Supplementary Information: Controlled synthetic chirality in macroscopic assemblies of carbon nanotubes

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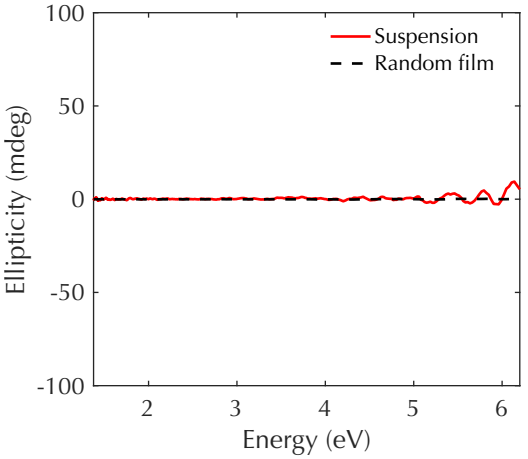
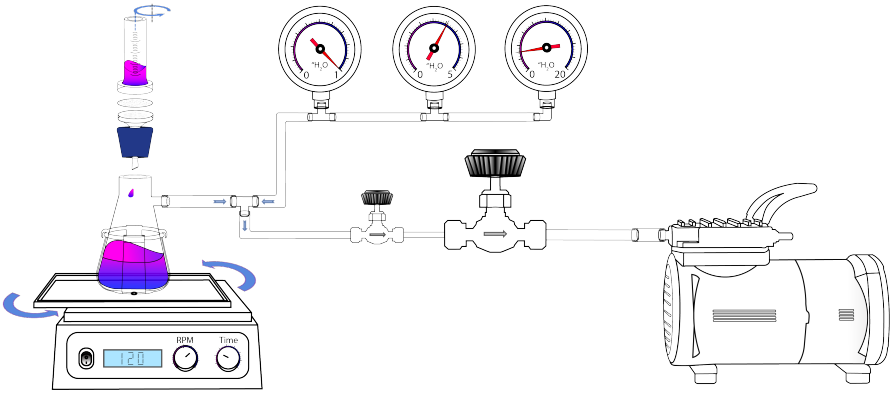
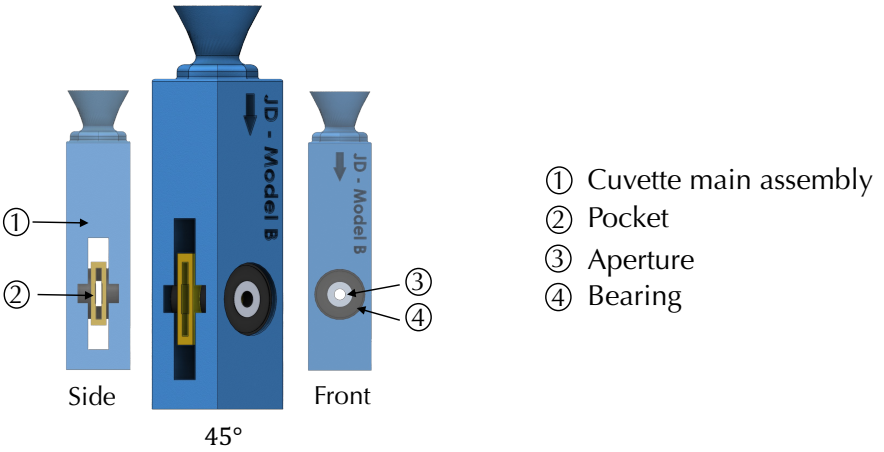


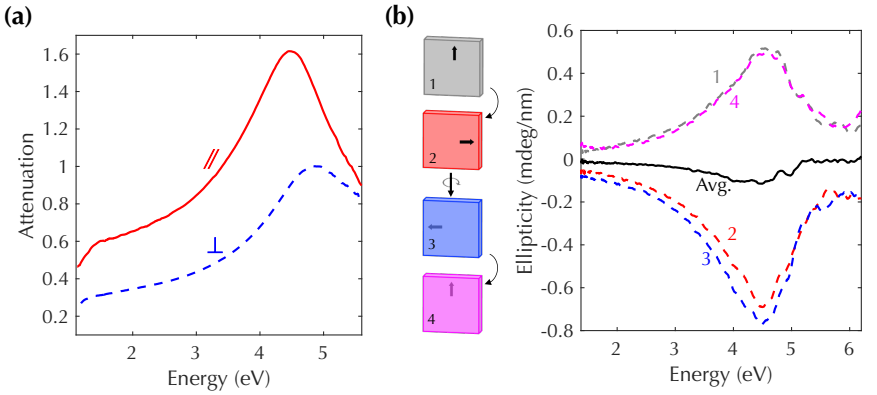
Supplementary Figure 1 CD spectra of the aqueous suspension of CNTs consisting of a racemic mixture and their randomly oriented film prepared via CVF.



