Supporting information
Fast GGAG:Ce(,Mg) single crystal scintillator: LDFZM growth, characterization and electronic band structure calculation

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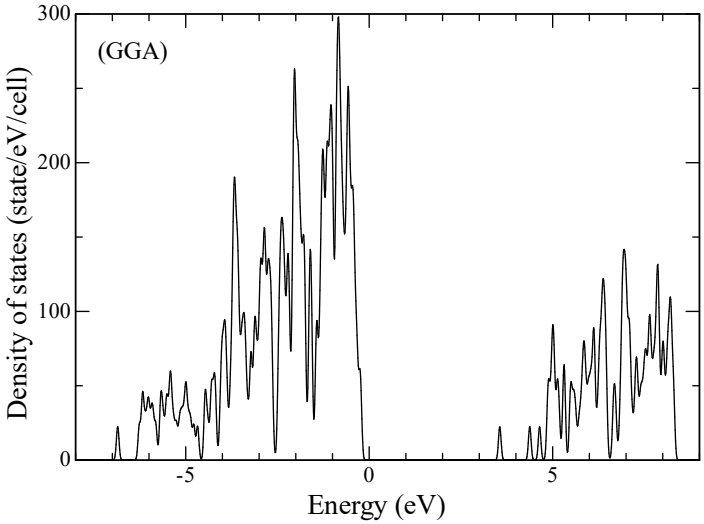
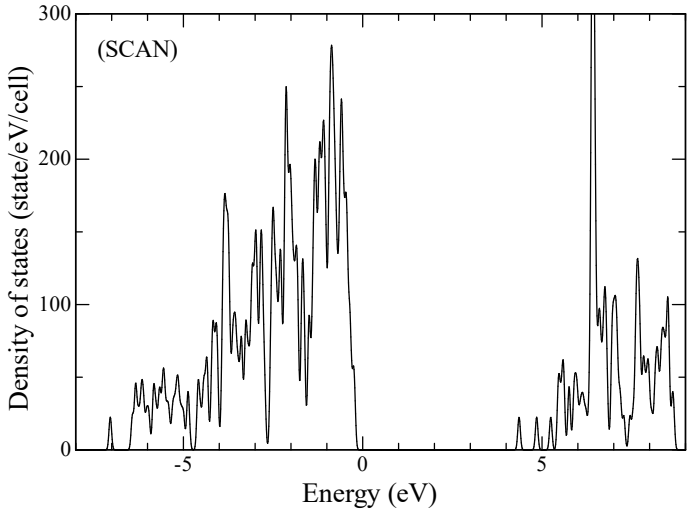

(GGA)
Density of states (state/eV/cell)
300
200
100
0
-5
0
5
Energy (eV)


(SCAN)
Density of states (state/eV/cell)
300
200
100
0
-5
0
5
Energy (eV)

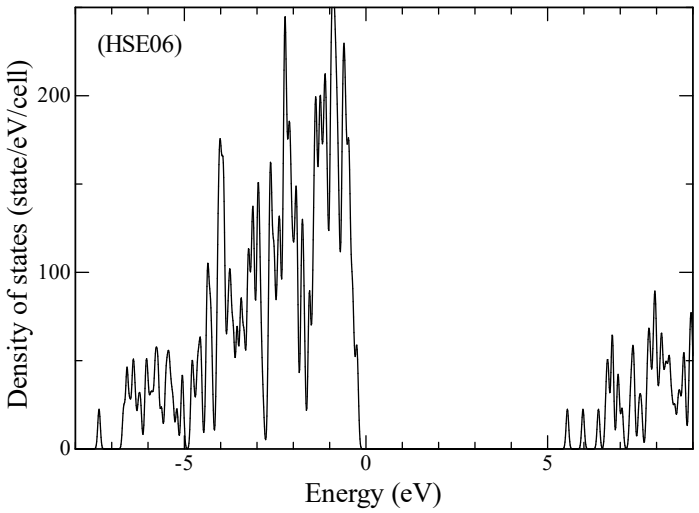
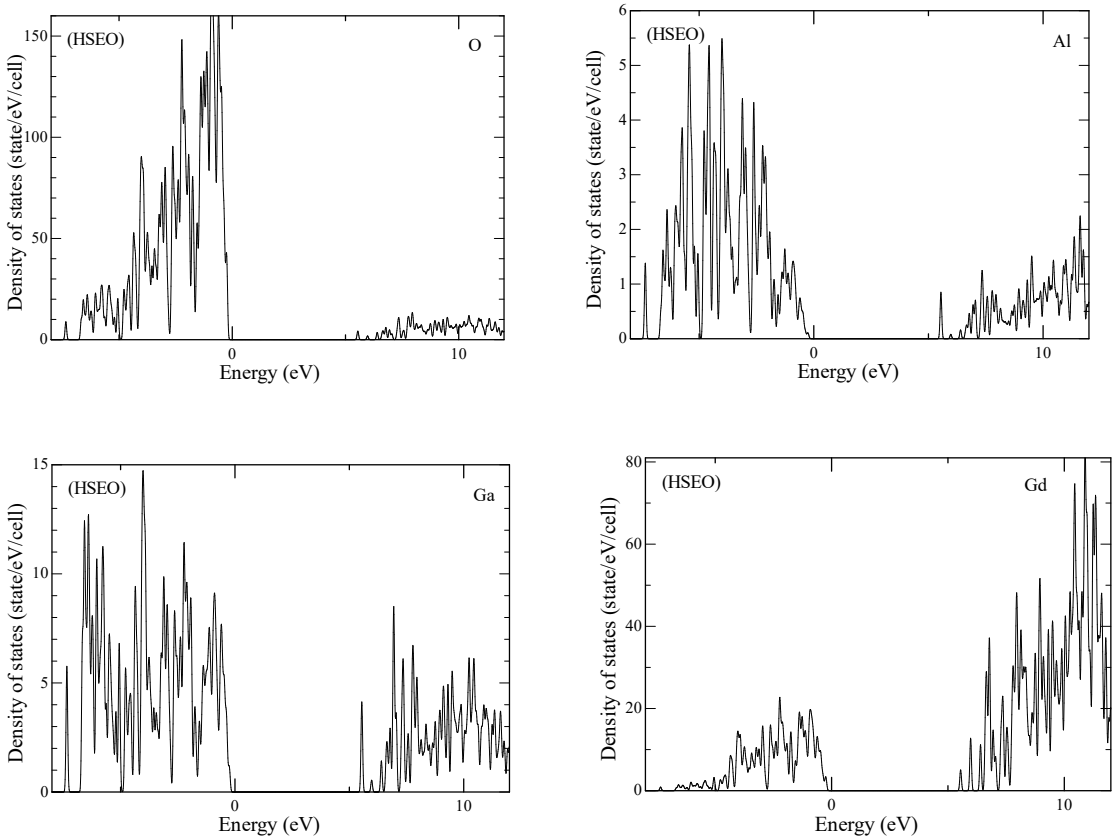

