A Summary of The Subject of Nanoelectronics and industrial Electronic Nanolasers (Nano Laser industrial)

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- **Abstract:**

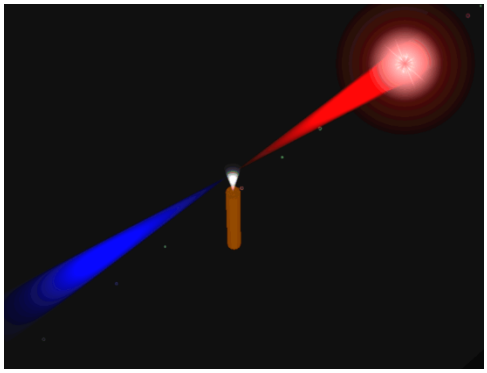
Note : Nano-photonics or nano-optics includes metal components that can transmit and focus light, often refers to ultraviolet, visible and infrared rays, whose wavelength ranges from 300 to 1200 nm. Nano lasers are one of the components of Nano Photonics.

- **Keywords :** Nano Laser industrial , Nano Laser , Nano-optics , Nano-photonics

Introduction •

Nanophotonics or nanooptics is the study of the behavior of light based on the interactions of optical materials science and engineering, at wavelength and wavelength scales, where natural or chemical projects of natural materials nanostructure or nanotechnology at the scale Nanophotonics and synthetics using optics including silicon-based semiconductors (where nanophotonics improve speed and performance) are associated with specific technologies such as optical engineering, electrical engineering, and nanotechnology. (nanolaser) is a laser that on the scale of nano dimensions, these tiny lasers can be quickly modulated and together with the small footprint , make them ideal candidates for optical computing on a chip . The intense optical fields of such a laser also enable the amplification effect in nonlinear optics or scattering (Raman) with increased surface area , and thus pave the way for integrated nanophotonic circuits . or amplification is a process in which the environment transfers part of its energy to the emitted electromagnetic radiation , and as a result, the optical power increases. This is the basic principle of all lasers . Quantitatively, gain is a measure of the ability of a laser medium to increase optical power. Lasers are a beam of electromagnetic radiation. Laser beams can be made from visible light, X-rays, ultraviolet rays, or infrared light.

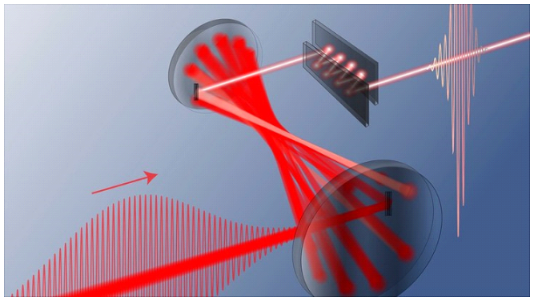
Laser is a type of excited and energetic light that cannot be seen in nature under normal conditions, but it can be created with special technology and equipment. Laser has differences with ordinary light, and these characteristics cause its special abilities and applications. Laser light is brighter and more intense than natural light . Laser light can break the hardest metals and easily pass through a hard object like diamond and create a hole in it. Low power and extremely fine beams of other types of lasers can be used to perform very delicate operations such as surgery on the human eye. Laser light can be controlled with high precision and used as a continuous beam called continuous laser or fast bursts called pulsed laser . Unlike normal light, laser light has completely coordinated energy, which creates a lot of power to do different things in it. The word laser is derived from the first letters of the words that describe its characteristics, which means light amplification by the induced emission of radiation . The difference between laser beam and normal light is in the important properties that exist in this beam.



Investigation and recognition (electronic pulse nano lasers - industrial) Nano Laser pulse idustrial

Pulsed nano lasers are lasers that do not emit light continuously , but in the form of light pulses (blinking). This term is commonly used for switched lasers , which typically emit nanosecond pulses. Depending on the duration of the pulse , the energy of the pulse , the amount of repetition of the pulse and the required wavelength , very different methods are used to generate the pulse and very different types of pulsed nano lasers are used. Most laser material processing is performed by "short pulse length" (or "very fast") pulsed nanolasers. For a given laser pulse energy, the shorter the pulse, the higher the peak laser power. Lasers are a beam of electromagnetic radiation. Laser beams can be made from visible light, X-rays, ultraviolet rays, or infrared light. Laser is a type of excited and energetic light that cannot be seen in nature under normal conditions, but it can be created with special technology and equipment. Laser has differences with ordinary light, and these characteristics cause its special abilities and applications. Laser light is brighter and more intense than natural light . Laser light can break the hardest metals and easily pass through a hard object like diamond and create a hole in it. Low power and extremely fine beams of other types of lasers can be used to perform very delicate operations such as surgery on the human eye. Laser light can be controlled with high precision and used as a continuous beam called continuous laser or fast bursts called pulsed laser . Unlike normal light, laser light has completely coordinated energy, which creates a lot of power to do different things in it. The word laser is derived from the first letters of the words that describe its characteristics, which means light amplification by the induced emission of radiation . The difference between laser beam and normal light is in the important properties that exist in this beam. These characteristics are: coherence, monotony,

directness of high intensity. The mentioned properties cannot be seen in normal light and these properties are used for different tasks.



Electronic pulsed nano lasers Nano Laser pulse is a laser that on the scale of nano dimensions, these tiny lasers can be adjusted quickly and together with the small footprint, make them ideal candidates for optical computing on a chip . The intense optical fields of such a laser also enable the amplification effect in nonlinear optics or scattering (Raman) with increased surface area , and thus pave the way for integrated nanophotonic circuits . or amplification is a process in which the environment transfers part of its energy to the emitted electromagnetic radiation , and as a result, the optical power increases. This is the basic principle of all lasers . Quantitatively, gain is a measure of the ability of a laser medium to increase optical power.

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