# Article information:

Non‐artificial Layered Heterostructure as Inch‐size Single Crystal for Shortwave Polarized‐Light Array Detector - Ma - 2023 - Advanced Functional Materials - Wiley Online Library  
<https://libyw.ucas.ac.cn/https/1zsTpcgDJLC57k8nN3cxywfG3Lwpq5LXO1UlfxNtDhjq6ZMxv/doi/10.1002/adfm.202210235>

# Article summary:

1. A non-artificial layered heterostructure has been engineered into a single-phase crystal, (PbBr2)2(AMTP)2PbBr4 (1), which serves as a polarization-sensitive candidate.

2. This single-crystal has an interleaved architecture of 2D perovskite slabs with the distinct non-perovskite lattice, forming a self-assembled perovskite-intergrowth layered heterostructure.

3. This motif leads to new electronic transitions distributed across two sublattices and affords an inherent in-plane anisotropy ratio of ≈1.6, beyond some known inorganic materials.

# Article rating:

May be slightly imbalanced: The article presents the information in a generally reliable way, but there are minor points of consideration that could be explored further or claims that are not fully backed by appropriate evidence. Some perspectives may also be omitted, and you are encouraged to use the research topics section to explore the topic further.

# Article analysis:

This article is generally reliable and trustworthy due to its use of scientific evidence and research to support its claims. The authors have provided detailed information on the structure of the single crystal and how it was formed, as well as data on its properties such as its in-plane anisotropy ratio. The authors have also provided references for their claims, which adds to the trustworthiness of the article.

The only potential issue with this article is that it does not explore any counterarguments or alternative explanations for the findings presented. While this is not necessarily a problem, it would be beneficial if the authors had considered other possible explanations for their results or discussed any potential limitations of their study. Additionally, there is no mention of any potential risks associated with this material or its use in optoelectronic devices, which should be noted in order to provide a more comprehensive overview of the topic.

# Topics for further research:

* Optoelectronic device risks
* Alternative explanations for single crystal formation
* Limitations of single crystal research
* In-plane anisotropy ratio applications
* Single crystal structure properties
* Single crystal optoelectronic device design

# Report location:

<https://www.fullpicture.app/item/f467f4a8170106f87baaff51b33ac346>