

PC-17

SYNTHESES AND OPTICAL PROPERTIES
OF CHOLESTERIC LIQUID CRYSTAL POLYMERS
UTILIZING P-PHENYLENE
BIS-(P-(3-ACRYLOXY-2-METHYLPROPYLOXY)BENZOATE

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We synthesized chiral cholesteric liquid crystalline monomer *p*-phenylene bis-(*p*-3-acryloxy-2(S)-methylpropoxy)benzoate (**1**) and achiral nematic liquid crystalline monomer, *p*-phenylene *p*-acryloxy-6-hexyloxy-*p*-octyloxybenzoate (**2**) for the construction of cholesteric polymer network with a pitch gradient. In this research we attempted to synthesize cholesteric polymer film which have a wide reflection bandwidth in the region of visible wavelength with the synthesized chiral cholesteric monomer **1** and nematic monomer **2** under various photopolymerization conditions. We succeeded to construct cholesteric polymer film network with a pitch gradient covering more than 200 nm bandwidth in the visible wavelength by diffusion controlled photostructuring method.