

Abstract Submitted  
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**Electro-optic properties of liquid crystal carbon nanotube composites** GEORGI GEORGIEV, Assumption College, YANIEL CABRERA, Tufts University, MARK CRONIN, CHRISTOPHER ROCHELEAU, ZARNAB IFTIKHAR, Assumption College, PEGGY CEBE, Tufts University, TUFTS UNIVERSITY COLLABORATION, ASSUMPTION COLLEGE COLLABORATION — We study the effects of carbon nanotubes on different properties of different liquid crystals: the elastic constant, Freedericksz transition, topological defect formation, interaction with external fields (i.e. electric). During our previous studies on the altitudinal angle of carbon nanotube doped liquid crystal electro-optic cells, we have measured a large shift of the transition voltage during Freedericksz transition. We are continuing our exploration on the physical properties of the liquid crystal nanocomposites. One of the most interesting questions is how different types of carbon nanotubes, conductive and semi-conductive affect the electrical properties of the liquid crystals. Our main tool is two dimensional microscopic transmission ellipsometry which provides information about the 3D orientation of the liquid crystalline entities.

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