



Today's Blueprint for Success



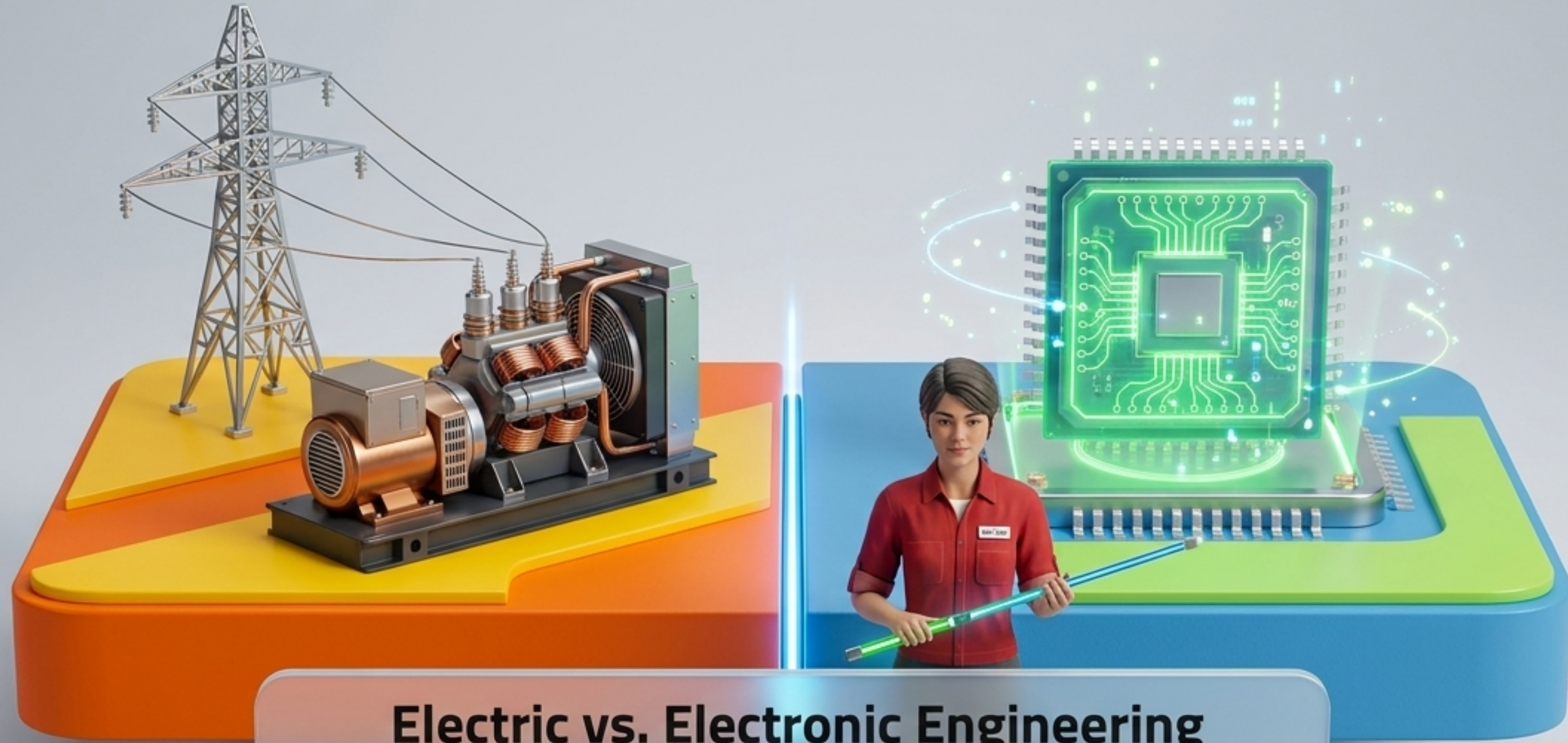
Core Vocabulary



Device Functions



System Synthesis



Electric vs. Electronic Engineering

ELECTRIC

- Power & Energy
- Macro Scale
- AC/DC Generation

ELECTRONIC

- Information & Signals
- Micro Scale
- Processing Chips

The Medium of Energy Flow

POWER CABLE

The physical pathway for electricity.

CONDUCTIVE

A material that allows energy to pass through easily.





