

2008-2009 PhD Qualifying Examination

Professor Yoshio Nishi

1. Please describe mobility of electrons in semiconductor in which the size of semiconductor is enough large as compared to the mean free path of electrons.
2. Given that electrons can be scattered by many different scatterers such as ionized impurity atoms, lattice vibrations, etc, how can you describe overall mobility of electrons? Please derive the formula.
3. What conditions would make the formula inaccurate?