

Homework

[Science](#), [Physics](#)



Quantum Computer and the Qubit Quantum computers act as a computation device that utilizes the phenomena of quantum Mechanical such as superposition and entanglement to perform an operation on data. It differs from digital computers due to transistors. The computation process operates on qubits (quantum bits) that can be in superposition states (Evans, 2005). A qubit is a term shortened for quantum bit. From a traditional computer information storage is in binary form of 1 and 0. Whereas quantum bit can store information in states of 1. 0. Qubit represent atoms, ions and photons, it works with other devices as a processor and computer memory. Also, 3 qubits work on superposition of 8, whereas a couple of qubits can be in any quantum superposition of 4 conditions. Through the research undertaken both theoretically and practically, various areas are expected to yield benefits as it receives numerous supports from national government and military agencies. Expectations are high from the research as when in operation it will be capable to solve certain problems exponentially faster than any current classical computers.

How a Molecular switch works

A molecular switch is a single molecule which can move at a controlled state of two or more. This molecule can shift its state depending on the environment stimuli such as microenvironment, temperature or an electrical current (Feringa, 2001). Such components include. Crown Ether Switches, Photochromic Switches. Through research, a single molecule has been produced. It switches by manipulating the state of switchable molecules. Plans have been put to design computers that utilise this technology to build Nano-electronic processors and other devices.

How a laser diode functions

A laser diode is a component made of positive and negative of a semiconductor diode, forming a p-n junction. It has a region that is active in the laser diode at the intrinsic region and carriers. It also has a lens that focuses laser beam, and a terminal to collect electricity. These semiconductors are incredibly reduced in size as they are designed in small components of semiconducting material, to form a perfect p-n junction. It can be used in most applications such as fibre optic barcode scanners used in stores and supermarkets (Ian, 1998).

Major advantages are in information transmission through fibre optics are those that utilise light amplification of information. They also help in providing gain and thus serve as gain in media sector.

The 8 minute video, 2005.

Yes, technology directed in the video progresses in the right path as stated in the video through watching. There's ease in information accessibility especially on the web through the use of digital media to provide news and other relevant information. Efforts achieved through cloud computing where the World Wide Web and the advanced utilise algorithms to compute. This has eased the access of information despite forcing others out of a job. The technology to come needs everybody to access any information with a touch of a button through smart technology to be embraced.

References

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Feringa, B. L. (2001). Molecular switches. Weinheim: Wiley-VCH.

Ian, G. M(1998). Computing in the 21st Century. Pearson Publisher: New York.