

**Supplementary Material**

**Orientation and Stretching of Supracolloidal Chains  
of Diblock Copolymer Micelles  
by Spin-coating Process**

*Jaemin Kim, Kyunghyeon Lee, Sangyoon Kim, and Byeong-Hyeok Sohn\**

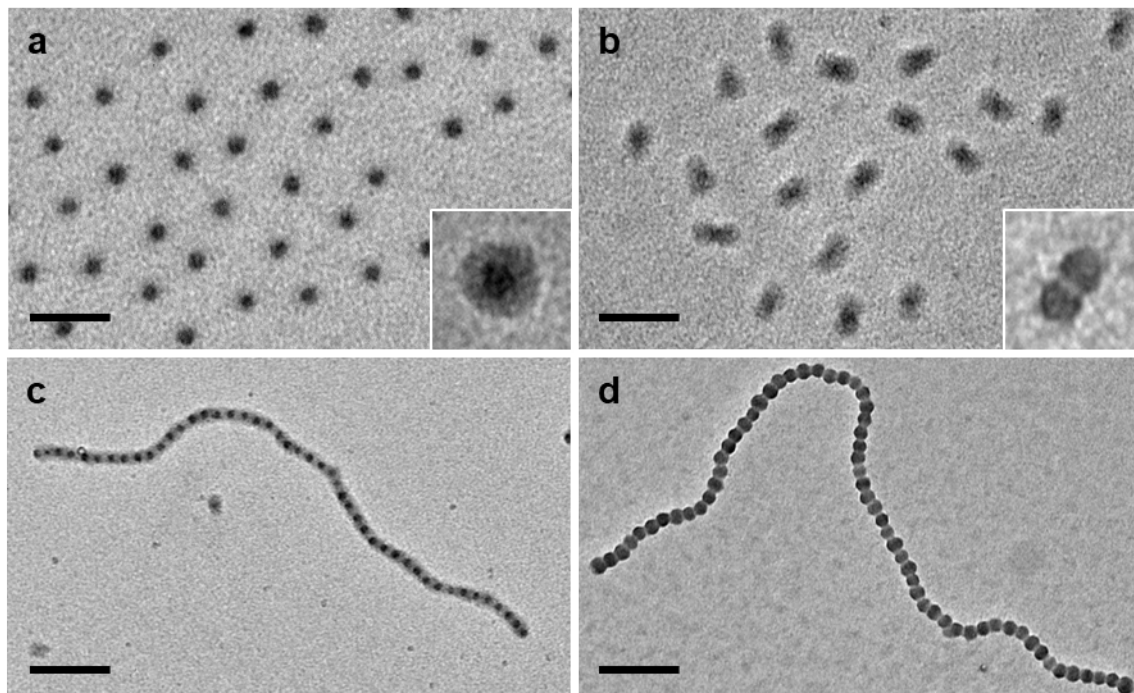
Department of Chemistry, Seoul National University, Seoul 08826, Republic of Korea

