

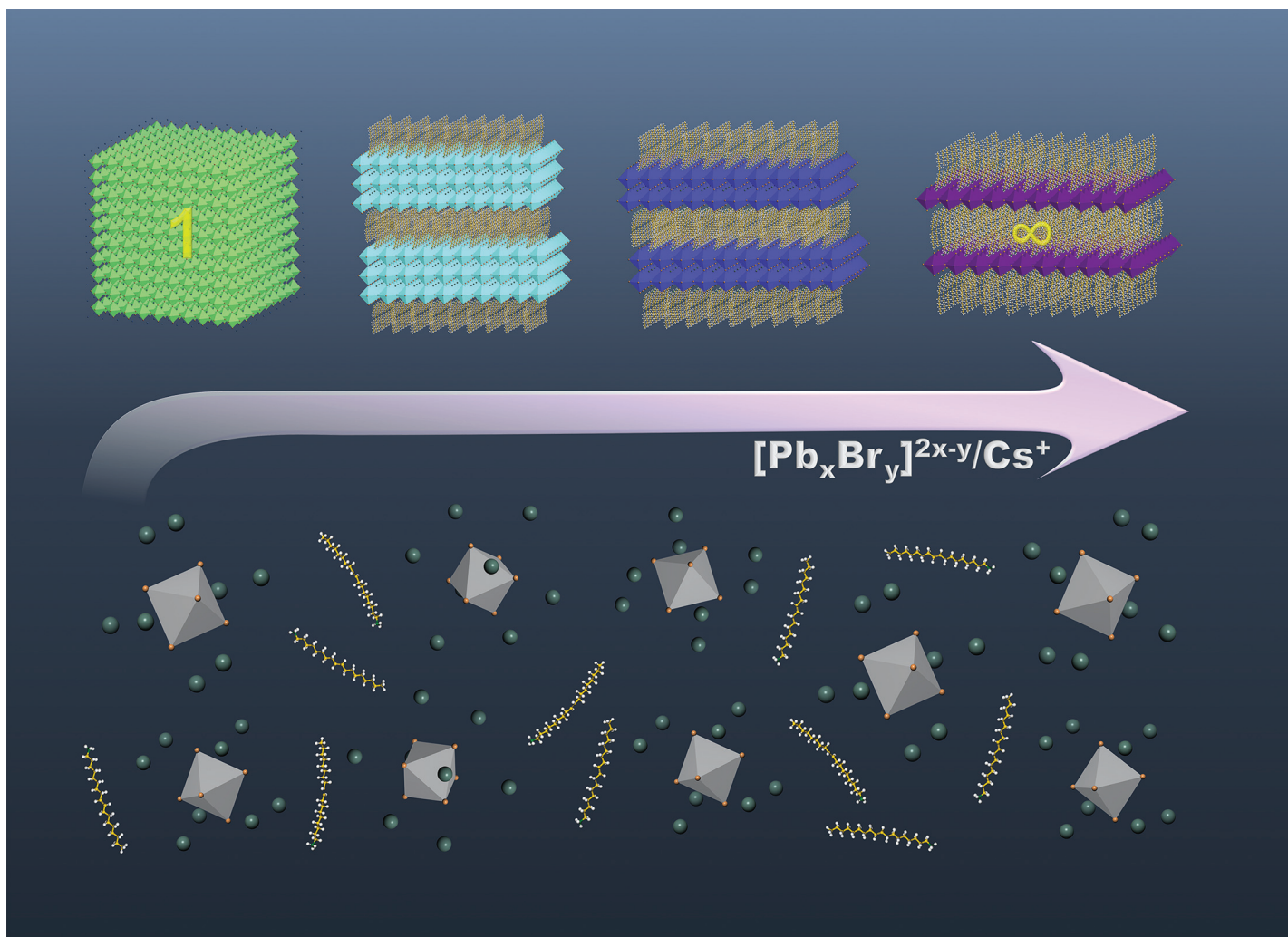
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**Fundamental questions
Elemental answers**



Showcasing research from Professor Di-Yan Wang's laboratory,
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Taipei, Taiwan.

Pioneering nucleation for stable ultraviolet-to-deep-blue
illuminating two-dimensional perovskite nanoplates by using
saturated salt solution

To kinetically control the formation of 2D perovskite nanoplates with specific n values, a saturated PbX_2 ($\text{X} = \text{Br}$ or Cl) solution is used with optimized CsX and PbX_2 concentrations and minimal oleylamine (OLM) to adjust the $[\text{Pb}_x\text{Br}_y]^{2x-y}/\text{Cs}^+$ ratio. This promotes the formation of $[\text{Pb}_x\text{Br}_y]^{2x-y}$ complexes, leading to the selective nucleation of $2\text{D (OLM)}_2\text{Cs}_{n-1}\text{Pb}_n\text{X}_{3n+1}$ nanoplates while suppressing 3D crystal growth. These nanoplates exhibit strong photoluminescence from ultraviolet to deep-blue. Notably, this work is the first to report 2D $(\text{OLM})_2\text{PbCl}_4$ nanoplates ($n = 1$) with ultraviolet emission and $(\text{OLM})_2\text{Cs}_{n-1}\text{Pb}_n\text{Br}_{3n+1}$ nanoplates ($n = 1-3$) showing violet to deep-blue emissions.

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Nanoscale, 2025, **17**, 15204.

As featured in:



See Yi-Chia Chen, Di-Yan Wang
et al., *Nanoscale*, 2025, **17**, 15204.