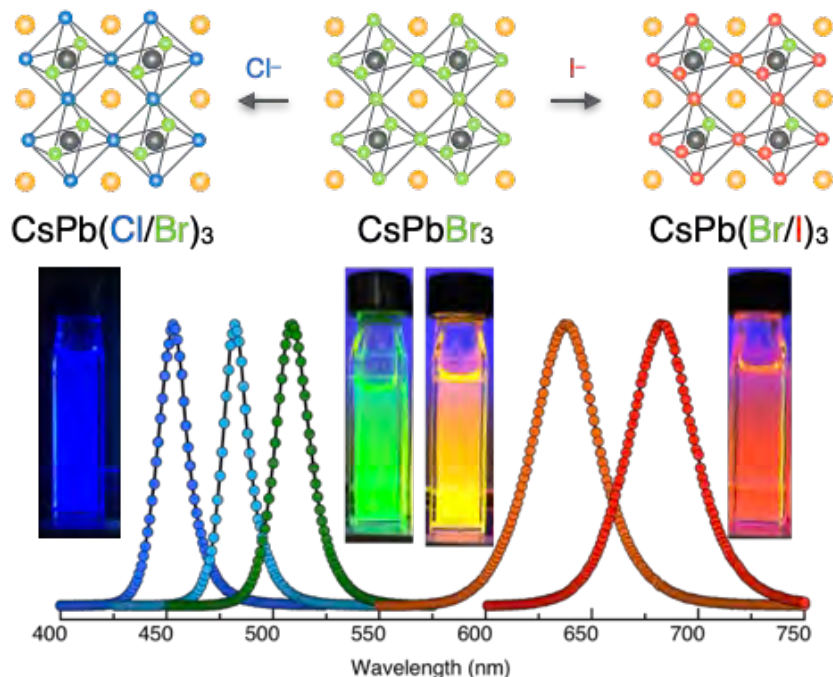


# Perovskite Nanocrystals for LED Applications

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## Perovskite Nanocrystals



✓ Color tunable    ✓ Narrow emission    ✓ LED Application

### Content:

Perovskites nanocrystals (NCs) have attracted much attention as emerging optoelectronic materials for the application of light-emitting devices (LEDs), owing to the excellent photoluminescence quantum yield (PLQY) and narrow full-width half maximum (FWHM) with wide color gamut in full visible range. In general, perovskite with the chemical formula  $\text{ABX}_3$  ( $\text{A}^+$  is monovalent cation,  $\text{B}^{2+}$  is bivalent cation, and  $\text{X}^-$  is halide anions such as  $\text{Cl}^-$ ,  $\text{Br}^-$ ,  $\text{I}^-$ ) NCs, are capped by the long alkyl to achieve colloidal stability in non-polar solvent. The LEDs based on green, red, and near-infrared perovskites have drastically improved the external quantum efficiency (EQE) of over 20% through surface ligand engineering, surface treatments, energy level alignment and by employing a new approach that ensures a halide-rich composition.

We focus on a surface engineering of perovskite NCs, such as ligand exchange, anion exchange and metal doping to achieve high efficiency LEDs.

### Appealing point:

Blue perovskite NCs, Lead free perovskite NCs, Highly stable perovskite NCs,

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