\*Corresponding Author. E-mail address: bhsohn@snu.ac.kr

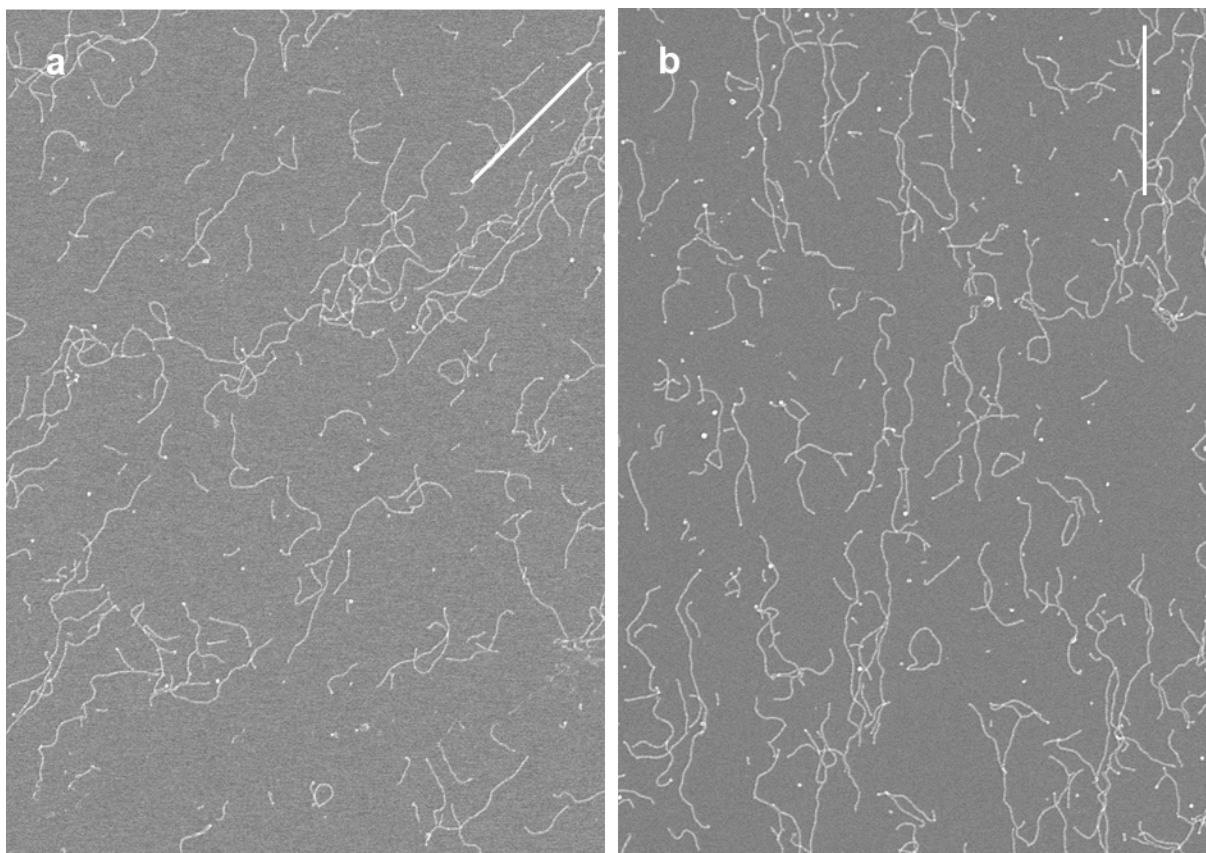
Tel: 82-2-883-2154 Fax: 82-2-889-1568

	Persistence length (nm)	
	Drop	Spin
1,000 ~ 1,500 nm	438 ± 9	493 ± 11
1,500 ~ 2,000 nm	451 ± 7	511 ± 12
2,000 ~ 2,500 nm	462 ± 10	548 ± 11
2,500 ~ 3,000 nm	535 ± 8	624 ± 11
3,000 ~ 3,500 nm	460 ± 5	1,187 ± 60
3,500 ~ 4,000 nm	601 ± 10	1,663 ± 108
4,000 ~ 4,500 nm	409 ± 12	1,783 ± 100
4,500 ~ 5,000 nm	323 ± 49	1,451 ± 75
> 5,000 nm	545 ± 11	1,593 ± 82

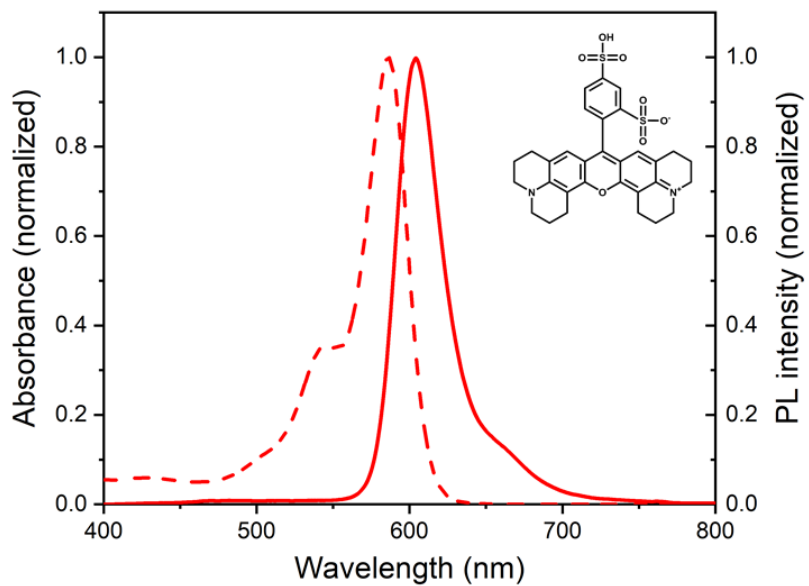
**Table S1.** Mean values with deviations of persistence lengths in the graph of Figure 7b. The deviation value is the 95% confidence interval, which equals to 1.96 times the standard deviation.



