Stable and Bright Perovskite Nanoparticle Thin Film for Advanced Display

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Introduction
We propose a facile method to develop stable and bright perovskite nanoparticles thin films for display application.

Method
Perovskite nanoparticle (PNP) are blended with monomers with photoinitiator or polymers in solution and deposited into thin (20μm in thickness) porous polymer film template. Porous polymer film are nuclear track membrane with vertical cylindrical pores with sub-micron diameter.

Results
Enhanced temperature, humidity and UV illumination of PNP film stability is achieved.

High Temperature Stability
Heating (90°C) and cooling cycles for PNP porous films.

UV illumination Stability
Due to the unique optical property of the porous film, the UV light has less interaction with PNP inside pores.

Structure

References

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Conclusions
The film fabrication method is simple. The thin and flexible porous PNP film is bright and stable for color conversion display.