

Unmasking the structure of a chiral cubic thermotropic liquid crystal phase by a combination of soft and tender resonant X-ray scattering

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1. Supplemental Table

Table S1. Intensities of the resonantly enhanced peaks that are not observed at a non-resonant X-ray scattering, calculated for the TCG model with scatterers in the centres of channels having equal or different strengths, with the strength depending on the length of the channel. Intensities are calculated relative to the intensity of the resonant (113) peak, the intensity of which is independent of the sense of orientation of the scatterer polarization axes and their strengths. The intensities are calculated for a powder sample for rotations on all the grids being either clockwise (cw) or counterclockwise (ccw) and for the opposite sense of rotation on the inner/outer (I/O) grids and middle (M) grid. All the intensity ratios must be multiplied by 10^6 .

	(<i>hkl</i>)	All ccw	All cw	I/O-ccw M-cw	I/O-cw M-ccw
Equal strengths	(011)	4.4	17	15	7.1
	(002)	19	12	10	16
	(233)	46	68	54	56
Different strengths	(011)	25	37	27	41
	(002)	94	66	36	48
	(233)	223	324	164	199

2. Supplemental Figures

The angular dependence of the scattered intensity was calculated for all the possible rotations on the grids: all the rotations being either clockwise (cw) or counterclockwise (ccw) and for the opposite sense of rotation on the inner/outer (I/O) grids and middle (M) grid, both for the powder and monodomain sample and for the cases of either equal or different strengths of the scatterers, with the strength depending on the length of the channel. For powder samples (Figure S1) different senses of rotation or strengths of scatterers do not affect the qualitative angular dependence (the maxima and minima remain at the same angles). For monodomain samples there is a significant difference among different cases regarding the sense of rotation, while the scattering strength does not play a significant role.

