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**Macrocrystals of Colloidal Quantum Dots in Anthracene: Exciton Transfer and Polarized Emission** ZELIHA SORAN-ERDEM, TALHA ERDEM, Bilkent University, PEDRO LUDWIG HERNANDEZ-MARTINEZ[1], Nanyang Technological University, MEHMET ZAFER AKGUL, Bilkent University, NIKOLAI GAPONIK, TU Dresden, HILMI VOLKAN DEMIR[2], Nanyang Technological University — We systematically investigate the exciton energy transfer from anthracene host (donor) to quantum dots (acceptor) in a centimeter-scale macrocrystal of nonpolar colloidal quantum dots incorporated into anthracene. The decrease in photoluminescence lifetime of the donor anthracene indicate a strong energy transfer with increasing quantum dot concentration in the macrocrystals. In addition, anisotropic emission from the isotropic quantum dots in anthracene macrocrystals was observed. The quantum dots inside the anthracene host acquired a polarization ratio of $\sim$1.5 at 0 degree collection angle, and this increases to $\sim$2.5 at the collection angle of 60 degree. Finally, a proof-of-concept application of these excitonic macrocrystals as tunable color converters was employed in light-emitting diodes.

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