

Descriptions of Additional Supplementary Files

Supplementary Data 1: The optimized structures of different complexes from density functional theory calculations.

Supplementary Data 2: Final atomic configurations after the molecular dynamic simulations for the ND, NP and NDPP electrolyte systems.

Supplementary Video 1: Flame test of the ND electrolyte.

Supplementary Video 2: Flame test of the NP electrolyte.

Supplementary Video 3: Flame test of the NDP electrolyte.

Supplementary Video 4: Flame test of the NDPP electrolyte.