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**Flexopolydispersity of Nematic Liquid Crystals<sup>1</sup>** YUE SHI, DONG CHEN, Department of Physics and Liquid Crystal Material Research Center, University of Colorado-Boulder, RIZWAN MAHMOOD, Department of Physics, Slippery Rock University, NOEL CLARK, Department of Physics and Liquid Crystal Material Research Center, University of Colorado-Boulder — Flexopolydispersity is the coupling of gradients in the director field  $\mathbf{n}(\mathbf{r})$  of a nematic phase made from a polydisperse mixture of anisotropic particles in solution to the spatial change in variables describing the local mean particle shape, size, and concentration: In solutions of sufficiently polydisperse plates this coupling can lead to a nematic phase with a “blue-phase” like array of +1 defect lines. Such a structure has been observed in the lyotropic nematic phase of solutions of graphene oxide sheets.

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Yue Shi  
yue.shi@colorado.edu  
Dept of Physics and Liquid Crystal Material Research Center,  
University of Colorado-Boulder

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