

Supporting information

First-principles study on the mechanical and electronic properties of energetic molecular perovskites $AM(ClO_4)_3$ ($A = C_6H_{14}N_2^{2+}, C_4H_{12}N_2^{2+}, C_6H_{14}N_2O^{2+}; M = Na^+, K^+$)

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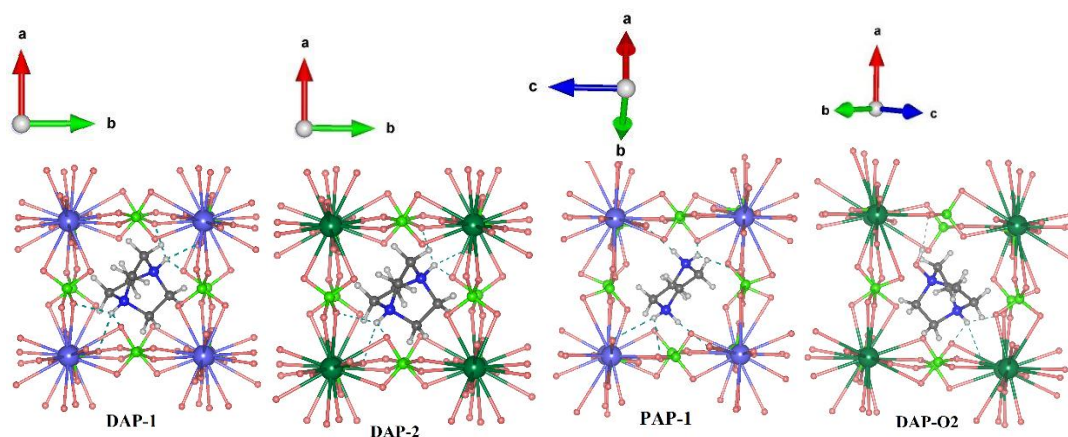


Figure S1. Cage structures of $AM(ClO_4)_3$. H atom in light grey, C atom in dark grey, N atom in blue, O atom in pink, Cl atom in green, Na atom in purple, K atom in dark green. Hydrogen bonds are represented by dashed lines.

