Electronic Supplementary Material (ESI) for Nanoscale.

Supporting information

Chiral Nematic Porous Germania and Germanium/Carbon Films

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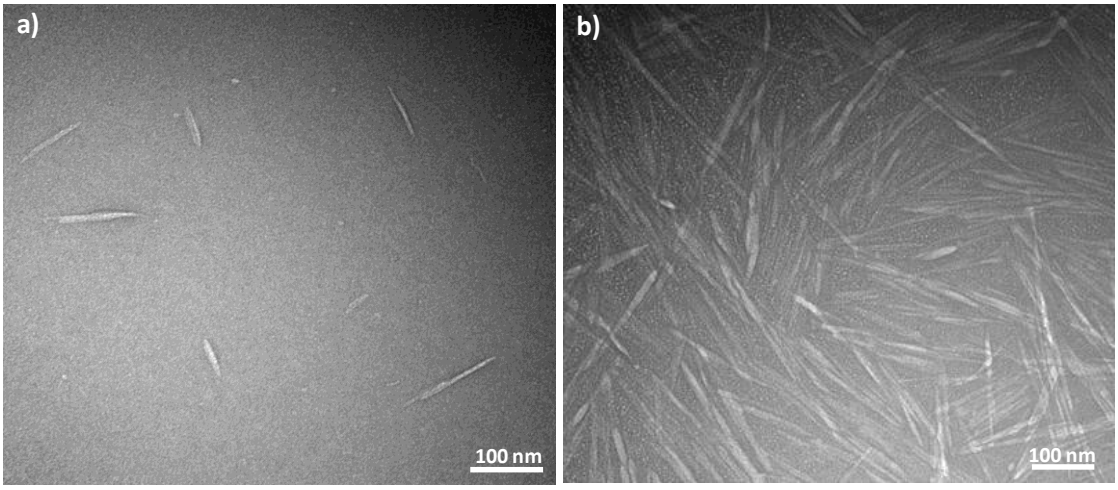

Figure S1. TEM images of the aqueous solution of CNCs (0.002 wt%).

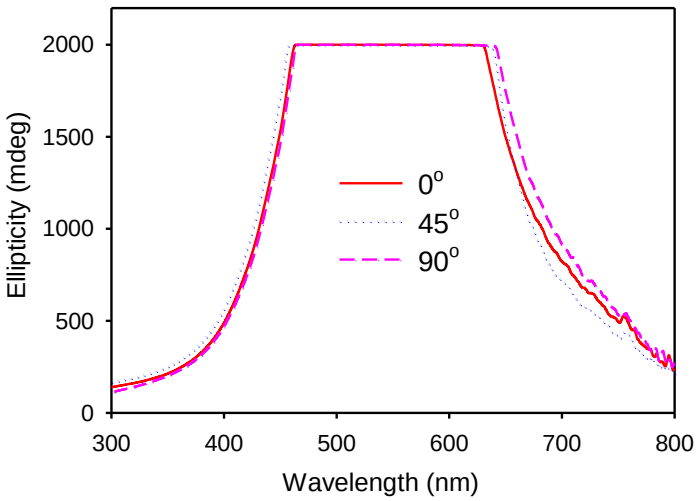

Figure S2. CD spectra of a GeO_2/CNC composite film obtained by rotating the sample from 0° to 90°. No significant change is observed, indicating that the positive signal is not dominated by linear birefringence.