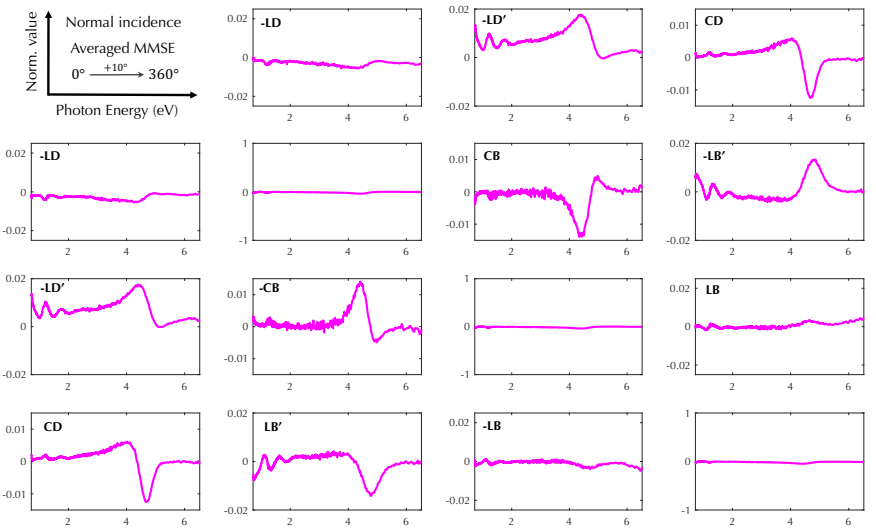
Supplementary Figure 2 Schematic of mechanical-motion-assisted vacuum filtration system that is placed on an orbital shaker. The filtration flow is controlled with three pressure gauges and valves, which are connected to a vacuum pump.



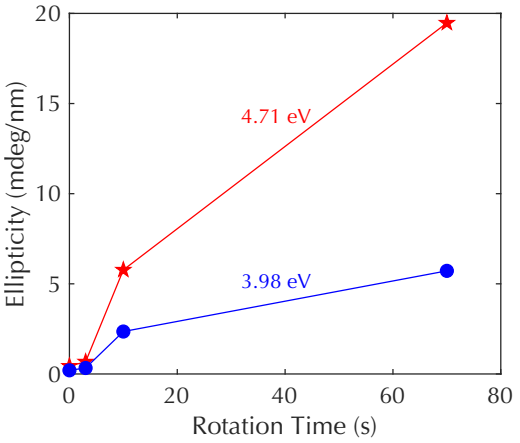
Supplementary Figure 3 Schematic of the 3D printing model of the customized sample holder cuvette, which consists of a main assembly, pocket, two apertures, two bearings for sample rotation.



