

Supplemental Information

**Effect of Supercritical Carbon Dioxide on Molecular Aggregation States of Side Chains of Semicrystalline Poly{2-(perfluorooctyl)ethyl acrylate} Brush Thin Films**

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1. AFM images of the poly(FA-C<sub>8</sub>) brush thin film before and the after the scCO<sub>2</sub> treatment

By using AFM, we characterized the surface structures of the poly(FA-C<sub>8</sub>) brush films before and after the scCO<sub>2</sub> treatment at the conditions of  $T = 309\text{K}$  and  $P = 8.2\text{ MPa}$  for 1 h and subsequent quench at a rate of 50 MPa/min. It was found that the CO<sub>2</sub> treated films have more distinct surface structures and larger surface roughness relative to the untreated films. ...

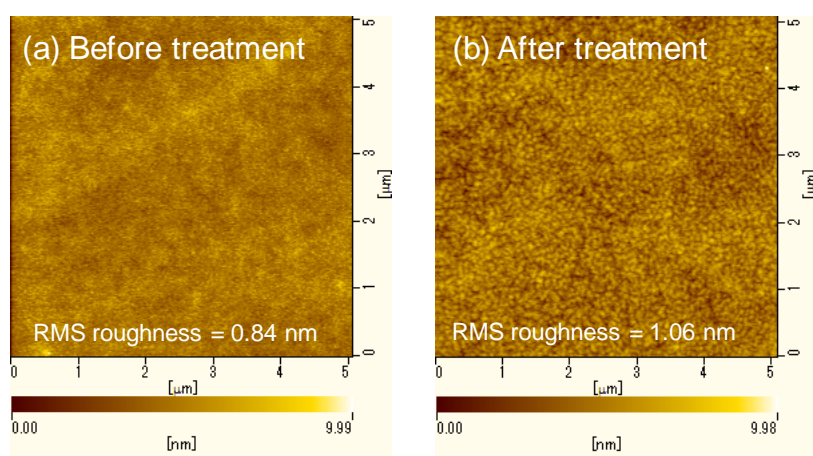


Fig. S1. Atomic force microscopy (AFM) images (topographic images) of the poly(FA-C<sub>8</sub>) brush before and after the treatment with scCO<sub>2</sub> and subsequent slow quench process. AFM observations were conducted in tapping mode at a driving frequency of 110 kHz using an SPA-400 with an SPI 3800N controller (SII NanoTechnology Inc.) in air at room temperature (relative humidity 30%). The polymer brush surface was scanned at a rate of 10 μm/s using an aluminum-coated silicon nitride rectangular cantilever (SI-DF20, SII NanoTechnology Inc.) with a spring constant of 15 N/m.