

Should microdisks be used in a low-power-consumption and high-density integrated system?

The theoretical and experimental results show that the microdisks will be a preferred option in a low-power-consumption and high-density integrated system since it occupies less on-chip space, tolerates more critical dimension (CD) variation, and consumes less power including dynamic and static power.

Can a microdisk laser be electrically injected?

Microdisk lasers are useful for compact wavelength-scale photonic devices and circuits, but their operation by electrical injection can hamper their optical properties. Kim et al. show that a graphene-contact electrode provides efficient electrical injection while minimising optical losses.

What are the characteristics of electrical network?

Based on such characteristics electrical network can be classified as below : A circuit or network whose parameters i.e. elements like resistances, inductances and capacitances are always constant irrespective of the change in time, voltage, temperature etc. is known as linear network. The Ohm's law can be applied to such network.

How is a microdisk fabricated?

Representative SEM images of the key fabrication steps are shown in Fig. 2a-d. First, a microdisk with a diameter of ~5  $\mu\text{m}$  is fabricated by electron-beam lithography and dry etching, and a dielectric ring structure is fabricated on the top of the microdisk using cross-linked poly (methyl methacrylate) (PMMA), Fig. 2a.

What is a basic electrical network?

A basic electrical network can be regarded as a connection of buses through transmission lines, where every bus carries a load or demand that must be satisfied by the power flowing through these lines. Every electrical network must follow the basic laws of Physics called the Kirchoff's equations.

Does a microdisk based modulator have a smaller footprint?

The results show that a microdisk based modulator with a smaller footprint has less sensitivity to fabrication deviation, larger thermal tuning efficiency, and less dynamic power consumption, which provides instructions for the future chip design of a high-density integrated system.

Subject Name: Electric circuits and network Subject Code: Model Answer 1 Page 1/ 22330 Important Instructions to examiners: 1) The answers should be examined by key words and ...

Department of Electrical Engineering and Computer Science 6.061 Introduction to Power Systems Class Notes Chapter 1: Review of Network Theory\* J.L. Kirtley Jr. 1 Introduction This note is a ...

An electrical network is a graph with positive weights attached to the edges and a chosen subset of the set of

vertices which are called the boundary vertices. The theory of ...

Suppose a disk with area  $A$  is placed in a uniform electric field of magnitude  $E$ . The disk is oriented so that the vector normal to its surface,  $\mathbf{n}$ , makes an angle  $\theta$  with the electric ...

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Electrical Network Topology/Electrical Network Graph Theory: Complete Incidence Matrix, Reduced or Incidence Matrices of Electrical Network, Possible trees that can be drawn out of a given graph

Q.1. What do you mean by electric network and electric circuit? Answer: An electric network is any possible interconnection of electric circuit elements (e.g. R, L, C) or branches. An electric ...

Thanks to its compact footprint and strong electrical-optical or all-optical effects, the microdisk modulator features multiple NAFs, which could serve as a flexible nonlinear unit ...

Classification of Electrical Network: The behaviour of the entire network depends on the behaviour and characteristics of its elements. Based on such characteristics electrical network can be ...

Whereas by Thevenin's theorem a complex two-terminal network may be simplified for solution by reducing it into a simple circuit in which the so called open-circuit voltage and looking-back ...

The two fundamental laws of network theory are known as Kirchoff's Voltage Law (KVL), and Kirchoff's Current Law (KCL). These laws describe the topology of the network, and arise ...

The improved thermal performance enabled lasing in the microdisk during electrical injection [121]. In addition to these advantages, using a thin platform with reflective ...

Design and fabrication of graphene-contact microdisk laser. The graphene electrode introduced into our laser device has important roles as an efficient carrier spreading ...

An interconnection of electric power networks enables decarbonization of the electricity system by harnessing and sharing large amounts of renewable energy. The highest ...

Answer: 1: Measure the voltage across resistive circuit and verify it, using Kirchoff's Voltage law (KVL).  
Click Here: 3: Measure current through and voltage across ...

This article lists 100+ Network Theory MCQs for engineering students. All the Network Theory Questions & Answers given below include a hint and wherever possible link to the relevant ...

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