

第 49回フロンティア材料研究所講演会

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8月4日(金) 14時~16時 R3棟1階会議室にて

演題: **Solid State Chemistry Investigations of Halide Perovskites and Double Perovskites**

The AMX_3 ($A = Cs, Rb, CH_3NH_3$; $M = Pb, Sn, Ge$; $X = I, Br, Cl$) halide perovskites are a versatile and promising class of materials. Their electrical and optical properties are comparable to conventional compound semiconductors, which makes them suitable for many applications, including solution processed solar cells. Unlike conventional semiconductors the electronic structure, and optoelectronic properties, of halide perovskites can be tuned through distortions of the crystal structure. In the first part of my talk I will discuss our studies of $Cs_{1-x}Rb_xPbBr_3$ and $Cs_{1-x}Rb_xPbCl_3$ solid solutions. In the second part of my talk I will discuss our efforts to synthesize and characterize new halide *double* perovskites, $Cs_2BB'X_6$ ($B = Ag, Na$; $B' = Bi, Sb, In$; $X = Cl, Br$), with tunable band gaps, a strategy we are pursuing toward the ultimate goals of removing lead and improving moisture tolerance of these materials.

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