Quantum dots doped Liquid crystals and their applications.

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Nanomaterials have proven to be a potential class of non mesogenic materials to tune the properties of mesogenic materials. These nanomaterials may be carbon nanotubes, nanoparticles and quantum dots. We have explored the dispersion of these quantum dots with liquid crystals (LCs) and found some interesting results which are very important from fundamental point of view and also for their applicability in devices. During our experimental studies on various LCs doped with quantum dots we have observed concentration dependence of transition temperature, dielectric parameters, spontaneous polarization and rotational viscosity etc. In the present talk various aspects of these dielectric and electro-optical properties will be discussed for doped LCs as a function of temperature, frequency and the dopent concentration in the light of guest host interactions. Several new aspects which came into the light (like CdSe quantum dots induced soft mode) and few new concepts arising out of experimental results will also be discussed. The talk will also cover the changes taking place in the vital parameters due to doping of quantum dots and their probable impact on future applications of LCs.

References:
