Electronic Supplementary Information

Figure 1: The unique component of (a) [C2mim][Br], (b) [C2mpyr][Br] and (c) [C3mpyr][I] shown with 50% probability displacement ellipsoids. The numbering of the hydrogen atoms of the disordered cations are omitted for clarity.
Figure 2: The unique component of (a) [C2mim][Br\textsubscript{3}], (b) [C2mpyr][Br\textsubscript{3}] and (c) [C3mpyr][I\textsubscript{3}] shown with 50\% probability displacement ellipsoids and H atoms as spheres of arbitrary size. The second part of the [C3mpyr][I\textsubscript{3}] ring is shown with symmetry equivalent atoms [symmetry code: x, ½-y, z] to complete the ring and both atoms of the disordered C4/C4\' are shown. Numbering of the hydrogen atoms of the disordered cation is omitted for clarity.