

Technical Data Sheet

Perovskite ABX3 Powders

Version 4.0
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Introduction and product highlights

Perovskite ABX3 materials have attracted considerable interest for optoelectronic applications due to high light absorption coefficients, long-range balanced electron and hole transport, long carrier diffusion lengths ($> 4 \mu\text{m}$), remarkably low trap densities ($< 10^{12} \text{ cm}^{-3}$) and facile preparation techniques. Perovskite ABX3 Powders from Quantum Solutions offers following advantages:

1. Diverse perovskite materials options available with bandgap in the range between 1.40 – 2.21 eV
2. High crystallinity and purity, controlled stoichiometry of perovskite powders due to single crystal preparation approach for efficient optoelectronic devices

Application fields

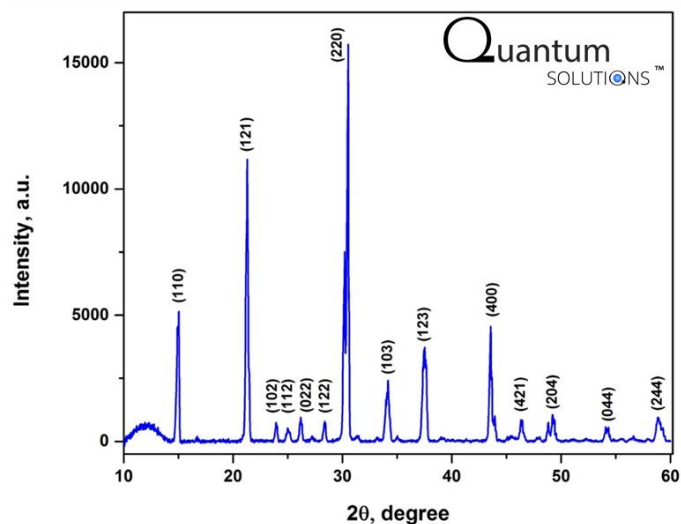
Perovskite ABX3 powders have been widely investigated for solar cells, lasing, light-emitting diodes, photodetectors. These powders can be used in various research projects where the high purity ABX3 phase is required. Additionally, all inorganic perovskite CsPbBr₃ powder can be used to make thin films by vacuum deposition techniques (PLD etc.) for photodetector or solar cell devices.

Specification of Perovskite ABX₃ Powders

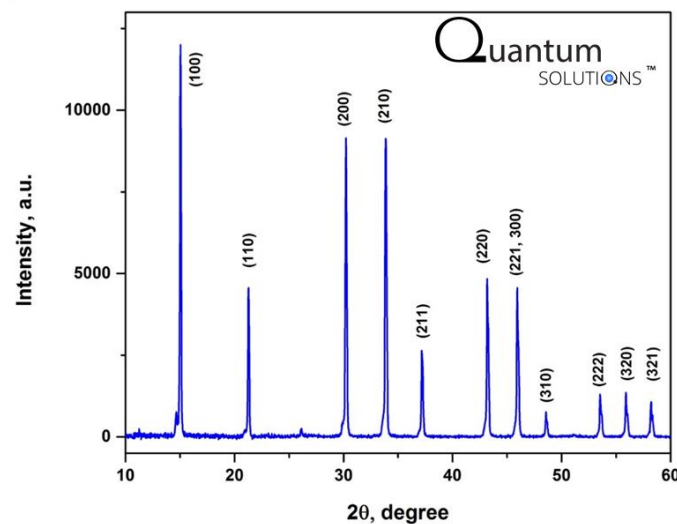
Catalog Number	Type	Appearance	Band gap	Purity	Crystal shape	Crystal size	Shelf life
CsPbBr₃ powder	Powder	Orange powder	2.21 eV	> 99 %	-	-	1 year
MAPbBr₃ powder	Powder	Orange powder	2.18 eV	> 99 %	-	-	1 year
FAPbBr₃ powder	Powder	Orange powder	2.15 eV	> 99 %	-	-	1 year
MAPbI₃ powder	Powder	Black powder	1.51 eV	> 99 %	-	-	3 months
FAPbI₃ powder	Powder	Yellow powder	1.40 eV	> 99 %	-	-	3 months

