

Homework 1

MSAE-E4201

Spring 2017

Due January 23 before 5.30 pm in course mailbox

Problem 1. Find the number of lattice points in a hollow sphere having 5nm inner radius (r) and 6nm outer radius (R). Lattice constant is 2\AA . Assume a simple cubic lattice. List all necessary assumptions you made during the computation. You can use computer programs to calculate the result. If so, a good description of the algorithm is necessary.

Problem 2. The internal energy of particular system comprising one mole of materials given by $U=AP^2V$ where $A>0$. Here A is a constant with dimensions of $P^{(-1)}$. Find the equations of possible adiabats in the P - V plane.