(HSE06)
Density of states (state/eV/cell)
200
100
0
-5
0
5
Energy (eV)

Figure S1. GGA, SCAN and HSE0 calculated total electronic density of states of $Gd_3Al_{2.3}Ga_{2.7}O_{12}$



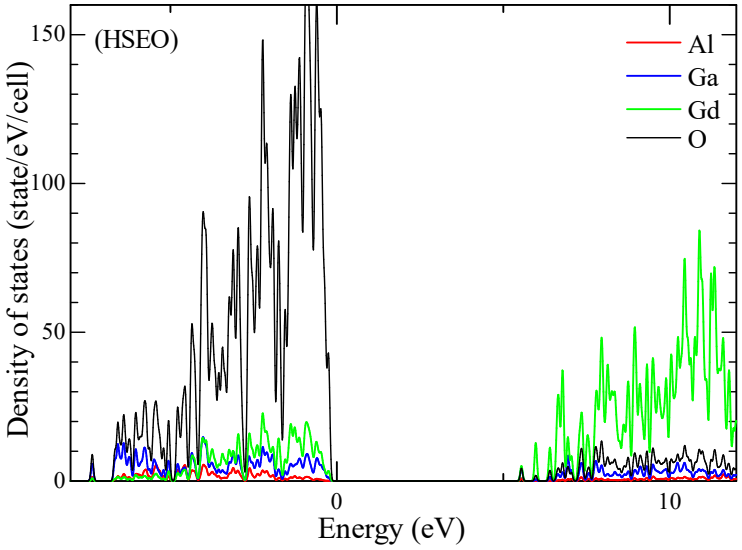


Figure S2. HSE0 calculated partial density of states of $Gd_3Al_{2.3}Ga_{2.7}O_{12}$