XRD patterns

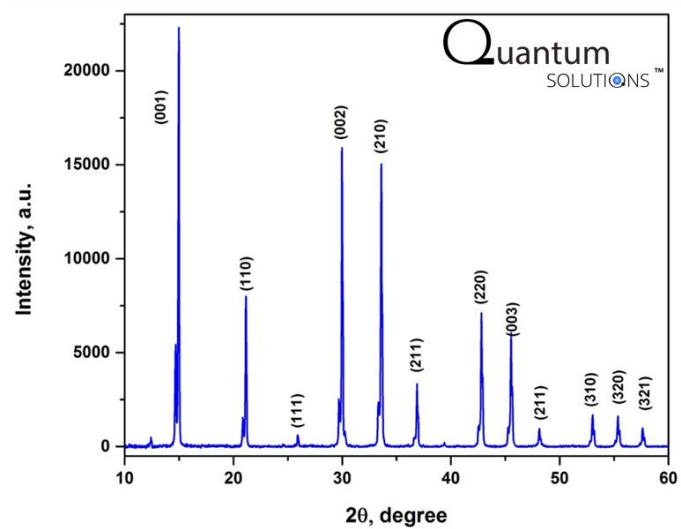
CsPbBr₃



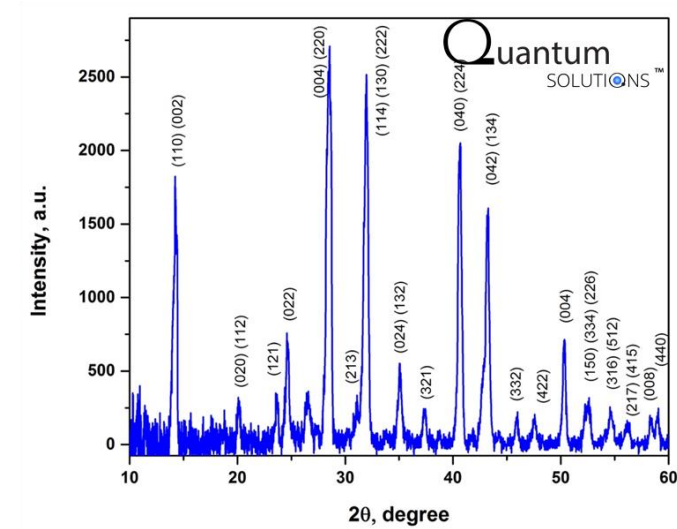
MAPbBr₃



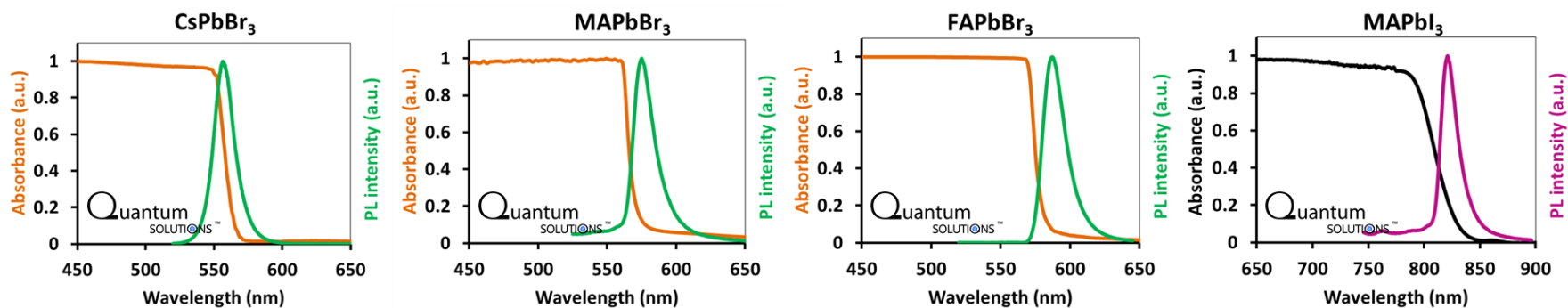
FAPbBr₃



MAPbI₃



Absorption and emission profiles



Notes for handling

For laboratory and research use only. Not for drug, food, household or other uses. Shelf Life for CsPbBr₃, MAPbBr₃ and FAPbBr₃ - 12 months. Shelf Life for MAPbI₃ and FAPbI₃ - 3 months. Shipping and storing temperature 4-25 °C. Store in DARK and DRY place, in original packaging or in airtight packaging in a glovebox under inert atmosphere. Avoid a long term contact with air. Repackage in a glovebox only.

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