Controlling the Flow

RESISTOR

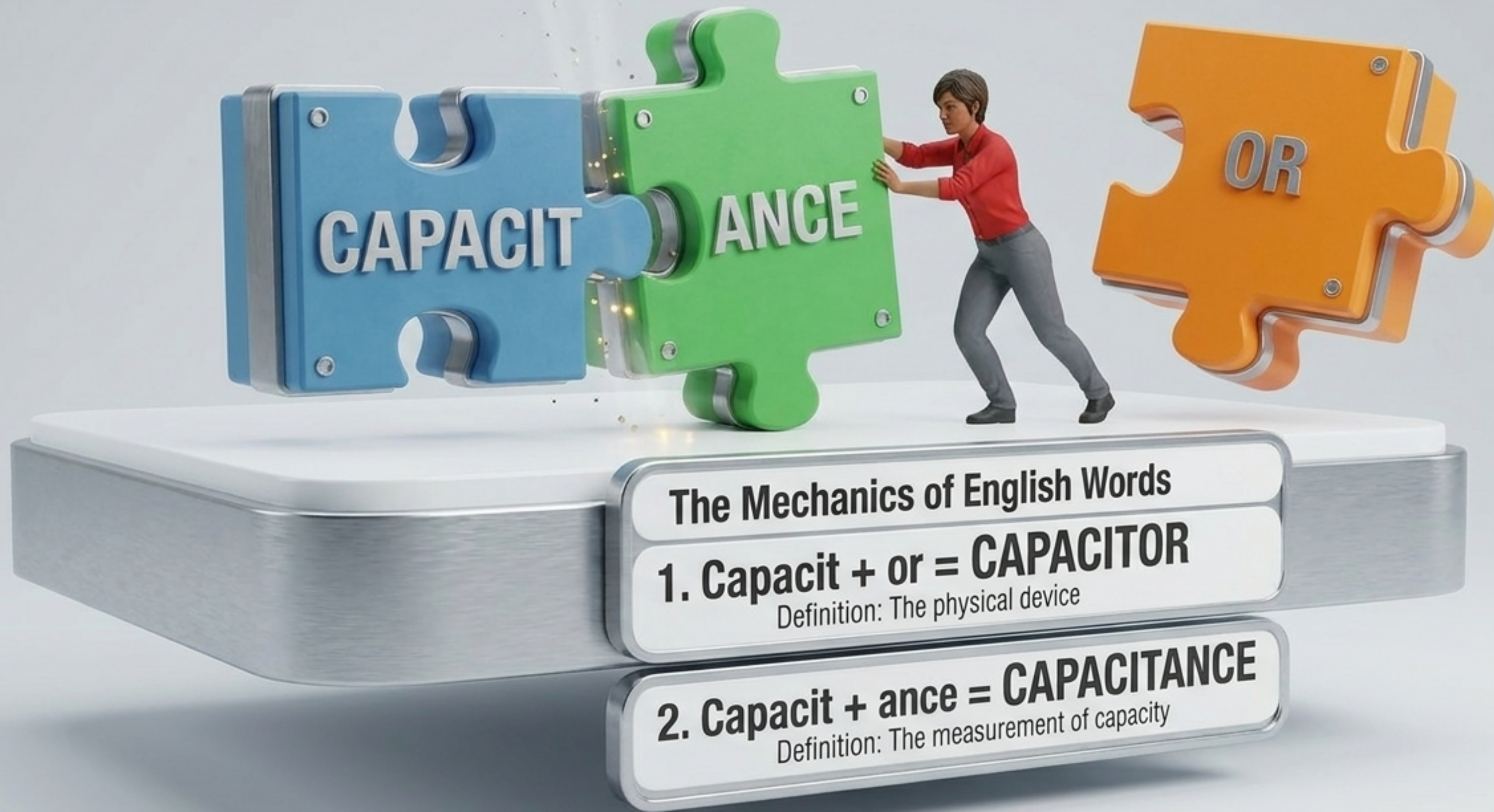
A component that limits or regulates the flow of electrical current.

Storing the Energy

CAPACITOR

A device used to store an electric charge temporarily.





