

(Supporting Information)

Table 1 shows the measurement results of Kerr coefficients of sample 6, 7, 8 and 9 (10 wt%, 11 wt%, 12 wt% and 13 wt% chiral dopant ISO-(6OBA)₂ in (5CT/5CB/JC1041XX)). We could know that had large Kerr coefficients from 2.56 to 6.20 $\times 10^{-11}$ m / V² and the Kerr coefficients were decreased with increase of chiral dopant concentration four chiral dopant concentration chiral LC mixtures. It might be considered as the LC molecules was difficult to align to electric field with increase of chirality of LC molecules.

Also, the measurement results of the rising time and the falling time of sample 6, 7, 8 and 9 (10 wt%, 11 wt%, 12 wt% and 13 wt% chiral dopant ISO-(6OBA)₂ in (5CT/5CB/JC1041XX)). There are very fast response time less than one millisecond at all four kinds chiral LC mixtures in respect with total optical response time which is sum of rising time and falling time. Namely, the response time of the four kinds of chiral nematic LC mixtures had fast response time under 1 ms as same as conventional BP.

Table 1 Kerr coefficient and optic response time for four kinds of chiral nematic LC mixtures with various chiral dopant concentrations

Optical property	Concentration of chiral dopant (wt%)			
	Sample 6 10.0	Sample 7 11.0	Sample 8 12.0	Sample 9 13.0
Kerr coefficient (10^{-11} mV ⁻²)	6.20	5.56	4.47	2.56
Total Response time (μ s)	797.88	652.35	906.75	942.60
Rising Time (μ s)	414.04	304.54	467.88	497.0
Falling Time (μ s)	383.84	347.81	438.87	445.6