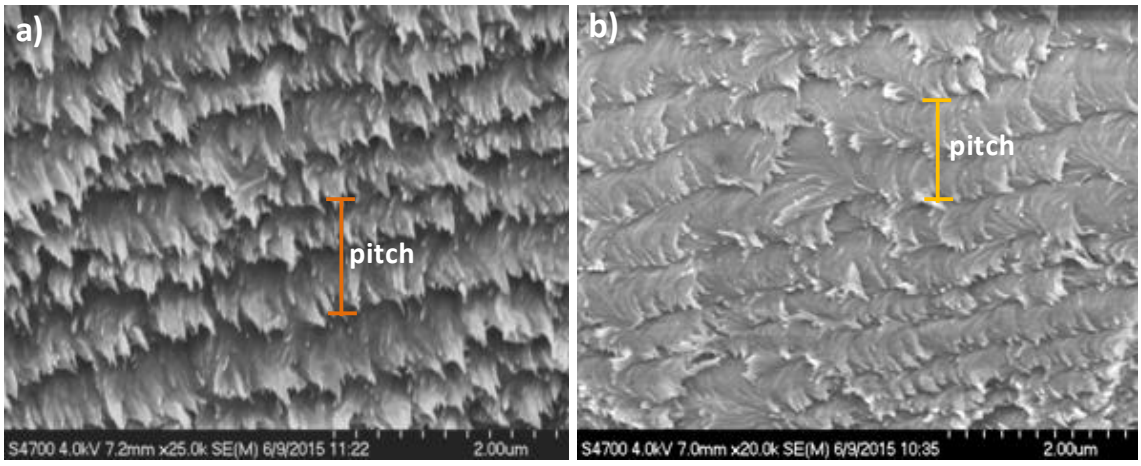

Figure S3. SEM images viewed perpendicular to fracture cross-sections of the GeO_2/CNC composite films prepared using the water/DMF ratio of 1:1 (a) and 1:2 (b).

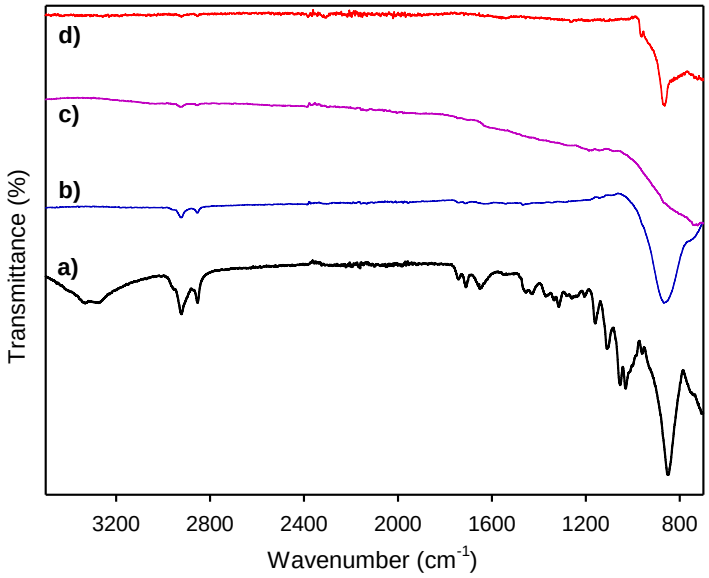

Figure S4. FTIR spectra of chiral nematic GeO_2/CNC composite film GeO_2/CNC (a) and the corresponding chiral nematic GeO_2 films **Ge-A** (b), mesoporous Ge/C composite film **Ge-H** (c) and GeO_2/C composite film **Ge-N** (d).