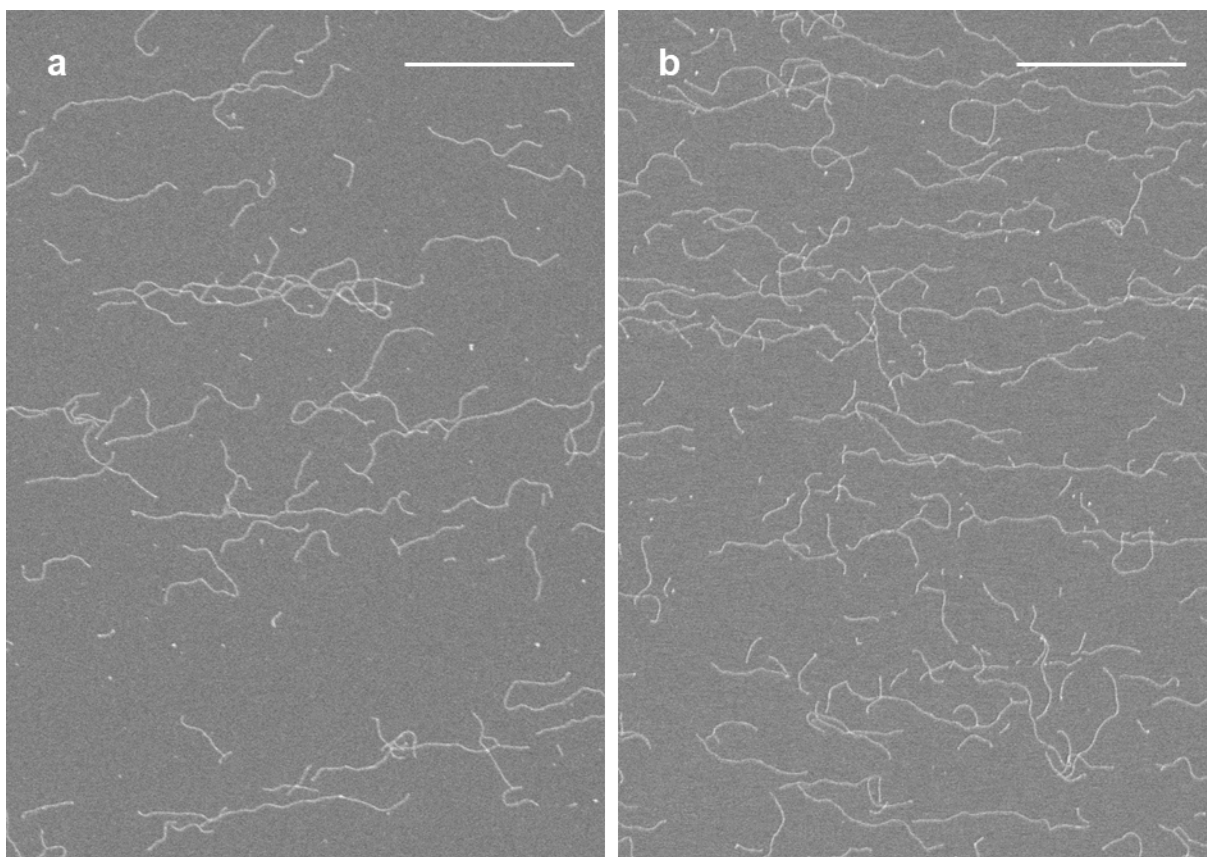
**Figure S1.** TEM images: (a) spherical micelles; (b) patchy micelles; (c) a supracolloidal chain; (d) a supracolloidal chain stained with RuO<sub>4</sub>. The scale bars in (a)(b) and (c)(d) are 100 nm and 200 nm, respectively. Each inset shows an enlarged image of an individual micelle (100 nm × 100 nm), where the PS block was selectively stained with RuO<sub>4</sub>.



