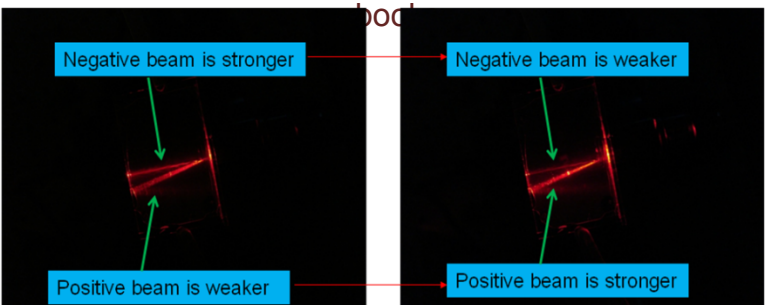
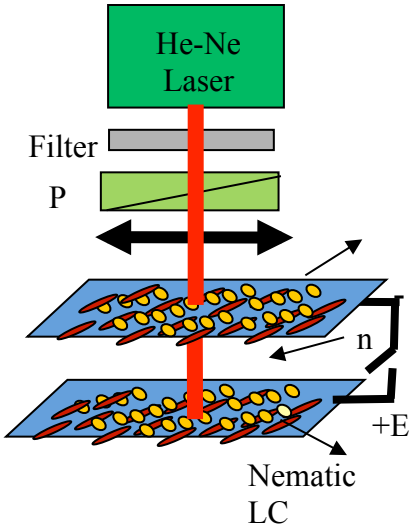
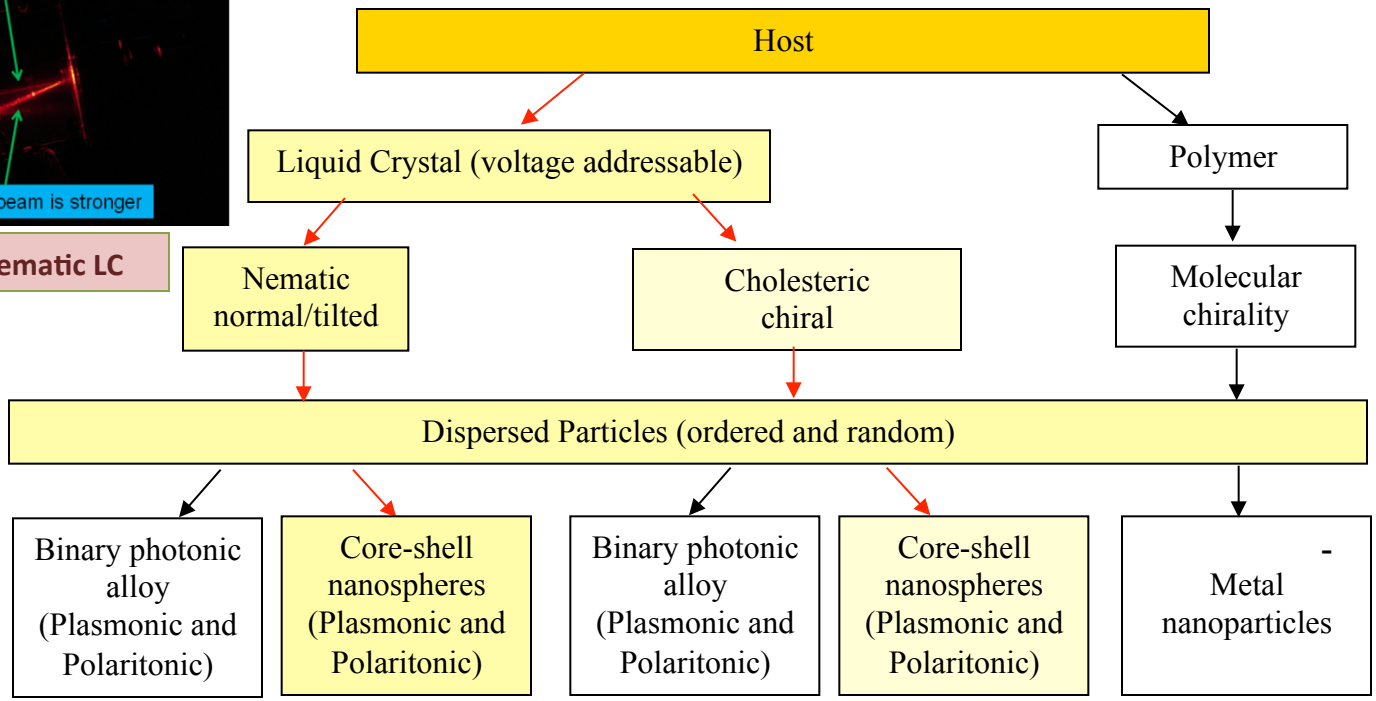
Dr. Partha Banerjee
Nonlinear Optics, Metamaterials, Holography

Dr. Banerjee's research includes a wide range of topics such as nonlinear optics, optical processing, digital holography and digital holographic interferometry, and metamaterials. Currently he is working on two SBIR Phase II and two SBIR Phase I projects involving digital holographic interferometry (Army, Air Force) and metamaterial lens (DARPA). The metamaterial lens described here comprises nanoparticle dispersed liquid crystals which can show polaritonic and plasmonic properties, leading to a overall negative refractive index. The work on digital holographic interferometry involves determination of airplane attitudes, the exact 3-d shape of droplets, and detection of cracks. Dr. Banerjee is the general chair of the Digital Holography Meeting of the Optical Society of America in Miami in 2010,and topical editor of Applied Optics. He is a Fellow of the OSA and SPIE, and has written over 100 technical journal articles and authored 4 book



Tunable negative refraction w/ nematic LC





References : *Banerjee & Nehmetallah JOSA B '06, '07; Banerjee et al JOSA B '08. 2.Banerjee et al SPIE Proc. '07,'08; Banerjee & Chatterjee JOSA B '09; Aylo, Banerjee & Nehmetallah, JOSA B '10.*

Chlorestoric LC w/ordered nanopartcles