## Electronic Supplementary Information for:

## Flow of wormlike micellar solutions around microfluidic cylinders with high aspect ratio and low blockage ratio

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In Figure S1, we present time-averaged images capturing details of the flow field and birefringence as observed in the y = 0 plane of the microfluidic cylinder device for flow of the wormlike micellar (WLM) solution over a range of imposed Weissenberg numbers, *Wi*.



**Fig. S1** (a-d) Time-averaged velocity fields and corresponding time-averaged retardation fields acquired in the *x*-*z* plane (focus at y = 0) for the WLM solution flowing around the cylinder at the *Wi* indicated. Flow is left to right and the cylinder is located at x = 0, indicated by the vertical black band. Images can be compared with those of Fig. 5 in the main text.

We also include the following movies in order to illustrated time-dependent flows of the WLM solution at  $Wi > Wi_{c2}$ :

Mov\_S1: visualization of the flow field at Wi = 150, captured at 20 Hz.

Mov\_S2: visualization of the birefringence at Wi = 150, captured at 125 Hz.

Mov\_S3: visualization of the flow field at Wi = 938, captured at 60 Hz.

Mov\_S4: visualization of the birefringence at Wi = 938, captured at 125 Hz.

Mov\_S5: visualization of the flow field at Wi = 1875, captured at 60 Hz.

Mov\_S6: visualization of the flow field at Wi = 1875, captured at 125 Hz.