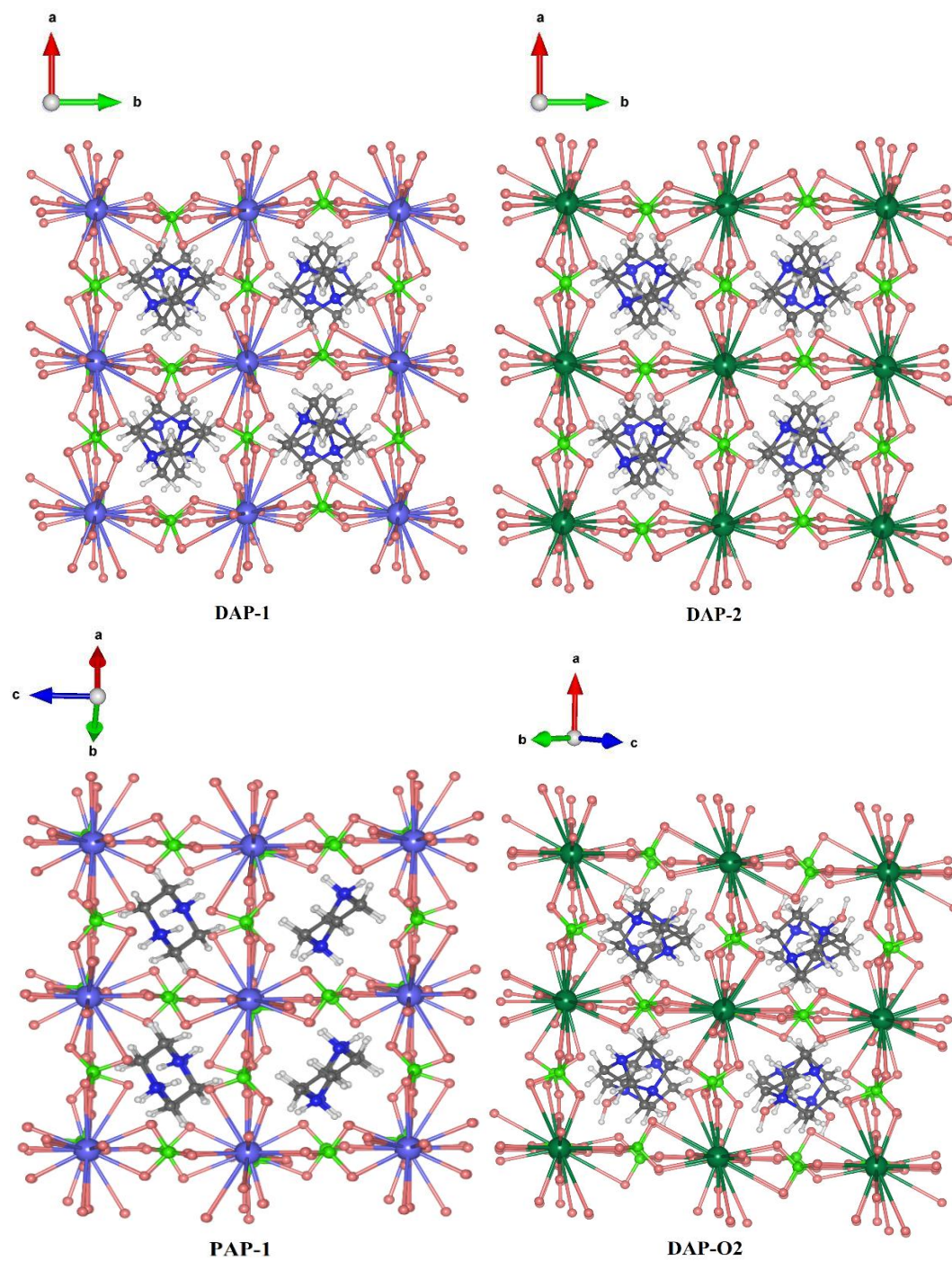


Figure S2. Packing structures of $AM(ClO_4)_3$. H atom in light grey, C atom in dark gray, N atom in blue, O atom in pink, Cl atom in green, Na atom in purple, K atom in dark green.

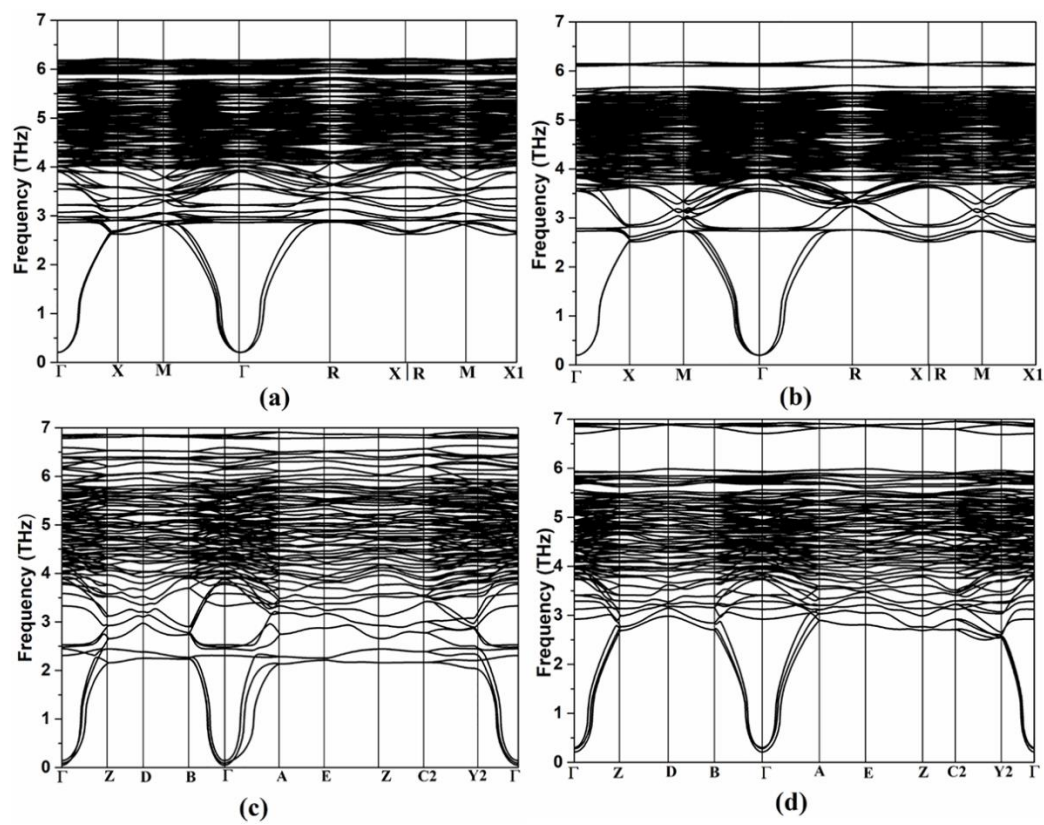


Figure S3. Phonon dispersion curves of (a) DAP-1, (b) DAP-2, (c) PAP-1 and (d) DAP-O2.