Structural rheology of focal conic domains: a stress-quench experiment

Shuji Fujii [a], Shigeyuki Komura [b*] and C.-Y. David Lu [c]

[a] Department of Chemistry, Nagaoka University of Technology, Nagaoka 940-2188, Japan.
[b] Department of Chemistry, Tokyo Metropolitan University, Tokyo 192-0397, Japan.
[c] Department of Chemistry, National Taiwan University, Taipei 106, Taiwan.

Electronic Supplementary Information

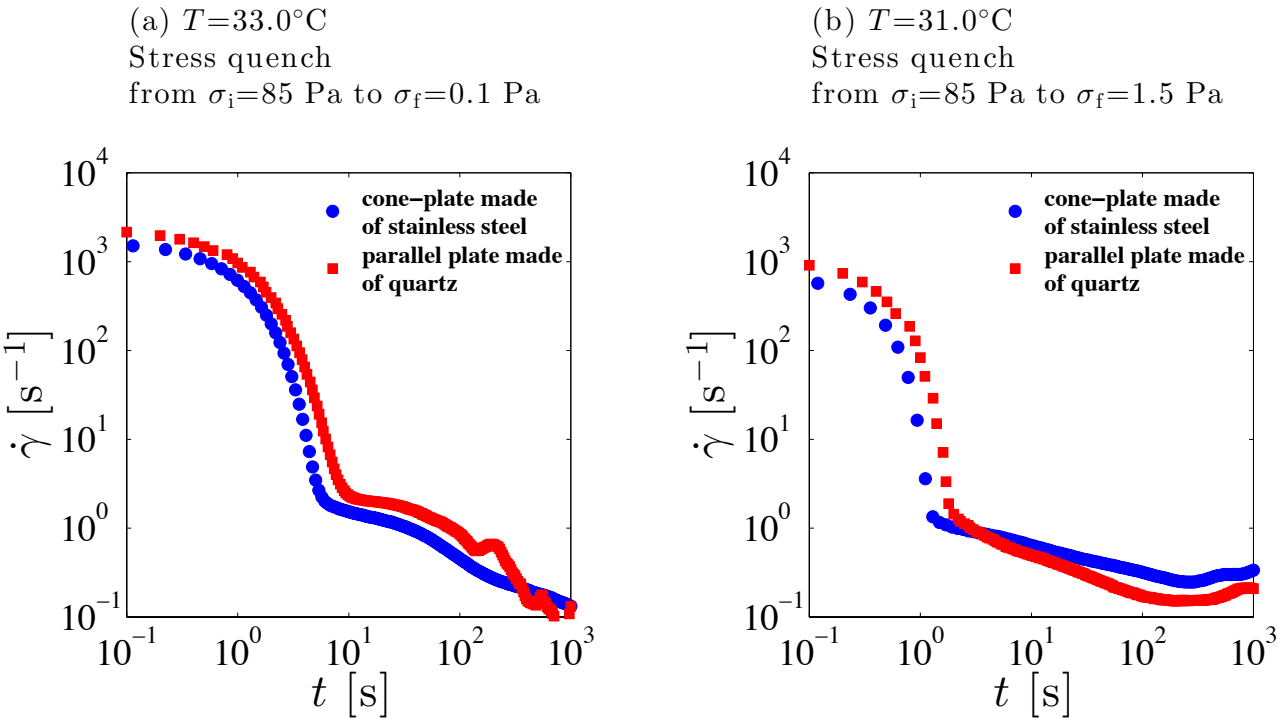

Figure S1. Stress quench data obtained by the cone-plate shear cell (made of stainless steel) is compared with that obtained by the parallel plate one (made of quartz). Data obtained for the same quench conditions as those in Figs. 2 and 6 are shown. Both quench data qualitatively agree with each other.

