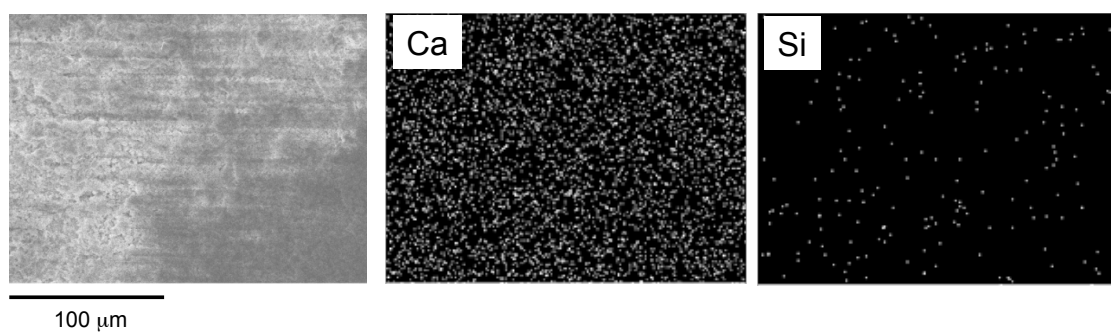


Figure S10. EDX analysis of the distribution of Ca and Si, ions in the self-standing calcite thin film.

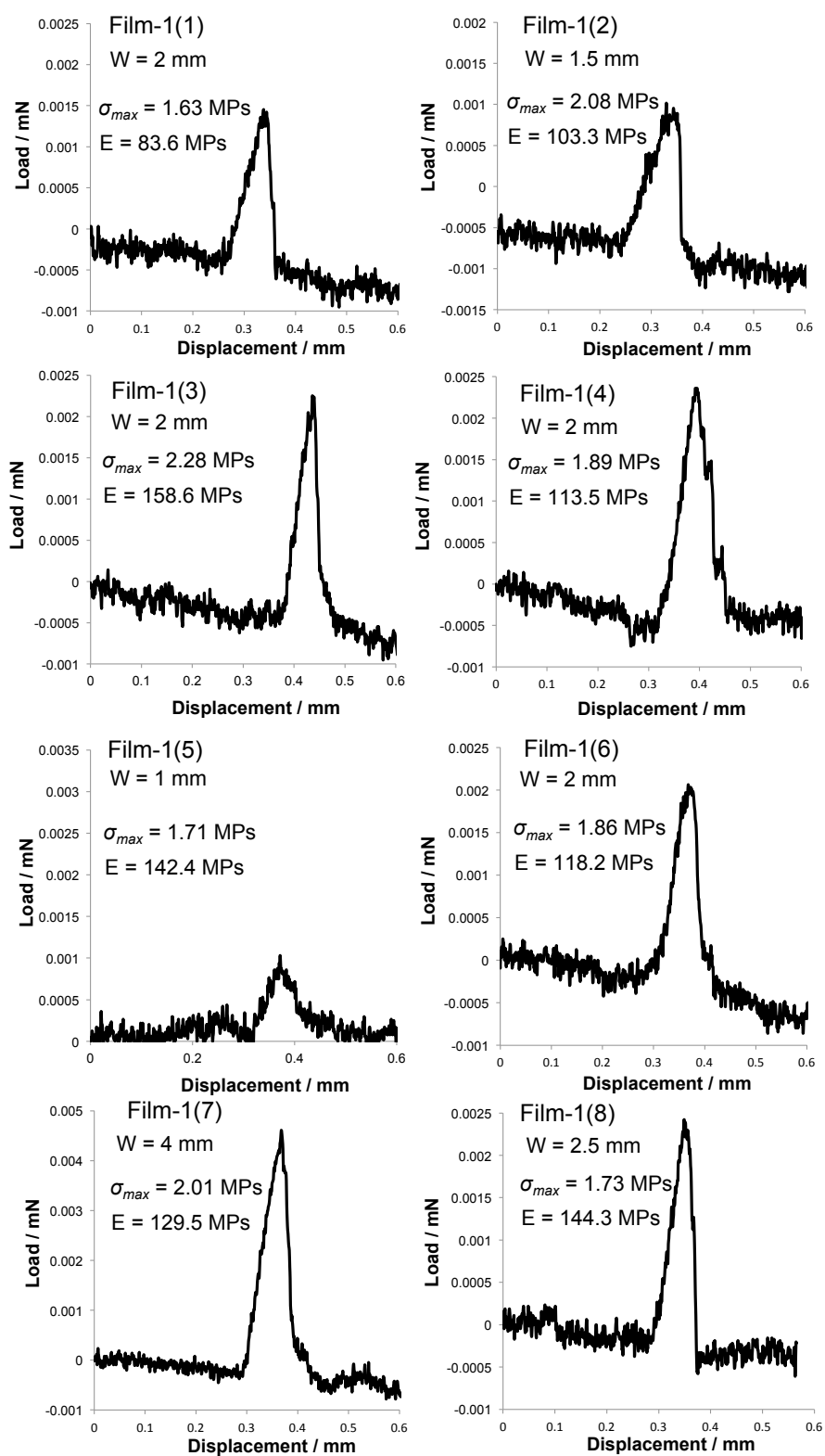


Figure S11 Load-displacement curves of Film-1.

