

The field strength of the capacitor remains unchanged

How does a parallel plate capacitor maintain a constant voltage?

The plates of a parallel-plate capacitor are maintained with a constant voltage by a battery as they are pulled apart. How is the strength of the electric field affected during this process? 1. The strength of the electric field decreases during this process. 2. The electric field between the plates becomes zero. 3.

What are the characteristics of a capacitor?

1. A capacitor consists of a single sheet of a conducting material placed in contact with an insulating material. 2. The capacitance of a capacitor depends upon its structure. 3. A capacitor is a device that stores electric potential energy and electric charge. 4. The electric field between the plates of a parallel-plate capacitor is uniform.

Is the electric field between the plates of a parallel-plate capacitor uniform?

The electric field between the plates of a parallel-plate capacitor is uniform. - A capacitor is a device that stores electric potential energy and electric charge. - The capacitance of a capacitor depends upon its structure. - A capacitor consists of a single sheet of a conducting material placed in contact with an insulating material.

What is the structure of a capacitor?

A capacitor consists of a single sheet of a conducting material placed in contact with an insulating material. The electric field between the plates of a parallel-plate capacitor is uniform. A capacitor is a device that stores electric potential energy and electric charge. The capacitance of a capacitor depends upon its structure.

Why is there no electric field between the plates of a capacitor?

In each plate of the capacitor, there are many negative and positive charges, but the number of negative charges balances the number of positive charges, so that there is no net charge, and therefore no electric field between the plates.

What is the capacitance of a capacitor?

The capacitance of a capacitor depends upon its structure. - A capacitor consists of a single sheet of a conducting material placed in contact with an insulating material. The electric field between the plates of a parallel-plate capacitor is uniform. A capacitor is a device that stores electric potential energy and electric charge.

A dielectric material, such as Teflon, is placed between the plates of a parallel-plate capacitor without altering the structure of the capacitor. The charge on the capacitor is held fixed. How is the electric field between the plates of the capacitor affected? The electric field is not altered, because the structure remains unchanged. The ...

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(A) Strength of electric field inside the capacitor remains unchanged, if battery is disconnected before pulling the plates. (B) During the process, negative work is done by an external force applied to pull the plates whether the battery is disconnected or it remains connected.

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On the other hand, over the course of the "destroy" animation associated with Figure 5.6.3, the strength of the electric field decreases as each positive charge is returned to its original position.

a. Strength of electric field inside the capacitor remains unchanged, if battery is disconnected before pulling the plates. b. During the process, work is done by external force applied to pull the plates irrespective of whether the battery is disconnected or not. c. Strain energy in the capacitor decreases if the battery remains connected

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When a sheet of bakelite is inserted between the plates of an air capacitor, the effective distance between the plates increases.- This is because the higher dielectric constant of bakelite reduces the electric field strength between the plates.- As the distance between the plates increases, the capacitance of the air capacitor also increases.-

Therefore, the electric field strength, and consequently the number of electric field lines, remains the same. The dielectric material reduces the electric field strength per unit charge, but since the charge is constant, the overall field strength remains unchanged.

A parallel plate capacitor is charged by a battery and the battery remains connected, a dielectric slab is inserted in the space between the plates. Explain what changes if any, occur in the values of the (i) potential difference between the plates (ii) electric field between the plates (ii) energy stored in the capacitor

- The electric field between the plates of a parallel-plate capacitor is uniform. - A capacitor is a device that stores electric potential energy and electric charge. - The capacitance of a ...

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