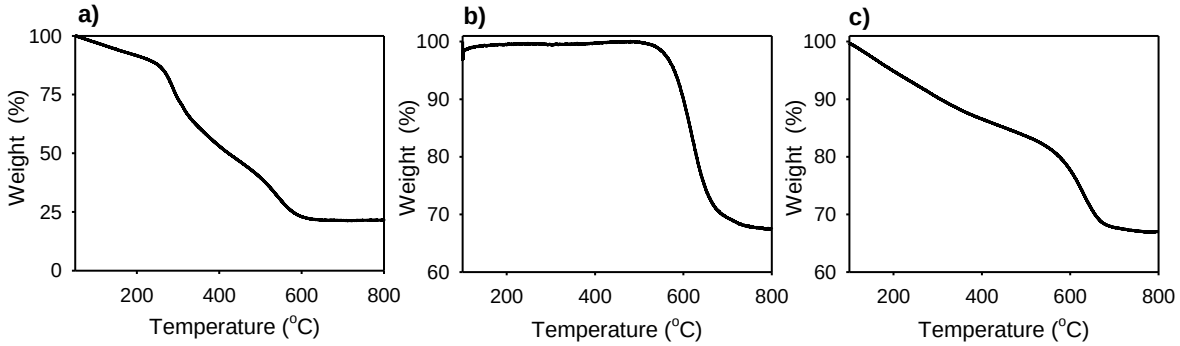

Figure S5. TGA curve of (a) the chiral nematic GeO_2/CNC composite film and the corresponding chiral nematic mesoporous (b) Ge/C composite film **Ge-H** and (c) GeO_2/C composite film **Ge-N**.

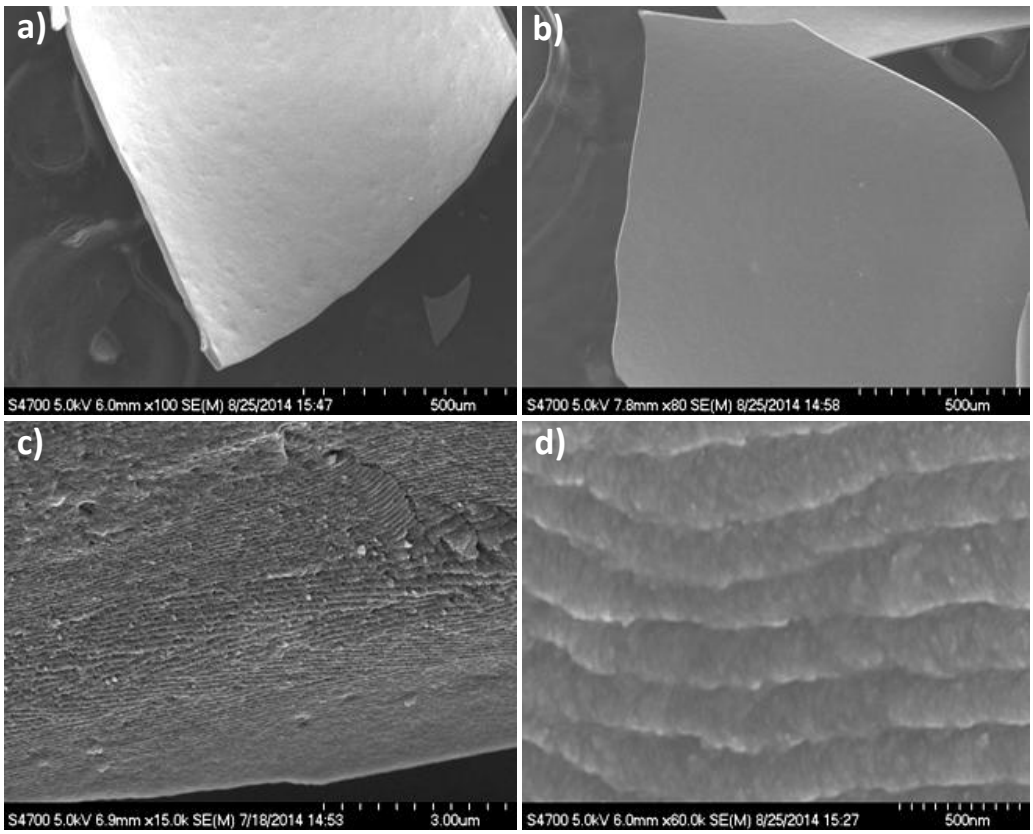

Figure S6. Expanded SEM images of chiral nematic GeO_2 films (**Ge-A**) obtained by calcination of GeO_2/CNC composite films under flowing air. (a,b) The top view with low magnification confirms the smooth surface of GeO_2 film; (c,d) Under higher magnification, the images viewed along the edges showing the layered twisting structures.

