

Silvaco TCAD Homework

ECE 543

Spring 2005

Due Monday, April 18, 2005

1. Use Ssuprem3 or Athena to solve Jaeger Problem 3.21 and then compare your result with the results from the analytical solution from problem 3.8. Make comments, observations, and discuss any differences. Include your input file, output file and plots.
2. Use Ssuprem3 or Athena to solve Jaeger Problem 3.23 and then compare your result with the results from the analytical solution from problem 3.6. Make comments, observations, and discuss any differences. Include your input file, output file and plots.
3. Use Ssuprem3 or Athena to solve Jaeger Problem 4.20 and then compare your result with Example 4.3 (surface concentration and junction depth only). Make comments, observations, and discuss any differences. Include your input file and output file. Assume a (100) wafer.
4. Use Ssuprem3 or Athena to solve Jaeger Problem 4.21 and then compare your result with Figure 4.9. Make comments, observations, and discuss any differences. Include your input file, output file and plots. Assume a (100) wafer.
5. Redo Example 5.3 in Silvaco and compare your results. Make comments, observations, and discuss any differences.

For all problems, state any assumptions that you have to make in your simulations (wafer type, orientation, etc.)