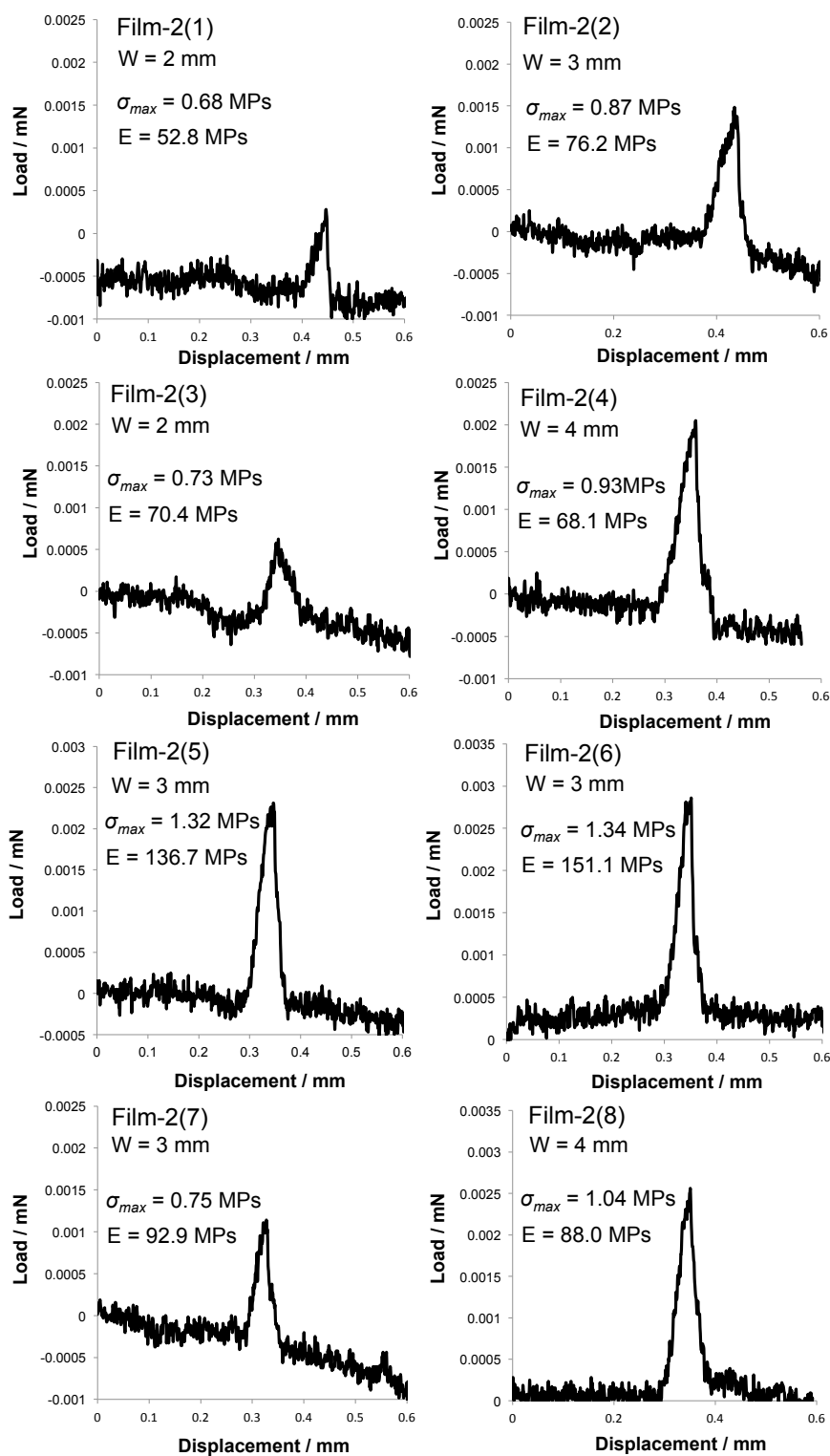


Figure S12 Load-displacement curves of Film-2.