Arrangement control of focal conic domains (FCDs) by using stamp imprint method

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The smectic liquid crystal phase has a layered structure which has an additional positional order as well as orientational order. Toric focal conic domains (TFCDs) is formed in smectic liquid crystal phase with antagonistic anchoring conditions (random planar at the substrate interface and homeotropic at air interface). In previous research, our group achieved highly ordered hexagonal array of TFCDs with surface treatment of planar polymer coating and showed an application as microlens array. In this study, we introduce new stamping method for controlling the arrangement of TFCDs. We have successfully obtained a variety of spatially arranged TFCD arrays such as square, hexagonal, rhombic arrays by changing stamp angle control. We also show an application as tunable microlens arrays using arrangement control of TFCDs.