

Control of regular array of focal conic domains (FCDs) by a simple stamping 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. Focal conic domains (FCDs) are formed in smectic liquid crystal phase with antagonistic anchoring conditions (tangential alignment at the substrate interface and vertical at air interface). In previous research, our group achieved highly ordered hexagonal array of FCDs with surface treatment of polymer coating applying degenerate tangential anchoring. However, it is difficult to obtain various arrangements of FCDs except for strong arrangement techniques. In this study, we introduce a simple stamping method for controlling the arrangement of FCDs. We have successfully obtained a variety of spatially arranged FCD arrays such as square, hexagonal, rhombic arrays by changing stamping angle control.