

國立虎尾科技大學 109 學年度第一學期博士班資格考試題

系別：動力機械工程系機械與機電工程博士班

第 1 頁 共 2 頁

科目：工程材料

注意事項：

- (1) 本試題共有 5 題，每題 20 分，合計一百分。
- (2) 請依序作答於答案卷上並註明題號，若未註明選答題號及超過規定題數時，謹採計作答順序較前之題目計分。
- (3) 可以使用工程計算機。
- (4) **close book.**

1. Please explain and compare the ferrous metal and nonferrous metal?
2. Explain what transformations will occur during the heating of pure iron from room temperature to the melting point.

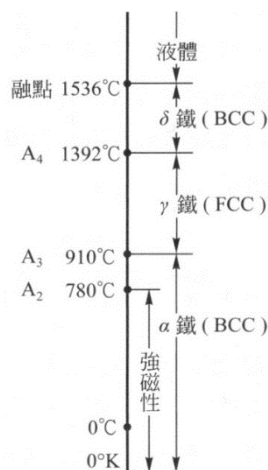


圖 9.2 純鐵之狀態圖

純鐵狀態圖

3. Please explain which alloying elements should be added to cast iron to have corrosion resistance?
4. Please compare and explain thermoplastic plastics and thermosetting plastics?

5. Sn has the cubic crystal structure, its lattice constant ratio a is 0.583 nm; b is 0.318 nm, if the atomic radius of Sn is 0.151 nm; density is 7.3 g / cm^3 ; atomic weight is 118.69 g / mol, try to calculate Atomic Packing Factor (APF)?

