Tuning the structure, thermal stability and rheological properties of liquid crystal phases via the addition of silica nanoparticles

Electronic Supplementary Information

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Figure S1: Polarising light microscopy (PLM) images of system $F$ while heating at 2°C/min. 
(A) 2°C, (B) 5°C, (C) 10°C, (D) 15°C, (E) 20°C, (F) 25°C, (G) 30°C, (H) 35°C, (I) 40°C, and 
(J) 45°C. The scale bar represents 0.2 mm.

Figure S2: Photographs of a vial of system $F$ before (left) and after (right) five minutes in the 
refrigerator at $\approx 4^\circ$C, showing temperature-induced phase separation (visible as clouding).
Figure S3: Polarising light microscopy (PLM) images of p-xylene at 0°C. The scale bar represents 0.2 mm. Note that condensation was observed on top of the slide for (B) and (C).
Figure S4: Temperature controlled SAXS measurements for system F/HB. Spectra above 26°C were collected while heating, and temperatures below 26°C were collected while cooling (i.e. the return to 26°C after heating or cooling is not depicted).
Figure S5: Temperature controlled SAXS measurements for system F/HP. Spectra above 26°C were collected while heating, and temperatures below 26°C were collected while cooling (i.e. the return to 26°C after heating or cooling is not depicted).

\[ q / \text{Å}^{-1} \]

\[ I(q) / \text{Arbitrary units} \]
Figure S6: Temperature controlled SAXS measurements for system F/20. Spectra above 26°C were collected while heating, and temperatures below 26°C were collected while cooling (i.e. the return to 26°C after heating or cooling is not depicted).
Figure S7: Polarising light microscopy (PLM) images of system F/HB while heating at 2°C/min. (A) 2°C, (B) 5°C, (C) 10°C, (D) 15°C, (E) 20°C, (F) 25°C, (G) 30°C, (H) 35°C, (I) 40°C, and (J) 45°C. The scale bar represents 0.2 mm.

Figure S8: Polarising light microscopy (PLM) images of system F/HP while heating at 5°C/min. (A) 0°C, (B) 5°C, (C) 10°C, (D) 15°C, (E) 20°C, and (F) 25°C. The scale bar represents 0.2 mm.