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**Assemblies of Cellulose Nanocrystals.**

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The entropically driven coassembly of nanorods (cellulose nanocrystals, CNCs) and different types of nanoparticles (NPs), including dye-labeled latex NPs, carbon dots and plasmonic NPs was experimentally studied in aqueous suspensions and in solid films. In mixed CNC-NP suspensions, phase separation into an isotropic NP-rich and a chiral nematic CNC-rich phase took place; the latter contained a significant amount of NPs. Drying the mixed suspension resulted in CNC-NP films with planar disordered layers of NPs, which alternated with chiral nematic CNC-rich regions. In addition, NPs were embedded in the chiral nematic domains. The stratified morphology of the films, together with a random distribution of NPs in the anisotropic phase, led to the films having close-to-uniform fluorescence, birefringence, and circular dichroism properties.