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Unconventional Ionic and Electro-Optical Effects Enabled by Nanomaterials in Liquid Crystals YURIY GARBOVSKIY, Central Connecticut State University — Nanomaterials in liquid crystals are a hot topic of contemporary liquid crystal research. An understanding of the effects of nanodopants on the properties of liquid crystals is critical for the development of novel mesogenic materials with improved functionalities tailored to a variety of applications. They include advanced displays for virtual and augmented reality, tunable electro-optical components for biomedical devices, diffractive optical elements for imaging with flat optics, and reconfigurable signal processing devices operating at microwave and millimeter wave frequencies, to name a few. In my talk, I will focus on the electrical and electro-optical behavior of liquid crystals doped with nanomaterials. Conventional and unconventional ionic and electro-optical effects (including a recently observed inverse guest-host effect) enabled by nanoparticles in liquid crystals will be discussed.

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