Supporting Information

Super strain enhanced thermal conductivity of monolayer aluminum/gallium nitride ($Al_xGa_{1-x}N$) alloys

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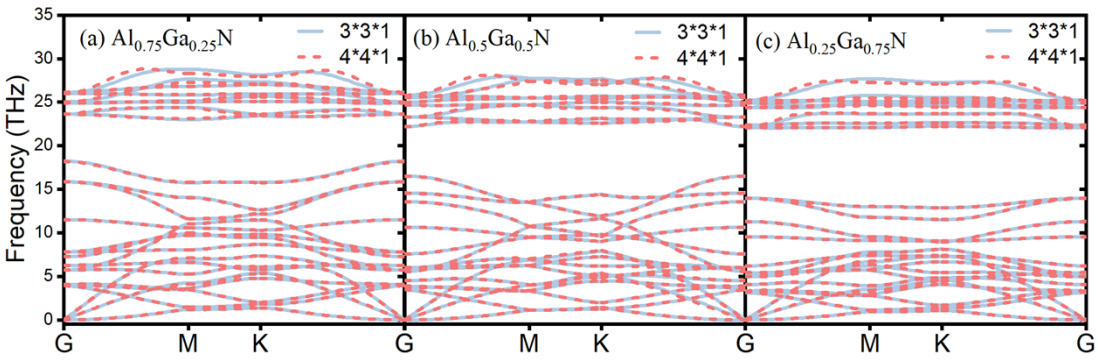

Fig. S1. Phonon dispersion convergence tests for 3×3×1 and 4×4×1 expanded supercells of(a) $Al_{0.75}Ga_{0.25}N$, (b) $Al_{0.5}Ga_{0.5}N$, and (c) $Al_{0.25}Ga_{0.75}N$.

As shown in Fig. S1, we calculated the phonon dispersion based on 3×3×1 and 4×4×1 supercells. The difference between the results is very small and is sufficient to ensure convergence under the 3×3×1 supercell strategy.

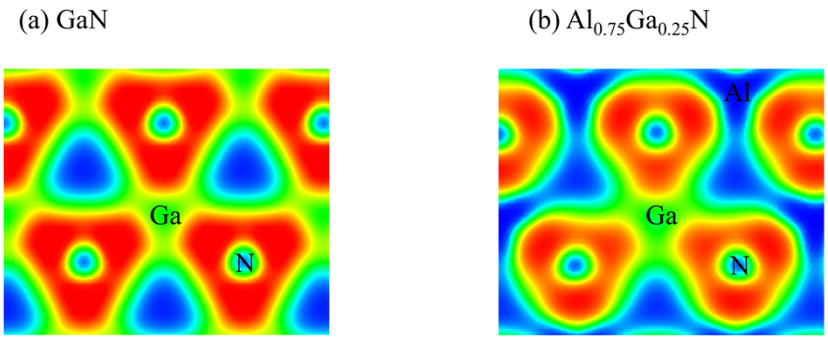

Fig. S2. The electron localization function (ELF) for (a) GaN and (b) $Al_{0.75}Ga_{0.25}N$.