Technical Data Sheet

Perovskite ABX3 Powders

Version 4.1
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Introduction and product highlights

Perovskite ABX3 materials have attracted considerable interest in the field of optoelectronic applications because of their high light absorption coefficients, long-range balanced electron and hole transport, long carrier diffusion lengths (> 4 μm), remarkably low trap densities (<10^{12} cm^{-3}) and facile preparation techniques. Perovskite ABX3 Powders from Quantum Solutions have these beneficial characteristics:

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

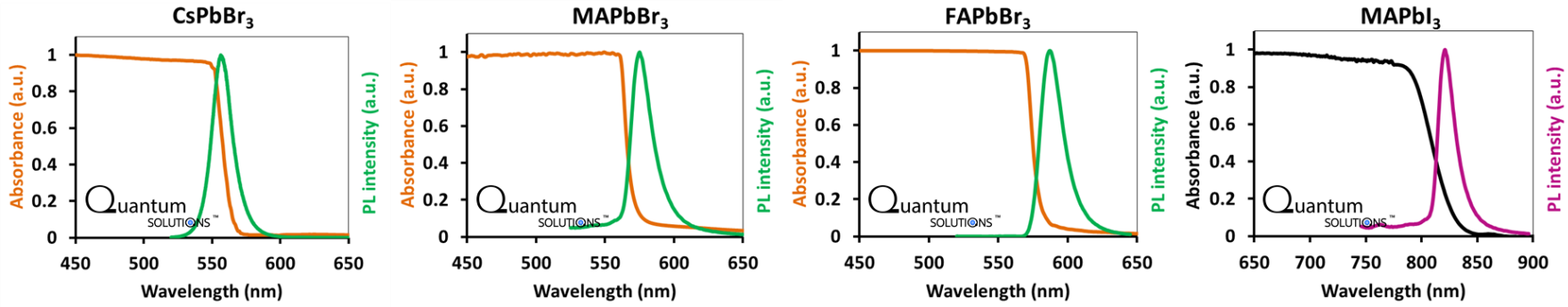
Application fields

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

Specification of Perovskite ABX3 Powders

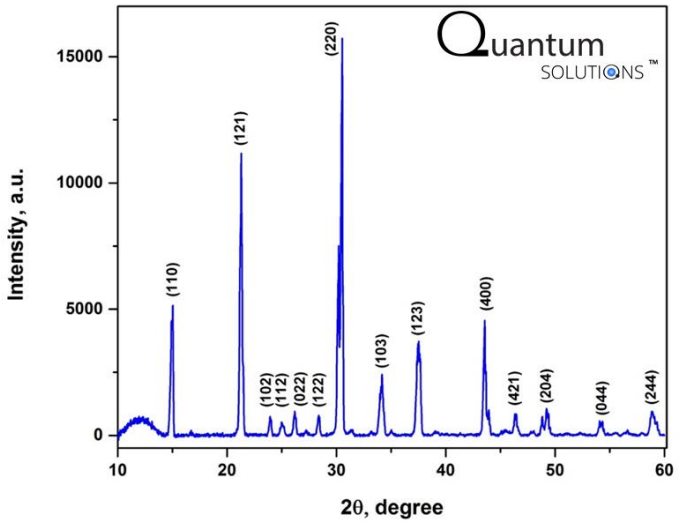
Catalogue Number	Type	Appearance	Band gap	Purity	Shelf life
CsPbBr3 powder	Powder	Orange powder	2.21 eV	> 99 %	1 year
MAPbBr3 powder	Powder	Orange powder	2.18 eV	> 99 %	1 year
FAPbBr3 powder	Powder	Orange powder	2.15 eV	> 99 %	1 year
MAPbI3 powder	Powder	Black powder	1.51 eV	> 99 %	3 months
FAPbI3 powder	Powder	Powder from yellow to brown color	1.40 eV	> 99 %	3 months

