

Homework no. 7

Modern Techniques in Biophysics

Topic: Transmission Electron Microscopy

Due date: April 10, 2015

Problem 1: TEM components

Draw a simplified schematic diagram of a transmission electron microscope (TEM) and explain briefly how each component works.

Problem 2: TEM resolution

Explain why a transmission electron microscope (TEM) has a much finer resolution than a light microscope.

Problem 3: electromagnetic lens imperfections

The electron beams in TEM are controlled by electromagnetic lenses. What are the three common imperfections/aberrations in electromagnetic lenses that directly affect image formation in TEM?