Semiconductor Devices

ECE-3130

Curiosity, Connection, and Creating Value

Exercise # 1

Due Date: November 17, 2017

What new materials are being investigated to replace Silicon which has dominated the semiconductor industry for the past several decades?

1. You are to investigate the literature and e-sources for possible semiconducting materials that are being investigated/researched as a future replacement for Silicon. Must sight these resources.
2. What are the characteristics of the new element (s) which makes them attractive as a possible replacement for Silicon?
3. What are their electronics and material characteristics which make them superior to Silicon?
4. How does the cost of the new material compare to Silicon?
5. What are the advantages and disadvantages of the new material vs. that of Silicon?
6. What are the benefits of the new material in moving the semiconductor and Integrated Circuit technology to the next level in the Moore's Law?
7. How does the new material create value for the semiconductor industry, including digital and analog electronics?
8. What other questions would you try to ask and prepare an answer?

Please make sure you include all references in your bibliography.

Choose one of the following two methods to present your findings:

- Create a 5-7 pages of informative Power Point Presentation. Limit it to less than 5-7 minutes of presentation.
- Write a 2-3 pages report. Make sure to include all your sources of information (references/bibliography)