Massachusetts Institute of Technology
3.155J / 6.152J Micro/Nano Processing Technology
Fall Term 2005

Problem Set 1: IC Process

Out: September 7, 2005   **Due: September 14, 2005**

Read Chapters 1 and 2 of Plummer (handed out in class). The discussion of density of states, Fermi level and Shockley-Read-Hall recombination (pp.22-33) can be skimmed. All the questions are from Plummer, Chapters 1 and 2.

1. Question 1.4
2. Question 1.10 (also, compare the calculated capacitance to the gate capacitance of a MOSFET of the same area with a SiO_2 thickness of 2.5 nm.)
3. Question 2.3

Warning: This problem set will take substantial time if you have not had 6.012 or it's equivalent. Please budget your time appropriately (i.e. get started early)