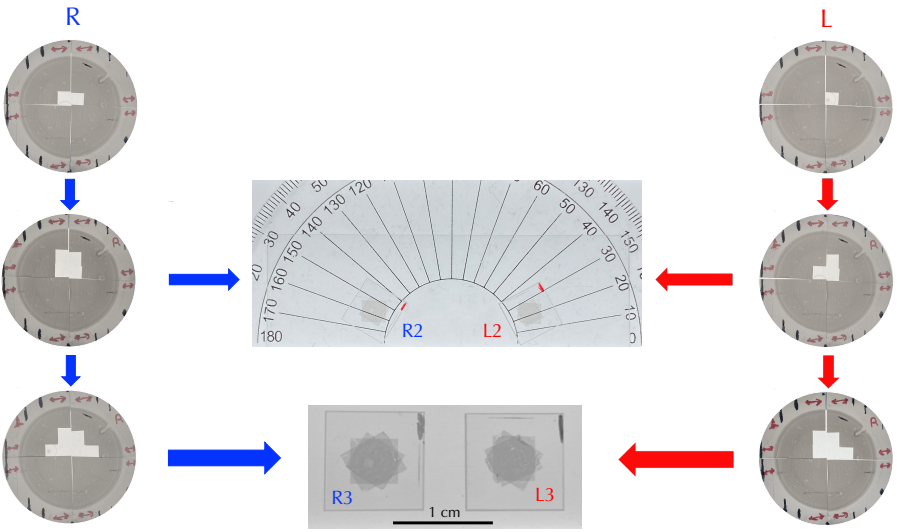
Supplementary Figure 4 (a) Linearly polarized absorption spectra and (b) CD spectra of an aligned CNT film prepared using a shear stress technique.



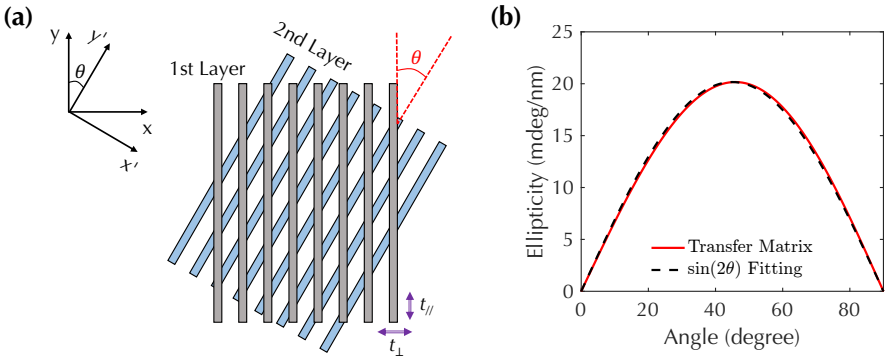
Supplementary Figure 5 Decomposed and averaged Mueller matrix spectra of a twisted CNT film shown in the Fig. 2c of main text.



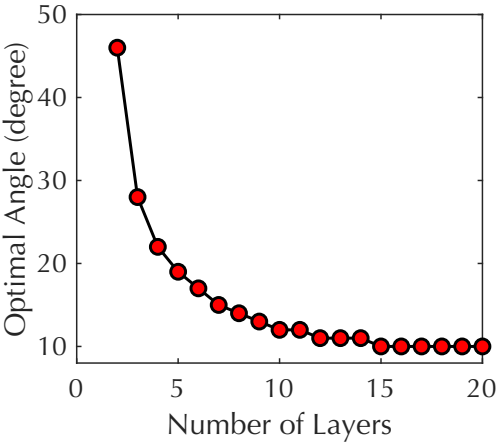
Supplementary Figure 6 Ellipticity recorded in the deep UV range at $\lambda_1 = 4.71\,\text{eV}$ (263 nm) and $\lambda_2 = 3.98\,\text{eV}$ (312 nm) as a function of rotation time.



Supplementary Figure 7 Photographs of twisted-stacked CNT films in left-handed and right-handed manners, respectively. The twist angle is 30°.



Supplementary Figure 8 (a) Schematic of a twisted two-layer stack of aligned CNTs. (b) The comparison of calculated ellipticity as a function of twist angle using transfer matrix and Jones calculus methods.



Supplementary Figure 9 Calculated optimal twist angle as a function of layer number in twisted stacks.

Supplementary Table 1 DUV ellipticity for different chiral platforms

Platform	Wavelength (nm)	Ellipticity (mdeg/nm)	Reference
TiO_2 nanohelix metamaterial	∼270	∼17	Ref. [1]
Al collodial chiral plasmonic shell	∼280	∼4	Ref. [2]
Mg nanohelix metamaterial	∼275	∼16	Ref. [3]
Al gammadion metamaterial	∼250	∼8.6	Ref. [4]
Twisted bilayer graphene	∼280	∼3	Ref. [5]
$(MBA)_2PbI_4$ perovskites	∼ 220	∼0.2	Ref. [6]
Twist-stacked three-layer CNT films	∼ 260	∼40	Our work

References

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