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FARADAY CAGES
Charges and Electric Fields in Conductors; Gauss’ Law

\[ \oint_{S} \mathbf{E} \cdot d\mathbf{A} = \frac{Q_{\text{enclosed}}}{\varepsilon_0} \]
Faraday Cage Effect

The Faraday cage, Discovered in 1836, depends on the following 2 principles:

- A Faraday cage is an enclosed conducting shell.
- This hollow conducting shell will have no electric field inside.

This Faraday cage effect causes Faraday cages to act as shields for strong electric fields or other electrical effects.
Lightning Safety

Shielding crucial and sensitive electronic components.
Applications of Faraday Cages

Buildings or rooms can be built as Faraday cages.

The metal shell of a microwave oven also acts as a Faraday cage and traps the microwaves inside the oven.

In addition to Faraday cages, Michael Faraday discovered Faraday's law for electromagnetic induction.
References

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