Supplementary Information

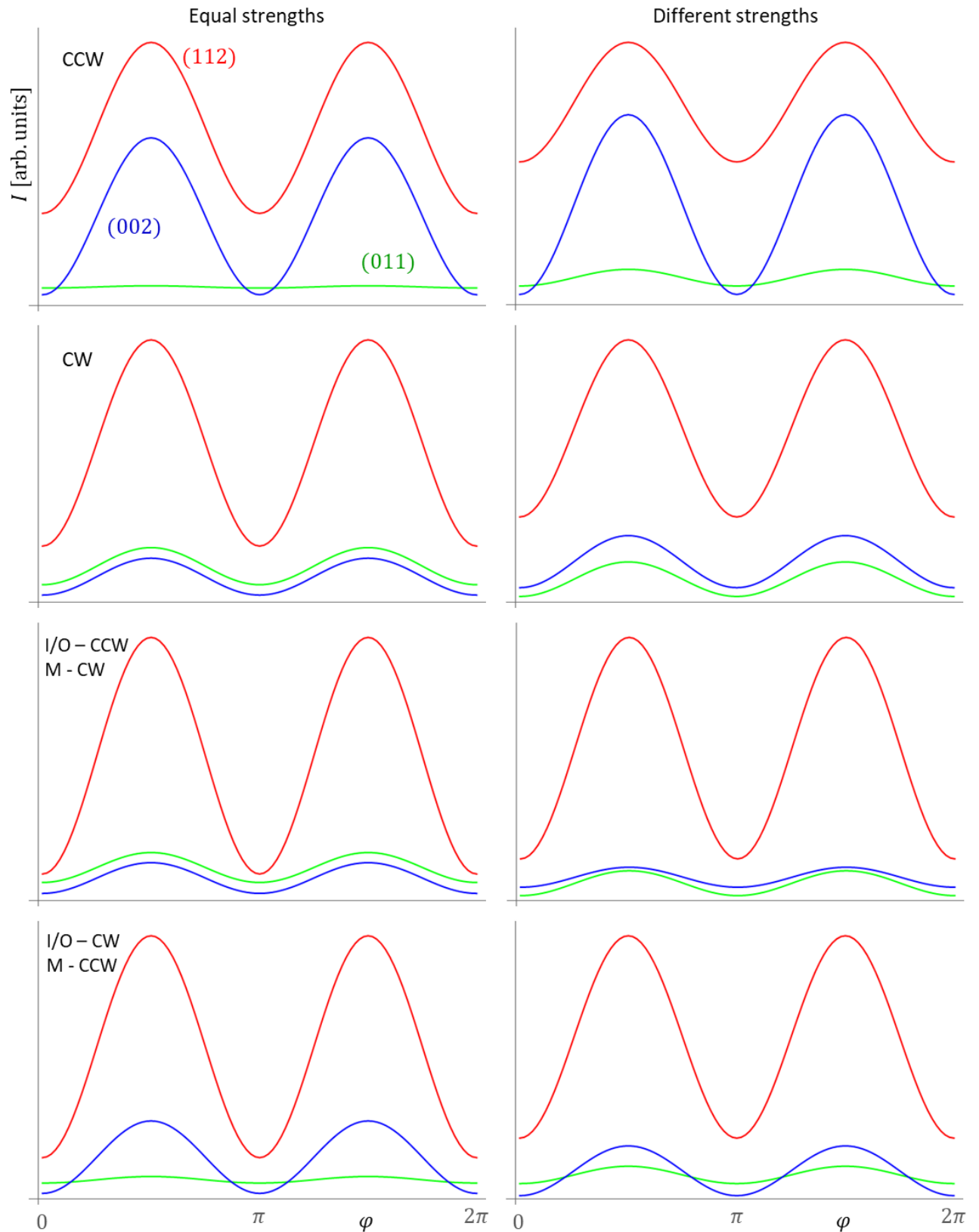


Figure S1. **Powder samples.** Dependence of intensity (I) in arbitrary units on the position (φ) on the scattering ring (see Fig. 4 in the main paper) for different senses of rotation of polarization axes of the scatterers on the three grids and for equal and different strengths of the scatterers.

Supplementary Information

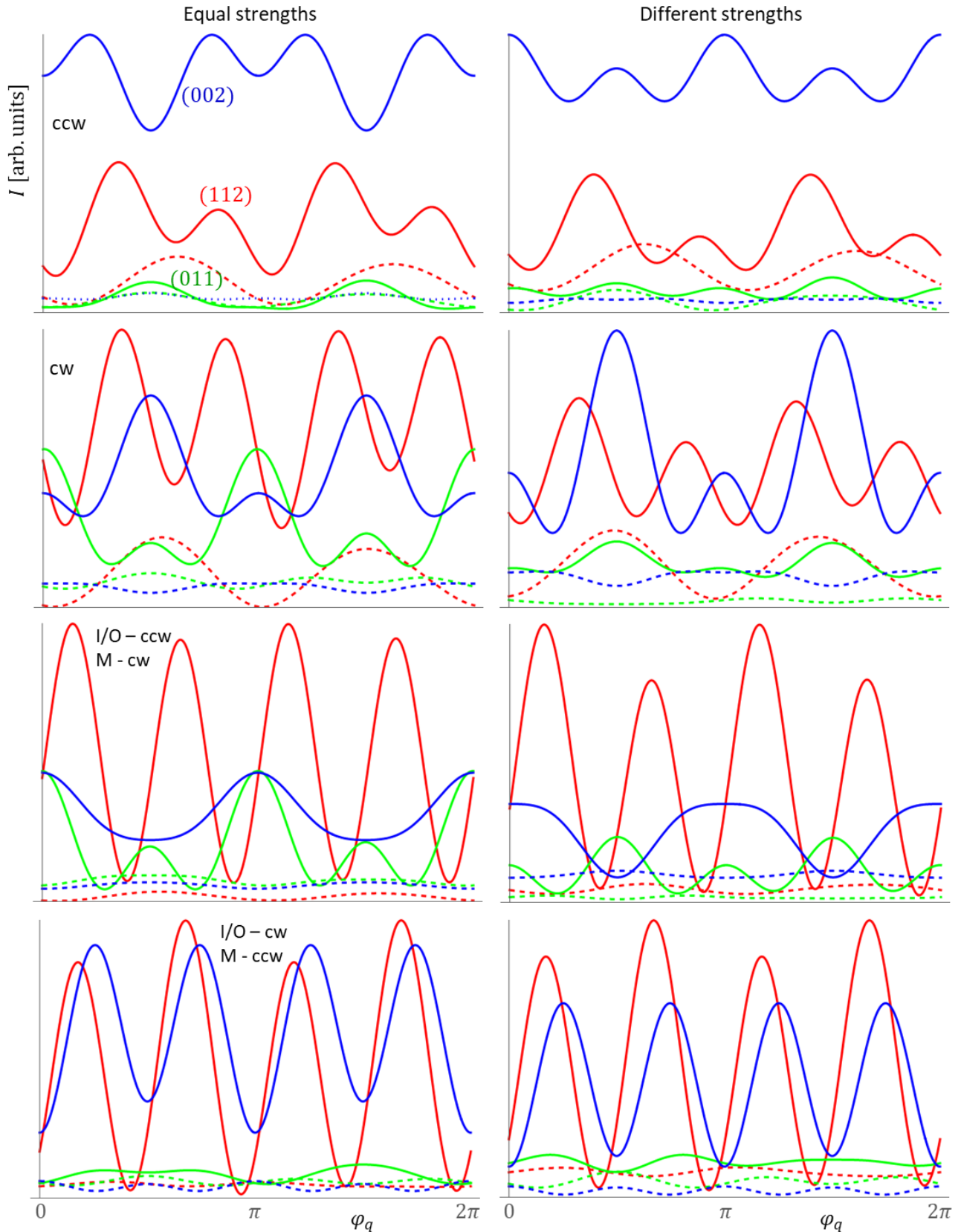


Figure S2. *Monodomain samples*. Dependence of intensity (I) on the angle of rotation (φ_q) of the sample (see Fig. 4 in the main paper) for different senses of rotation of polarization axes of the scatterers on the three grids and for equal and different strengths of the scatterers. Solid curves: σ -polarized incident wave; dashed curves: π -polarized incident wave.