## **Description of Additional Supplementary Files**

## **Supplementary Movie1:**

100 fps Movie; constructed using POM images obtained during the rheo-POM measurement of 39 wt% CTAT + Water at 30° C with d = 150  $\mu$ m and  $\sigma$  = 2 Pa (Left panel). Right panel is the corresponding binary version for better visibility.

## **Supplementary Movie2:**

100 fps Movie; with no shear condition.