

## **Toroidal Self-Assembly in Columnar Chromonic Liquid Crystals**

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Chromonic liquid crystals are composed of disc-like molecules that tend to stack on top of each other when dispersed in water. Beyond a certain concentration, the columns formed bend into rings, and these in turn aggregate into interesting geometrical shapes. An important question in this setup is how the dominant mechanism - shape formation in this case - is affected by specific system parameters. We formulate the model as an energy minimization problem with constraints. Our results address toroidal shape formation, and how it is affected by interfacial and elastic material properties as well as concentration. This is joint work with M. C. Calderer, M. Espanol, L. Xu, and L. Zhao.