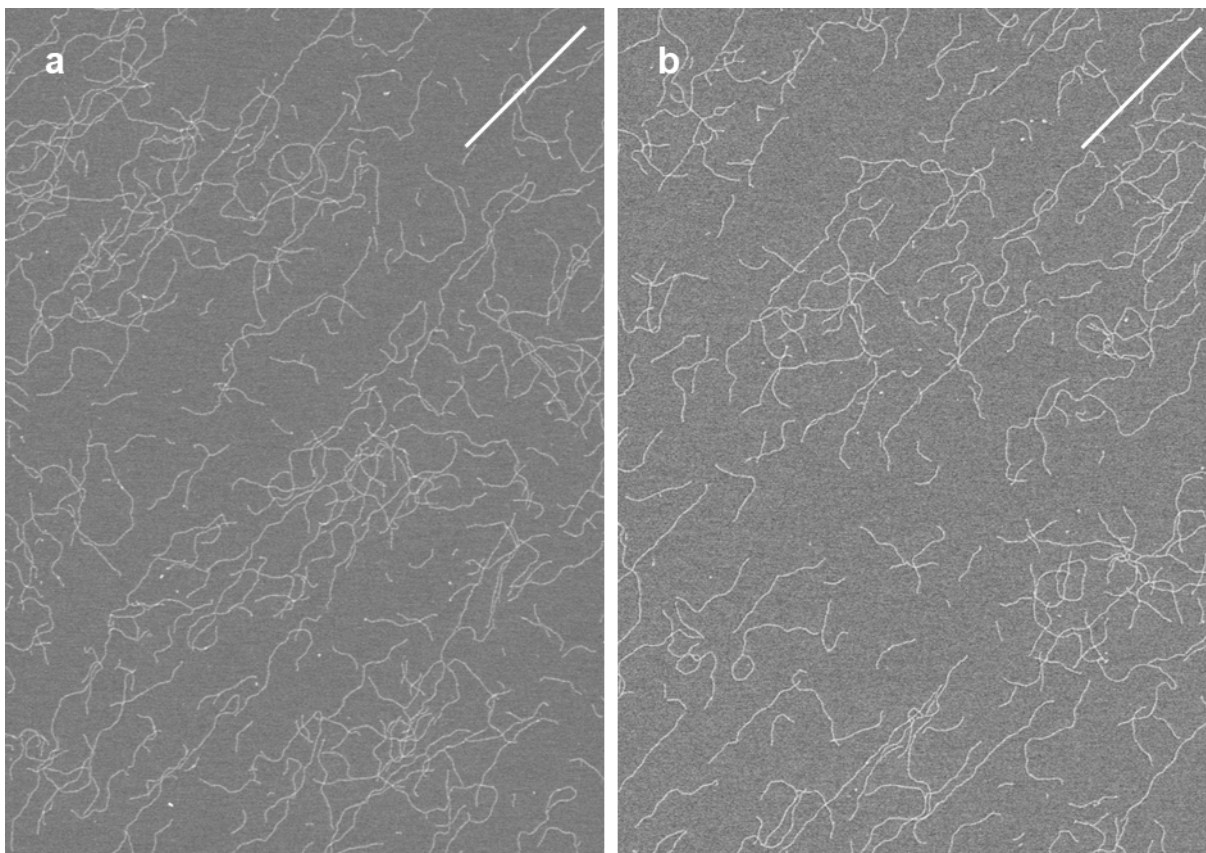
**Figure S2.** SEM images of supracolloidal chains spin-coated on a substrate. The images in (a) and (b) were obtained at 45° and 90° directions from the center of the substrate, respectively. The size of each image is 12  $\mu\text{m}$   $\times$  17  $\mu\text{m}$ . The radial direction of the spin-coating process is indicated by the white line.