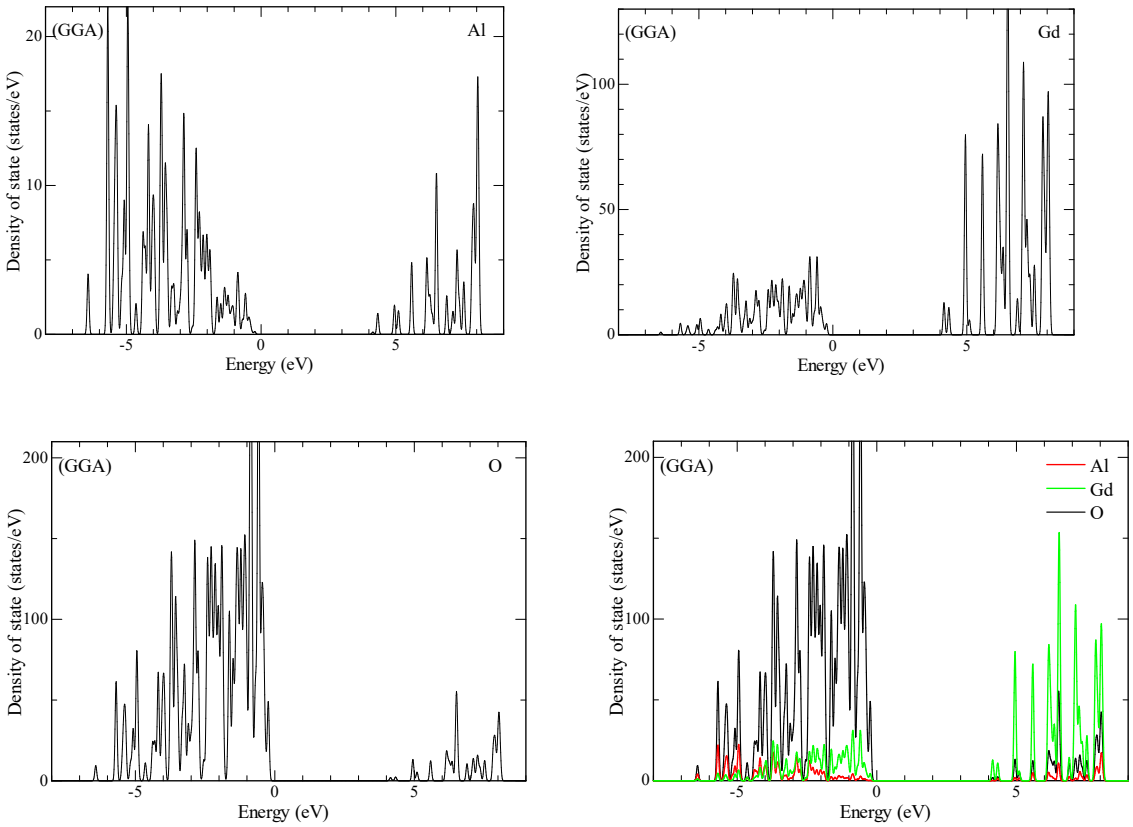


Figure S3. GGA calculated partial density of states of $Gd_3Al_5O_{12}$

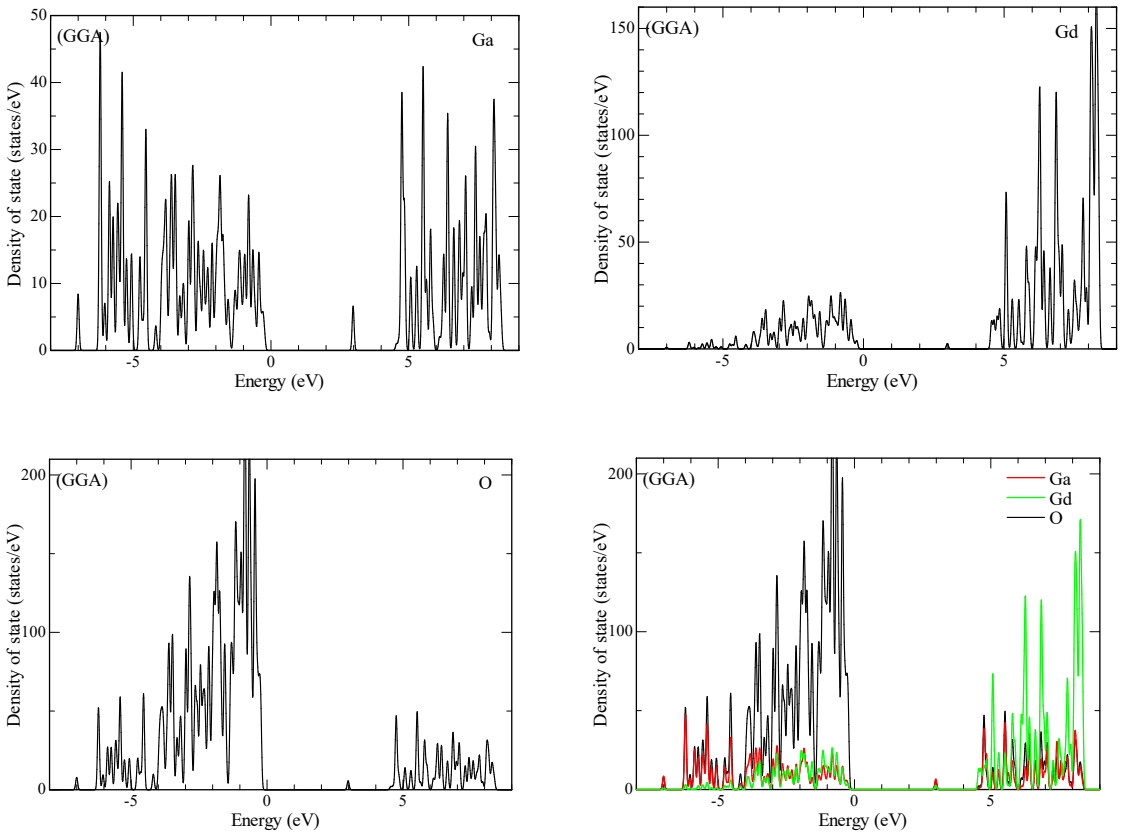


Figure S4. GGA calculated partial density of states of $Gd_3Ga_5O_{12}$