Absorption and emission profiles

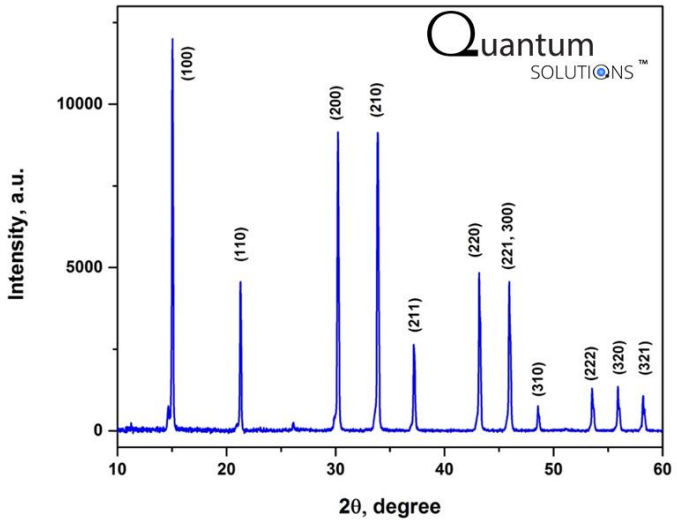


XRD patterns

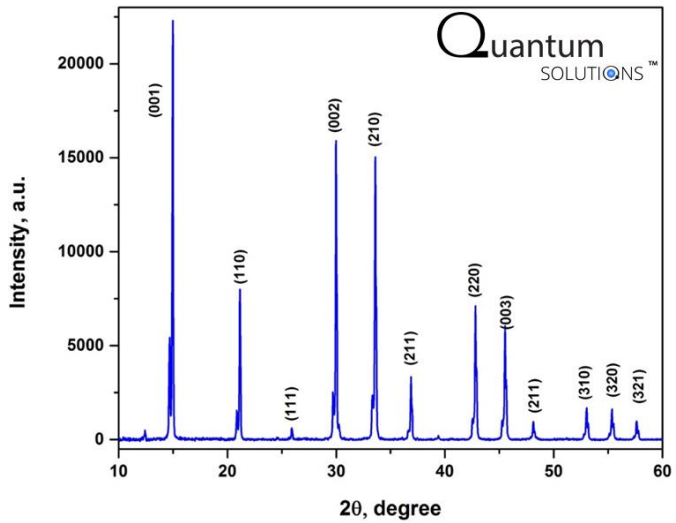
CsPbBr3



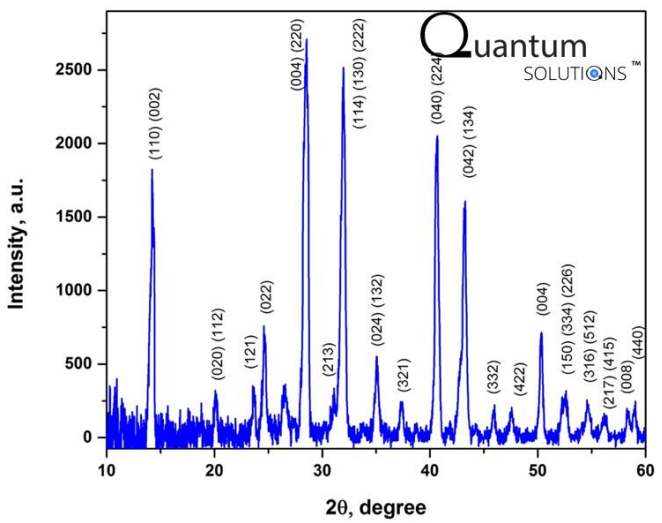
MAPbBr3



FAPbBr3



MAPbI3



Notes for handling

For laboratory and research use only. Not for drugs, 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 conditions, either in original packaging or in airtight packaging in a glovebox in an inert atmosphere. Avoid long term contact with air. Repackage in a glovebox only.

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