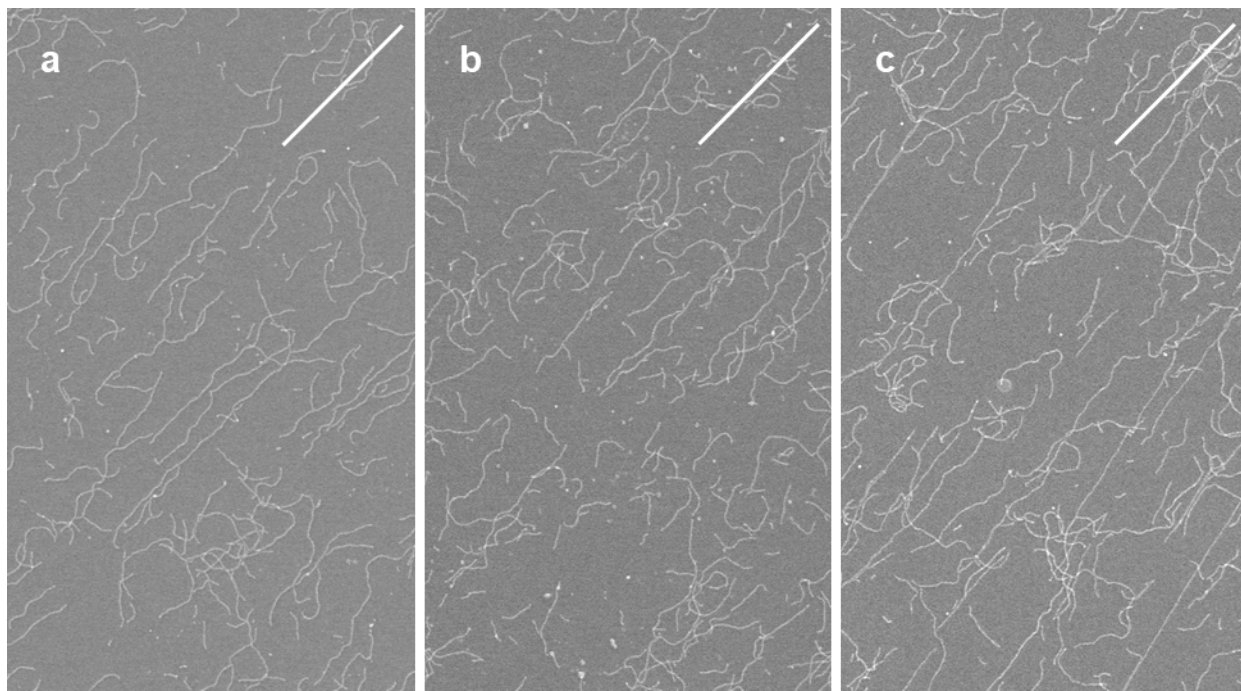
**Figure S3.** Absorption (dashed) and PL (solid) spectra of Sulforhodamine 101 in water. The excitation wavelength was 365 nm.



