

## Highly Stable Green/Blue/Violet Photoluminescence from Block Copolymer-Templated Perovskite Nanostructures

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With the rapid developments in metal halide perovskite based light emitting diode technology, photoluminescence quantum yield (PLQY) had increased to near unity and record-high external quantum efficiency over 20% was achieved. However, there remain still critical challenges, due to poor moisture stability of perovskite solids. Herein, we demonstrate color-tunable perovskite nanocrystals encapsulated within block copolymer nanoshells with high PLQY up to 68.7 %. Emission range can be tailored from 410 nm to 535 nm by controlling the orbital overlap and dimensionality. Perovskite nanocrystals also exhibit long-term stability at moisture-laden environment in both colloid and film conditions. The protocol and strategy established in this study can be exploited to explore opportunities in the field of diverse types of optoelectronic and light-emitting devices.