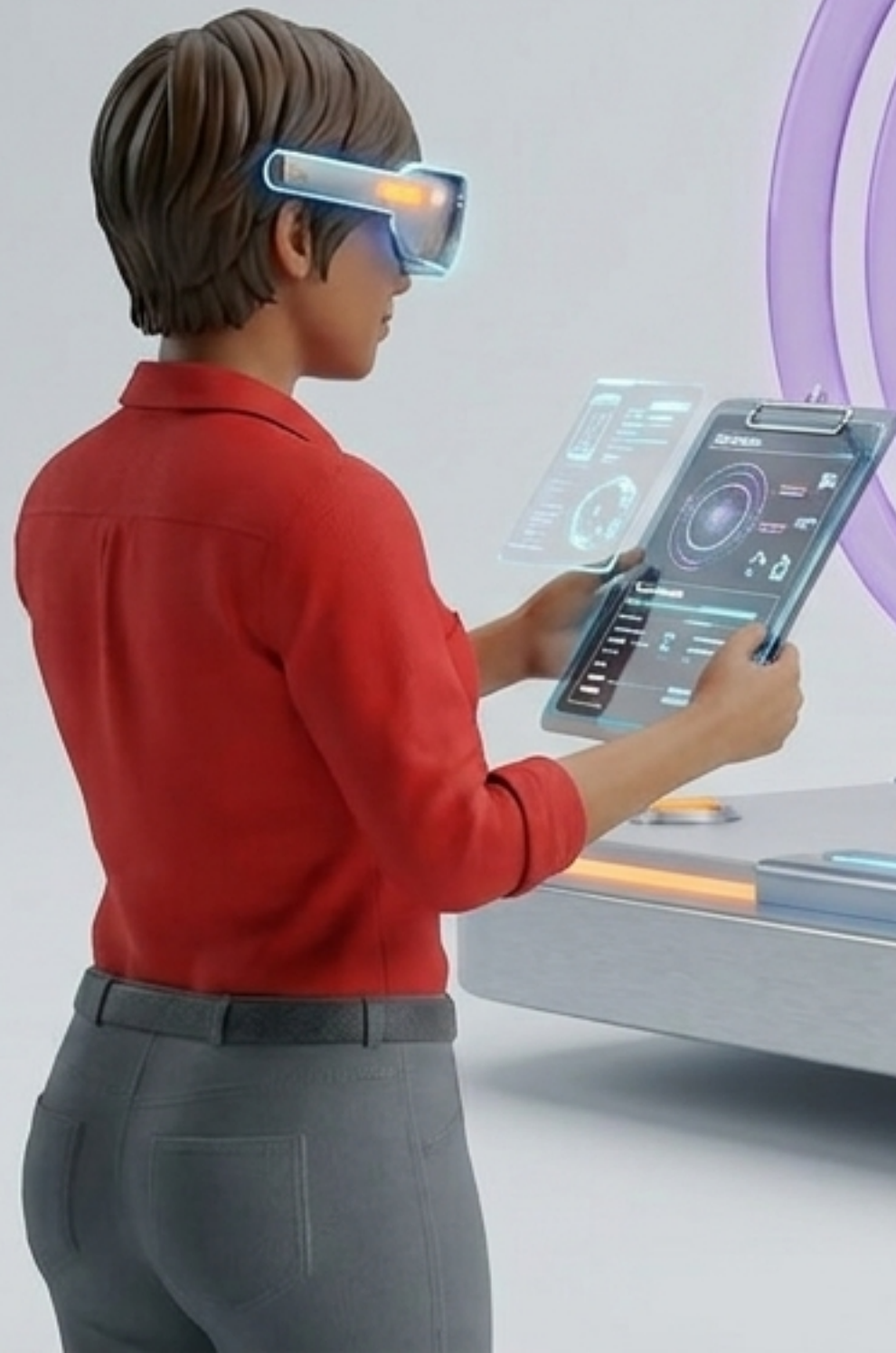
The Mechanics of English Words

1. **Capacit + or = CAPACITOR**

Definition: The physical device

2. **Capacit + ance = CAPACITANCE**

Definition: The measurement of capacity



Harnessing Magnetic Fields

INDUCTOR

A passive device that stores energy in a magnetic field.

