## Supporting Information

# Using alcohols as alkylation reagents for 4-cyanopyridinium and $\mathrm{N}, \mathrm{N}^{\prime}$-dialkyl-4,4'-bipyridinium and their one-dimensional iodoplumbates 

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(c)

or


Complexes 1-8 $\underset{\mathrm{Pbl}_{2}}{\stackrel{(\mathrm{~d})}{\rightleftarrows}}$

or


R = Ethyl, Propyl, Isopropyl, Benzyl for 4-cypy
R = Ethyl, Propyl, Isopropyl for 4,4'-bipy

Scheme S1 The possible mechanisms on generating complexes $1-8$ with $\mathrm{C}^{+} / \mathrm{C}^{2+}$ and $\mathrm{V}^{2+}$ cations.


Fig. S1 3D packing diagrams of 2 (a) and 4 (b) looking down along $a$-axis. Atom color codes: C, gray; N, cyan; Pb , blue; I, pink (the same hereinafter). H atoms are omitted for clarity.


Fig. S2 3D packing diagram of 5 looking down along $a$-axis. H atoms are omitted for clarity.


Fig. S3 3D packing diagram of 7 looking down along $a$-axis. H atoms are omitted for clarity.


Fig. S4 Frequency dependence of permittivity (imaginary part) of $\mathbf{1}-\mathbf{8}$ at 298 K.

