

Electronic Supplementary Information (ESI)

Supporting Information S-1

Table S1 Water content (%) determined in this work^a and crystallinities obtained from references were listed for *B. mori* silk sericin, silk fibroin and silk cocoon..

	Water content (wt %)	Crystallinity Degree (%)
Silk Cocoon	78(±2)	19 ^b
Silk Sericin	104 (±5)	15 ^c
Silk Fibroin	50(±5)	22 ^b

- a. The water contents (%) of three silk fibers, silk sericin, silk fibroin and silk cocoon were determined according to the following equation.

$$\text{Water content (wt \%)} = ((W_{\text{wet}} - W_{\text{dry}}) / W_{\text{dry}}) \times 100$$

where W wet is the weight of the hydrated silk fiber sample and W dry is the weight of the dried silk fiber sample. In the preparation of the hydrated samples, they were immersed in H₂O for at least one day. The weight of the hydrated sample was determined after wiping excess water off the sample. On the other hand, the weight of the dried sample was determined after setting the sample in 60°C oven more than 3 days. The averaged value of water content after five repeated experiments for each silk fiber was listed.

- b. Ref. 52
c. Ref. 53

Supporting Information S-2

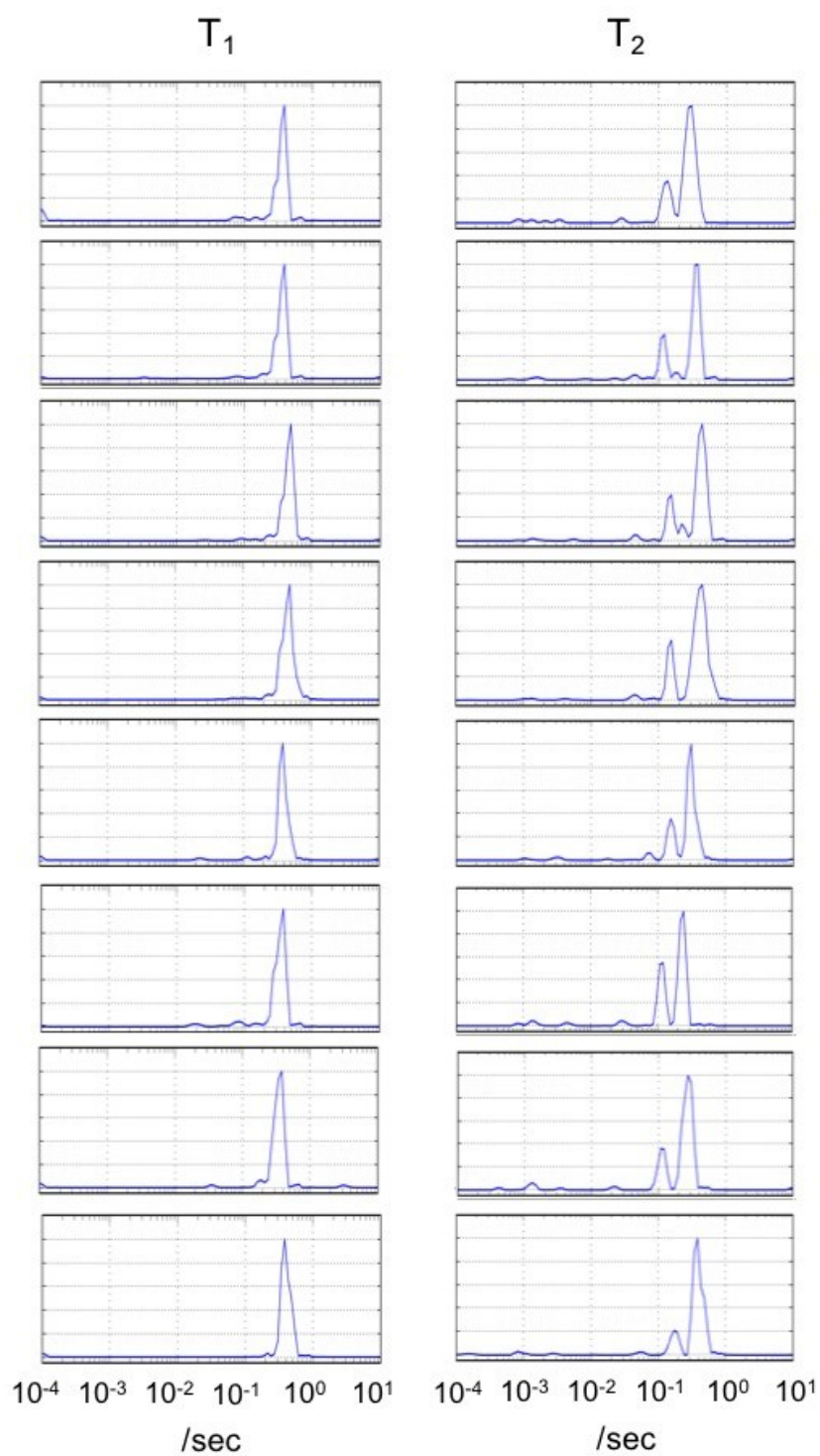


Figure S1. The ^2H T_1 and T_2 projections of 2D ^2H ILT T_1 - T_2 correlation maps of $^2\text{H}_2\text{O}$ at 20°C of the SF fiber in order to check the reproducibility of the experiment.