

Synthesis of R/G/B colored MAPbX₃ Perovskite Nanocrystals for Fabrication Thin-film by
using Solvent Control

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Perovskite nanocrystals have being recognize as very attractive materials to apply optoelectronic devices due to their unique properties such as high color purity caused by narrow full width at half maximum, easy control of band-gap by various combination of components and so on. Moreover, as using nanocrystals, it is fixed up that some properties like long diffusion length and small binding energy that were not appropriate when devices need light. Among the synthesis method of perovskite nanocrystals, Hybrid perovskite nanocrystals can gain so easily by using inverse emulsion method. However, there is one problem that luminescence is significantly reduced or eliminated during thin-film formation even if it has very strong luminescence when in solution. To solve it, we experimented by controlling volume of solvents. As the result, we were able to produce a perovskite nanocrystal solution capable for a luminescence thin-film. When the conditions to fabricate perovskite nanocrystal thin-film optimized, we could expect to apply at various optoelectronic devices without additional additive in perovskite nanocrystal solution.