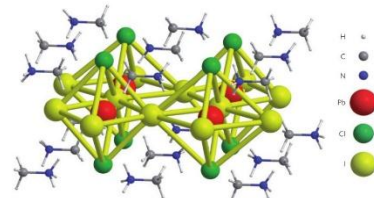


題目：High-Performance, High-Durability Perovskite Photovoltaics Prepared  
 班級/學生：材四甲/江炳煌 Using Ethylammonium Iodide as an Additive  
 指導教授：陳志平老師

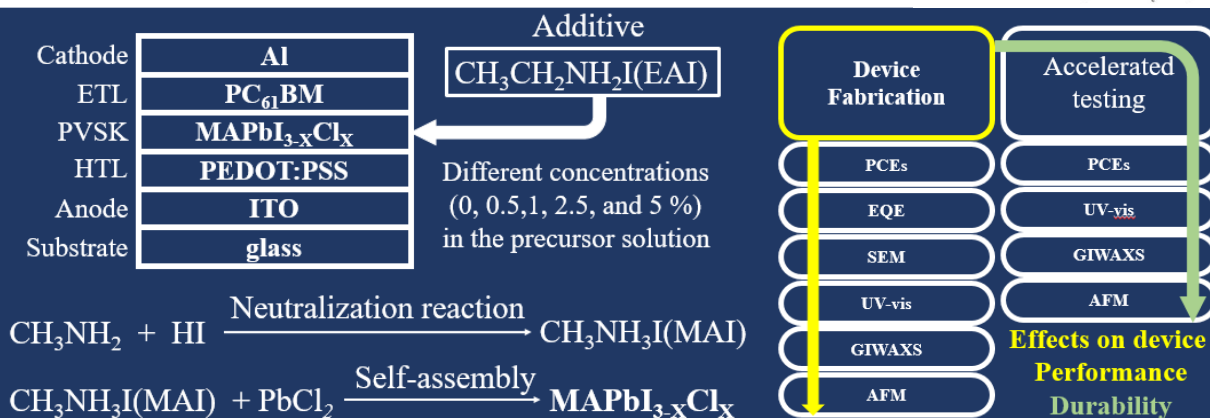
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簡介

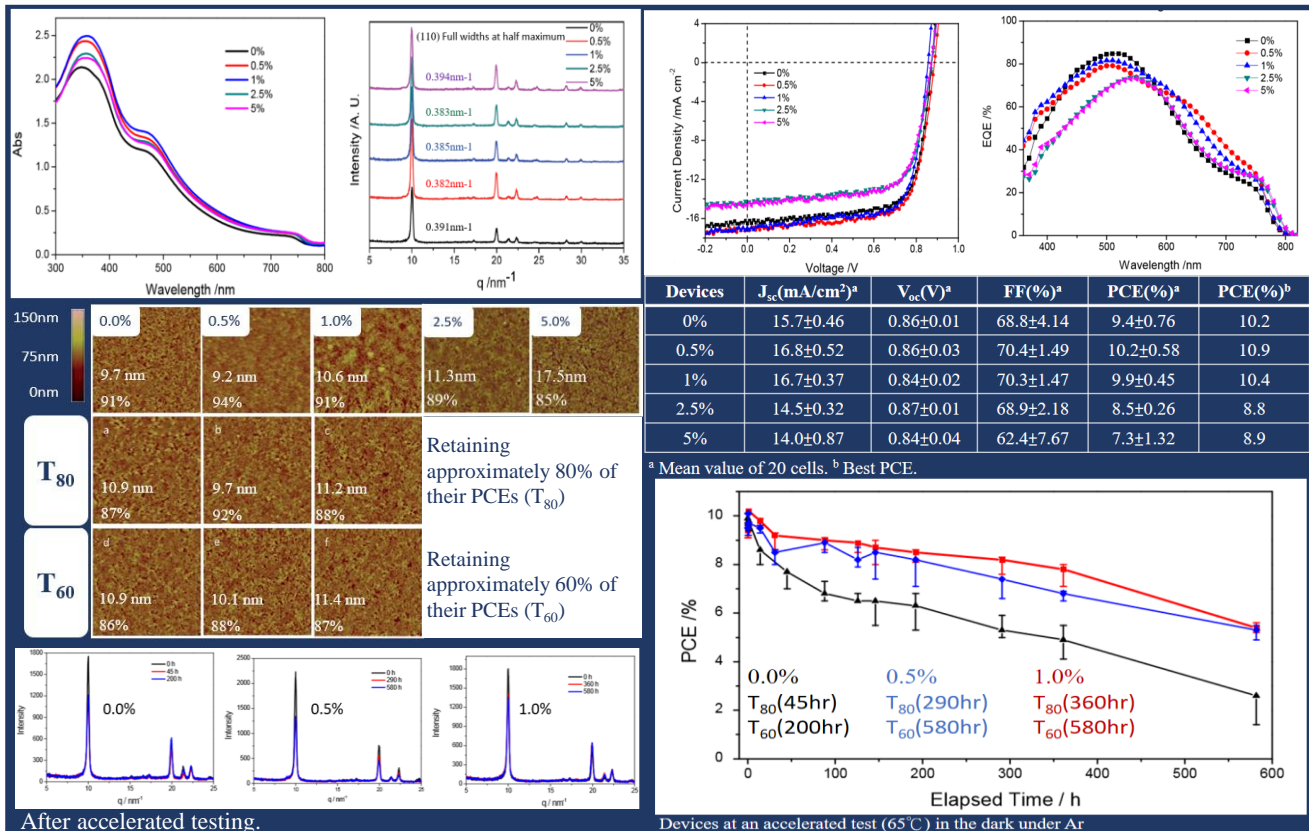
In this study, we determined that the film morphologies, crystallinities, and optical properties of  $\text{CH}_3\text{NH}_3\text{PbI}_{3-x}\text{Cl}_x$  perovskite (PVSK) layers can be manipulated by incorporating a small amount of Ethylammonium iodide (EAI) into the perovskite precursor solution. Devices based on EAI-containing PVSK exhibited extremely high stability.



實驗步驟



研究成果



結論

- ◆ We observed an improvement in the PCE from  $9.4 \pm 0.76$  to  $10.2 \pm 0.58\%$  for the device prepared using 0.5 vol% of EAI as an additive.
- ◆ We found that devices prepared using EAI as an additive exhibited much higher stabilities at  $65^\circ\text{C}$  in the dark under Ar.
- ◆ Morphological changes, as well as deteriorated absorption and crystallinity, of the PVSK films played important roles affecting the degradation in the performance of the PVSK devices under thermal stressing.
- ◆ The devices prepared using EAI exhibited competitive PCEs while, crucially, displaying higher stabilities against thermal stressing.

致謝

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