

Abstract Submitted
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Tunable lithography masks using chiral nematic fluids HYEON SU JEONG¹, Department of Chemical and Biomolecular Engineering, Korea Advanced Institute of Science and Technology, Daejeon, Korea, MOHAN SRINIVASARAO, School of Materials Science and Engineering, Georgia Institute of Technology, Atlanta, GA, HEE-TAE JUNG, Department of Chemical and Biomolecular Engineering, Korea Advanced Institute of Science and Technology, Daejeon, Korea — We present a facile route for pattern formation using chiral nematic fluids as tunable masks in lithography process. The chiral nematic phase prepared by adding a chiral dopant (CB15) to 5CB acted as a set of parallel cylindrical lenses and as a polarization selective photomask for the preparation of periodic line patterns. The pitch of the helical twist was easily controlled by the concentration of chiral agent and the feature size of the resulting pattern was easily tuned. Because of the high mobility of the small liquid crystalline compound, the preparation of chiral nematic fluids based lithography masks requires only a few seconds. This approach has significant advantages including facility, range of surface ordering, and rate of forming periodic arrays.

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