

Nano LED's and the colour changing surfaces

WebQuest Description: Nano LED's to be used for colour changing surfaces

Grade Level: College / Adult

Curriculum: Technology

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Introduction

Life without the word "NANO" would have been quite complex and unimaginable. Let us have an introduction about what is meant by the word "NANO"? What is meant by Nano? Nano is a prefix meaning "extremely small." When quantifiable, it translates to one-billionth, as in the nanosecond/nanomole; nanosecond". What is Nanotechnology? Nanotechnology is the branch of technology that deals with dimensions and tolerances of less than 100 nanometers, especially the manipulation of individual atoms and molecules. (or) In general terms "Nano-technology mainly consists of the processing of separation, consolidation, and deformation of materials by one atom or one molecule." Nanotechnology deals with dimensions and tolerances of less than 100 nanometers. Nanotechnology is a rapidly expanding field. It made our lives faster, smarter and easier to access any work we do. Without Nanotechnology our daily works would have been harder and complex than they are now.

What is Nano LED's? A light-emitting diode is a semiconductor device that emits visible light when an electric current passes through it. The NanoLED range is a novel and economical light source system that utilizes pulsed laser diode and light-emitting diode(LED) technology to generate short optical pulses over a wide range of repetition rates and wavelengths. Generally, we knew that nano LED's are used in T.V 's and computers to change the colour of the surface.

Colour changing surfaces:- The surfaces which change from one colour to an another are said to be colour changing surfaces. We often see colour changing surfaces such as LED panels, LED street lights, and clothes. The best example for a colour changing surface is a chameleon.

Uses of colour changing surface:-

- 1) Home decoratives
- 2) In cars
- 3) In computer (microchips)
- 4) In traffic signals
- 5) In medicine (to detect some harmful diseases by changing its colours)
- 6) In army (gadgets which detect the moments of enemies)
- 7) for fashion (clothes)

Present scenarios of colour changing surfaces:- The colour changing surfaces made cars, homes, and clothes look much better than they used to be. Many entrepreneurs have started to show interest in the colour changing surfaces. Gradually, many startups have been started on the basis of colour changing surfaces. People prefer colour changing LED lights and colour changing panels in their houses to change their mood. Other than homes they have much demand in medicine and in the army.

Tasks

Industrial and customary benefits These are the basic questions to think about to know the benefits to customers and industry

The major question is why should customers use Nano LED's instead of normal LED? -Comparing to normal LED's , customers have lot of benefits in using Nano LED's such as-High efficiency-More durable-Cost efficient-they provide more decorative options

What are the benefits for the Government? -Increase in income of Government-GDP increases

What is the scope of getting profit if a Nano LED's industry ? -It is a new technology. So, it has a good scope of getting profits.

Process

The process of getting profits is, 1) Find the suppliers of raw materials for manufacturing of a product. 2) The major step is manufacturing of a product. 3) Make a good quality of product to win the trust of a customer . 4) Marketing the product throughout world. 5) Find the trust worthy distributors to reach the product safely to the customer.

Evaluation

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Category and Score					Score

Category and Score					Score
				Total Score	

Conclusion

The daily and constant use of lighting makes it easy for us to take it for granted. We use lights at home, at work, in the car, on airplanes, literally everywhere we go there are lights and they are in continuous use. One of the only times that we step back and consider our dependency on electricity is when there is a power outage and we are forced to see and do by candlelight. The Nano LED range is a novel and economical light source system that utilizes pulsed laser diode and LED technology to generate short optical pulses over a wide range of repetition rates and wavelengths. Now there are several choices of light bulbs available, from incandescent to fluorescent to LED. Surprisingly, incandescents are still among the most popular light bulbs, even with all the new choices available. Modern incandescents haven't come that far from Edison's early efforts--the bulbs still convert less than 10 percent of the energy to light. Why are they still so popular then? They're cheap, they come in a variety of sizes, and they don't require much voltage. Now they are starting to be phased out, however, as countries like the U.S. start creating legislation to push people toward more environmentally friendly and efficient lighting options. You can bet that future light bulbs will have a lower environmental impact.

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