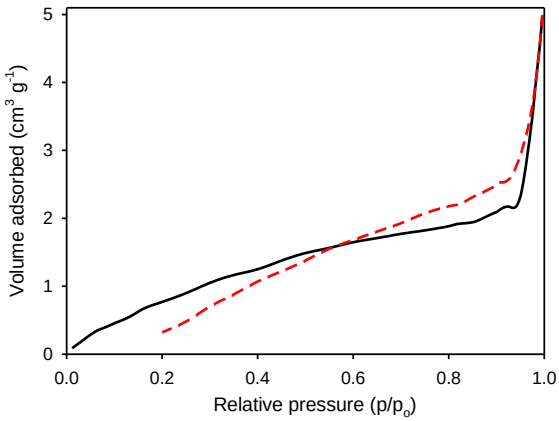

Figure S7. N_2 absorption and desorption isotherms of chiral nematic GeO_2 films (**Ge-A**) obtained from calcination of the GeO_2/CNC composite film under air. This material has very low surface area.

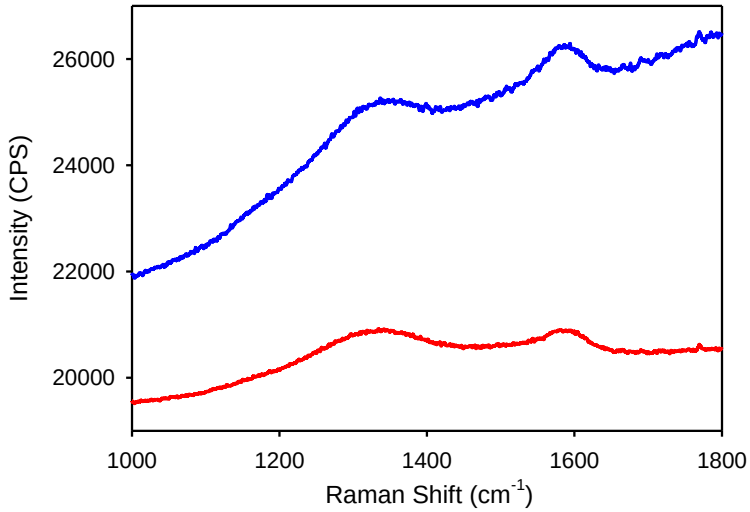

Figure S8. Raman spectra of chiral nematic mesoporous Ge/C film (**Ge-H**, blue line) and GeO_2/C composite film (**Ge-N**, red line).

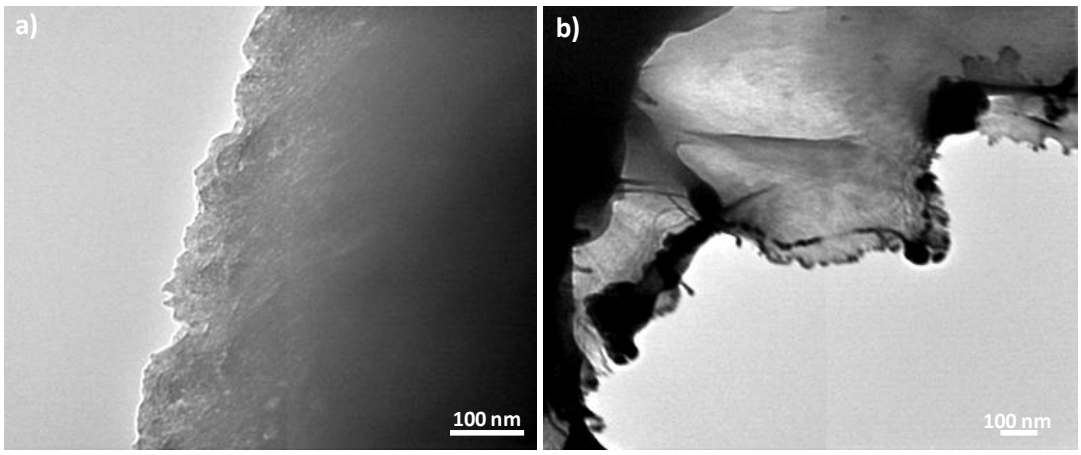

Figure S9. Expanded TEM images of GeO_2/C films (**Ge-N**).