

## Assignment #2: Semiconductors - Solutions

- 1) Work through the lecture notes: Thermodynamics & Phase diagrams
- 2) Which symmetry element is found on  $\langle 110 \rangle$  directions in fcc materials?  
2-fold symmetry axes (diads)
- 3) What thermodynamic quantity should we use to predict whether or not a reaction will occur?  
Free energy

- 4) Look at the phase diagram of GaN. If you have 40% Ga and 60% N at 900K and 1atm pressure, which phases do you expect?

GaN (solid) plus N-gasous

