

Exercise 9.1-1

Quick Questions to

9.1 - Optoelectronics - General Concerns

Here are some quick questions

- Name some optoelectronic devices. List their strengths and weaknesses in comparison to competing products / technologies
- Identify and discuss specific properties of some optoelectronic materials.
- Why is the index of refraction an important property of optoelectronic semiconductors? How is it defined and what kind of numbers can you give?
- Compare the operation of a **CMOS** processor and an optoelectronic device in terms of power. What follows for some material properties?
- Why do we still use light bulbs or fluorescent light for general lighting? What are the prime conditions that optoelectronics has to meet in order to impact the lighting market?
- List and briefly discuss the advantages and disadvantages of semiconductor Lasers
- Describe some recombination mechanisms, how they impact optoelectronic devices and what can be done to optimize recombination.
- What are **OLED's**? For what kinds of products are they of prime importance and why?