Name:

Homework for Lecture 19, 20

Consider the cellular precipitation (i.e., eutectoid transformation) of α-Fe and Fe_3C (cementite) from super-saturated γ-Fe (austenite phase), for which we assume the phase transformation (i.e., the growth of interface) occurs by diffusion through either α or γ. It was observed that the growth rate of the interface is 5 Å/sec when the inter-lamellar spacing (i.e., the wavelength, λ) is λ=1000 Å, and the growth rate becomes 6 Å/sec when the inter-lamellar spacing is λ=4000 Å. What is the maximum of the growth rate and at what inter-lamellar spacing?