

Heating block coupled modular microfluidic reactor for the synthesis of water-resistant perovskite nanocrystals

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Cesium lead halide perovskite nanocrystals have attracted extensive interest in recent years because of their great optoelectronic properties such as high quantum efficiency and tunable wavelength. However, the instability of CsPbX₃ nanocrystals has still limited for various applications. Here, we present a method towards rapid and stable modification of perovskite nanocrystals with polyhedral oligomeric silsesquioxane (POSS) using module microfluidic system. Interestingly, POSS-CsPbX₃ shows long-time stability in high-humidity condition. Therefore, we believe that a novel and promising strategy can be applied to synthesis of water friendly perovskite functional materials for real field application.