Communication

Investigation of Cation Exchange Behaviors of $FA_xMA_{1-x}PbI_3$ Films Using Dynamic Spin-Coating

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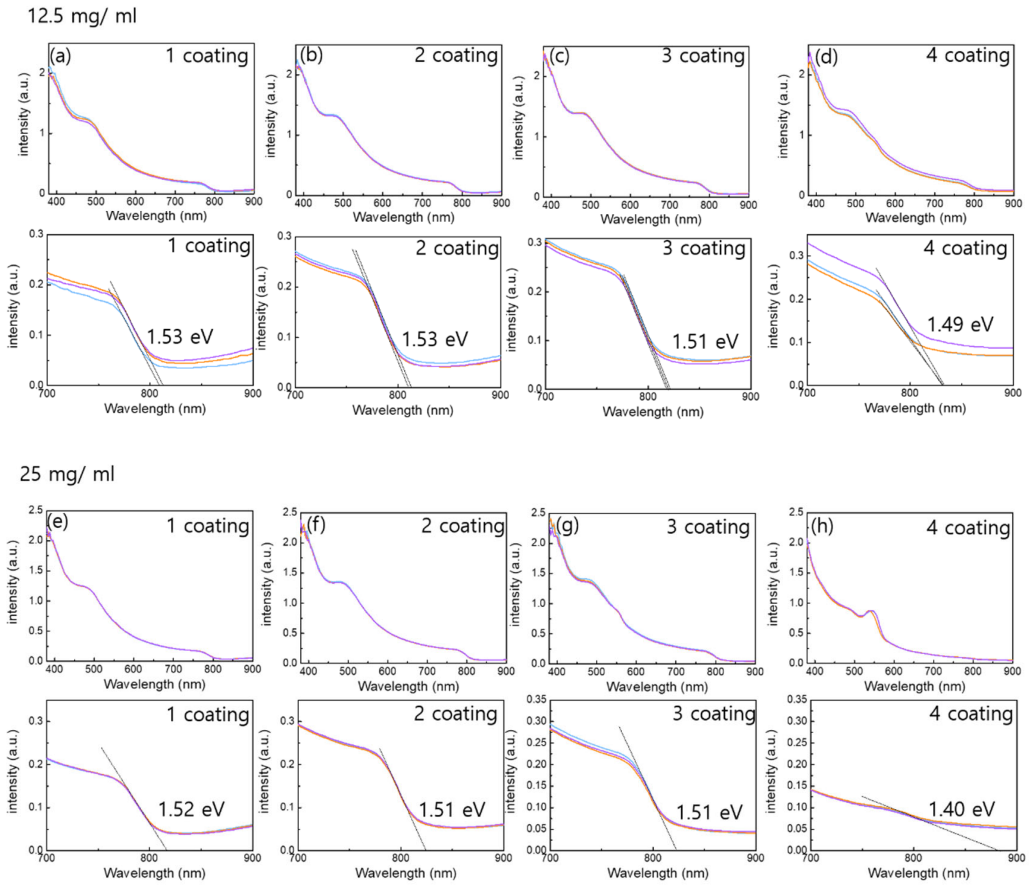

Figure S1. The calculation of bandgap of $FAMAPbI_3$ of FAI=12.5 with (**a**) 1 coating, (**b**) 2 coating, (**c**) 3 coating, (**d**) 4 coating and 25 mg/ml with (**e**) 1 coating, (**f**) 2 coating, (**g**) 3 coating, (**h**) 4 coating .

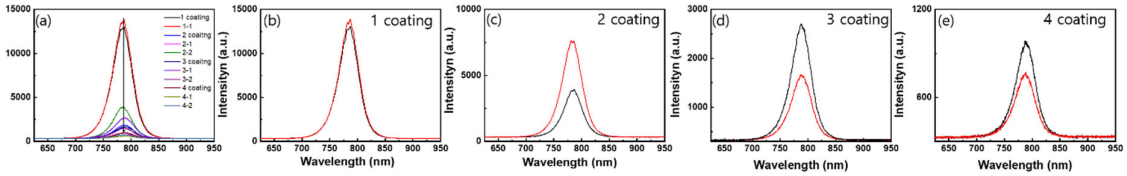

Figure S2. PL spectra of $FAMAPbI_3$ film of FAI=12.5mg/ml with different cycle of coatings (**a**) and PL spectra of $FAMAPbI_3$ film of FAI=12.5mg/ml with (**b**) 1 coating, (**c**) 2 coating, (**d**) 3 coating, (**e**) 4 coating.