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Liquid Crystal properties of Silver (Ag) Nanowires as a Function of Flow LUZ J. MARTINEZ-MIRANDA, LIANGBING HU, COLIN D. PRESTON, University of Maryland — We study the liquid crystal properties of nanowires of silver (Ag) as a function of flow of the solvent. Specifically, we are interested in finding the flow-concentration point where the electrical properties (IV curve) are: 1. Along one direction; and, 2. At a maximum along that particular direction. We are interested in the structure intermediate between the liquid crystal phase and the isotropic phase (the heterogenous phase) and how "ordered" this phase becomes with flow. Flow is varied in our case by having a substrate with gratings of varying depth in them. The flow due to the grating and the thickness of the film, plus the size of the nanowires will dictate the degree of order in the heterogeneous phase. This order dictates how the electrical properties orient in the resulting film. These studies can be expanded to include other semiconducting and/or metallic nanowires.

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