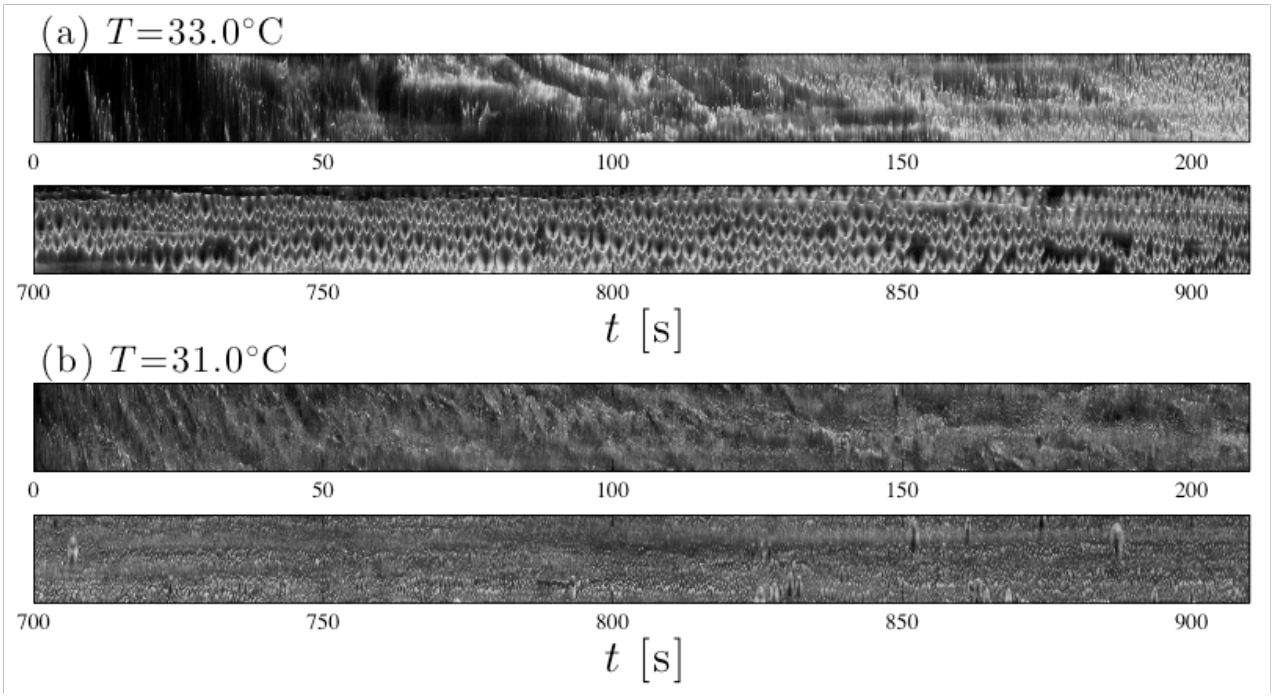

Figure S2. Spatio-temporal images converted from movies. Time evolution of the positions of FCDs shown in Fig. 6 and the averaged optical intensity I shown in Fig. 7 were produced from these images. Vertical length of the image is 200 μm. In order to extract the positions of FCDs, apices of FCDs were picked out as shown in Figure S3. The optical intensity I at each time was averaged over 200 μm along the vertical (vorticity) direction. FCDs can be clearly seen in panel (a), while it is difficult to identify them in panel (b) because the sizes are small. Alignment of FCDs is easily seen in Fig. 6 rather than the spatio-temporal images.

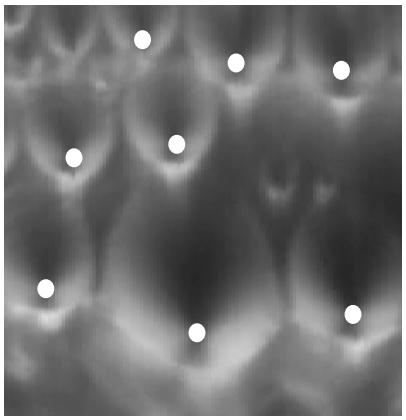

Figure S3. Typical snapshot of FCDs and their apices shown as white dots.