

Figure 1: Structural properties of  $Mg_{G-3}TMN_{G-2}$  (TM=Ti, Zr, Hf, Nb) materials.

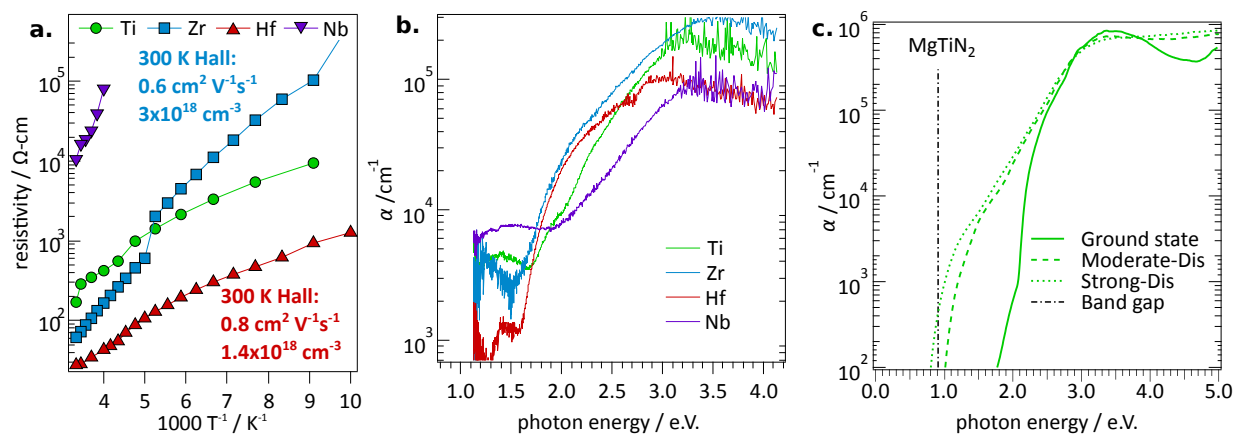


Figure 2: Optoelectronic properties of  $Mg_{G-3+x}TM_{1-x}N_{G-2}$  materials.

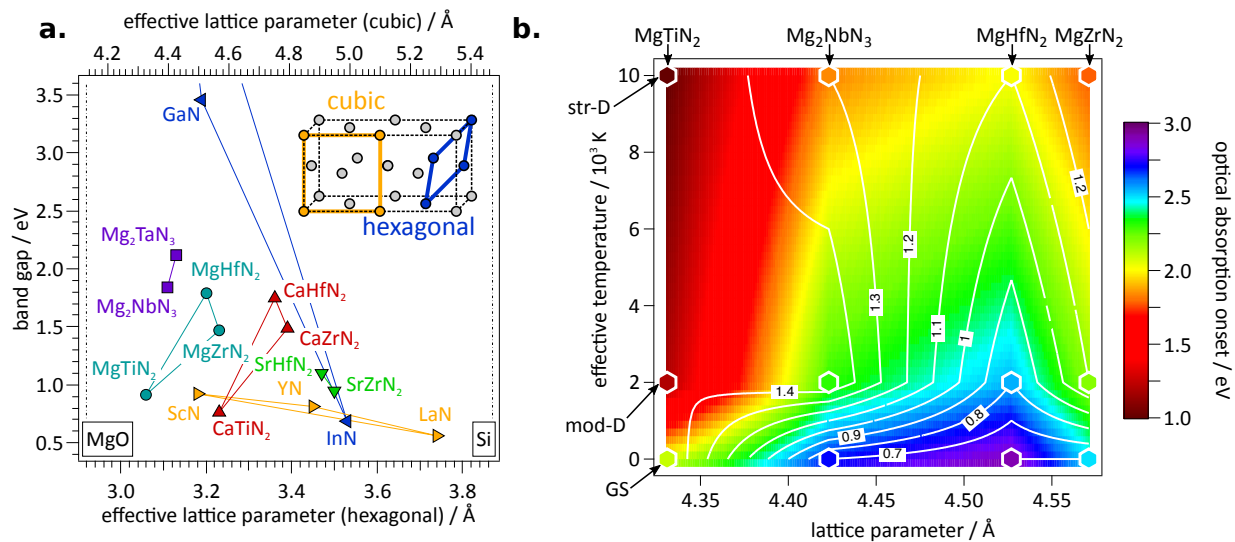


Figure 3: Tunable properties of  $Mg_{G-3}TMN_{G-2}$  semiconductors. (