# Stable and Bright Perovskite Nanoparticle Thin Film for Advanced Display

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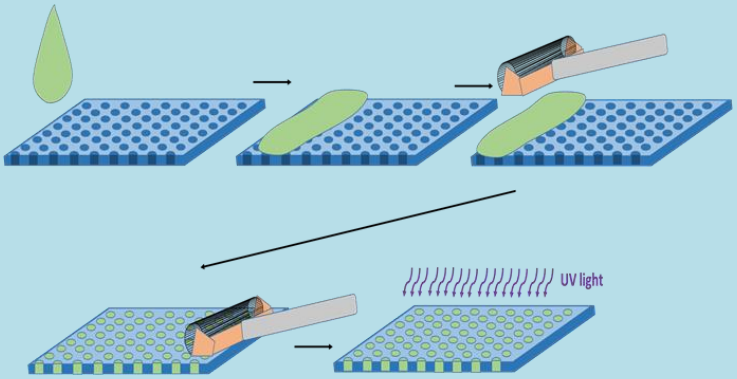
## Introduction

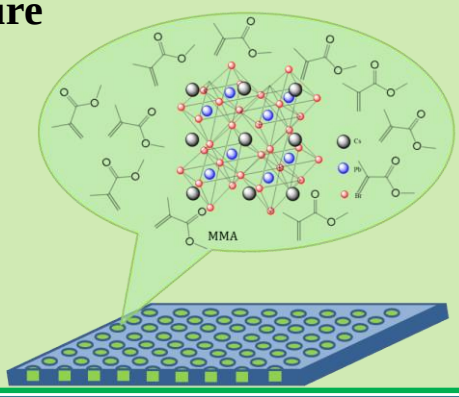
We propose a facile method to develop stable and bright perovskite nanoparticles thin films for display application.

## Method

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




## Structure




## References

[1] M. V Kovalenko, Nano Lett., 2015, 15, 3692.
[2] Y. Dong, Adv. Mater., 2016, 28, 10710–10717.

## Acknowledgement

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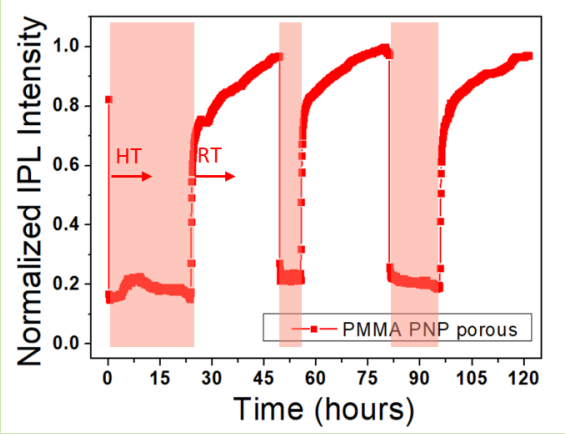
## Results

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

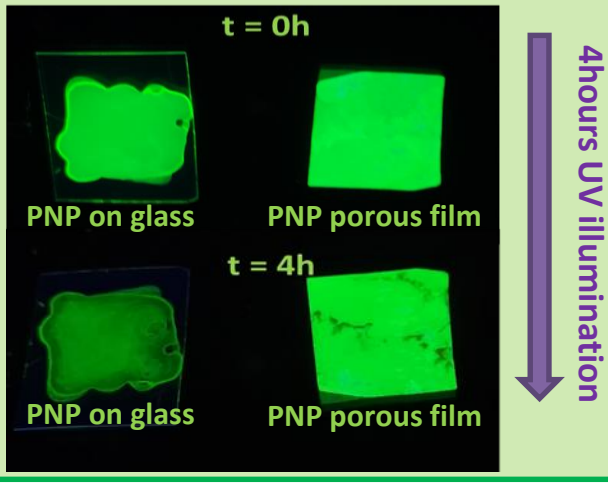
### High Temperature Stability

Heating (90℃) 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.




## Conclusions

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