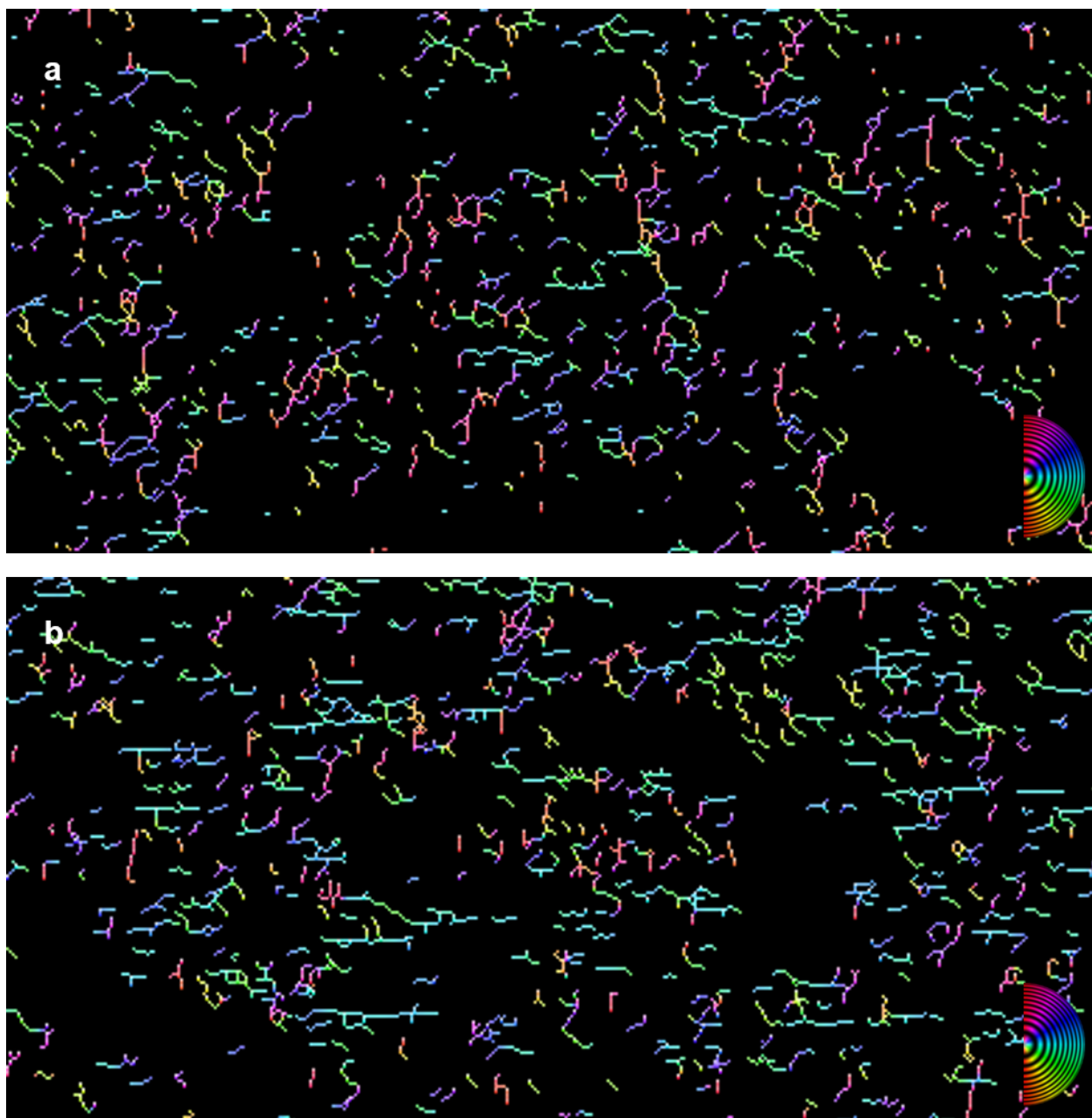
**Figure S4.** SEM images of supracolloidal chains spin-coated on a substrate by varying the initial concentration: (a) 0.02 wt%; (b) 0.03 wt%. The size of each image is  $12\ \mu\text{m} \times 17\ \mu\text{m}$ . The radial direction of the spin-coating process is indicated by the white line.



**Figure S5.** SEM images of supracolloidal chains spin-coated on a substrate by varying the spinning speeds: (a) 1,500 rpm; (b) 4,500 rpm. The size of each image is  $12\ \mu\text{m} \times 17\ \mu\text{m}$ . The radial direction of the spin-coating process is indicated by the white line.



**Figure S6.** SEM images of supracolloidal chains spin-coated on substrates with various water-contact angles: (a) 35°; (b) 70°; 110°. The size of each image is 12  $\mu\text{m}$   $\times$  17  $\mu\text{m}$ . The radial direction of the spin-coating process is indicated by the white line.



**Figure S7.** Images of color-coded chains with respect to their orientation corresponding to fluorescent images in Figure 9: (a) drop-cast; (b) spin-coated. The size of each image is the same as that in Figure 9 ( $100\ \mu\text{m} \times 50\ \mu\text{m}$ ).