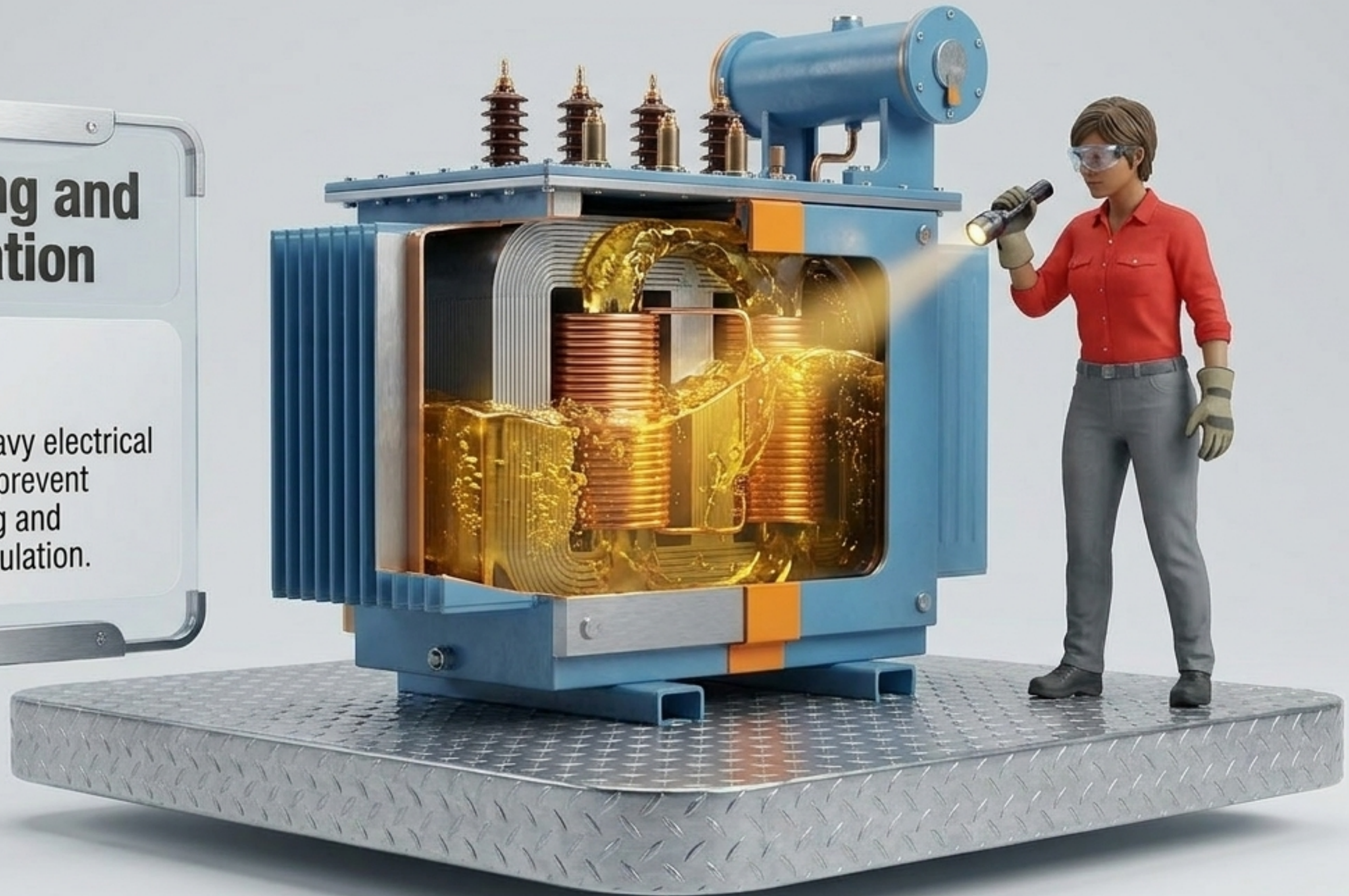
COIL

The physical copper wire wrapped in a spiral.

Cooling and Insulation

OIL

Used in heavy electrical devices to prevent overheating and provide insulation.

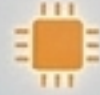


The **Mechatronic** System in Action

1. Power In
(**ELECTRIC**)



2. Signal Regulation
(**ELECTRONIC**)



3. Physical Movement
(**MECHANICAL**)



Innovation Lab Glossary

