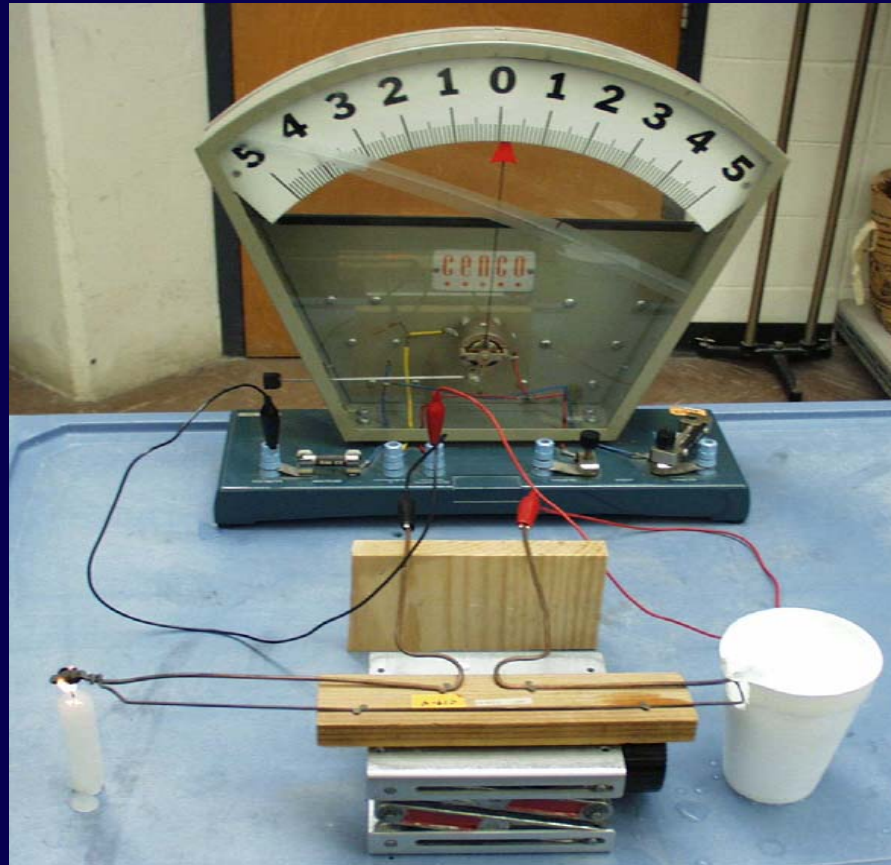




6- Seebeck Effect



By Aron Alexandre Heleodoro



6- Seebeck Effect

The Method

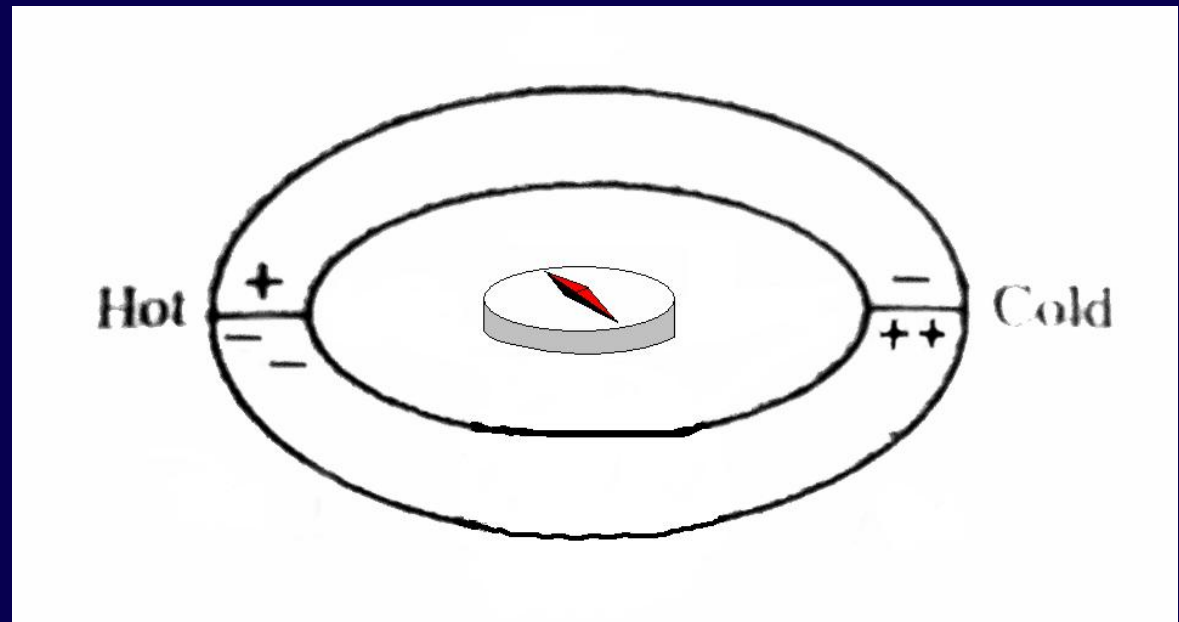
- ❖ **How it works**
 - **Magnetic Field created by the current**
 - **How the current appears**
 - **The Seebeck Effect**
 - **Thompson Effect**
 - **Peltier Effect**
- ❖ **How to maximize it**
 - **The Voltage and Thermocouple**
 - **The Current**
 - **Experimental observation**
 - **The Maximum Deviation**



6- Seebeck Effect

Development - The Magnetic Deviation

- **Deviation caused by a Magnetic Field**
- **Magnetic Field created by the current (Biot-Savart Law)**
- **The Current**

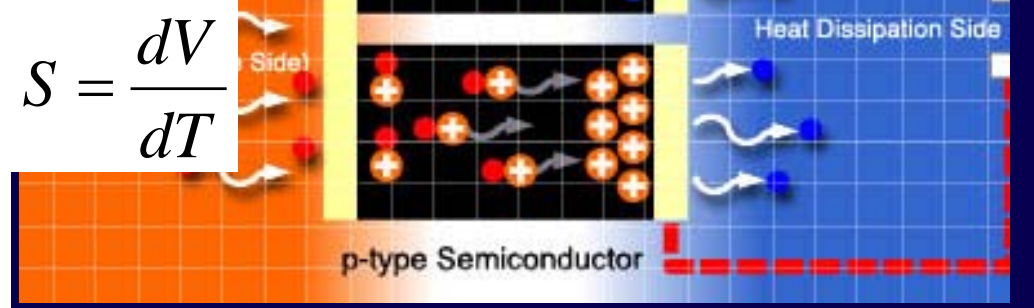
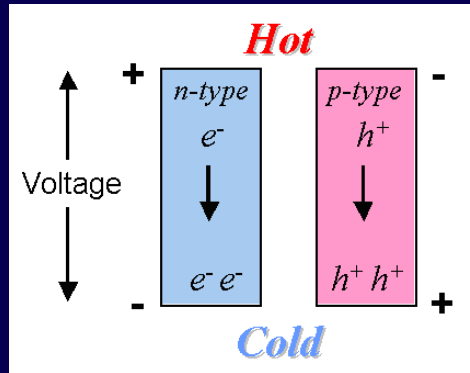
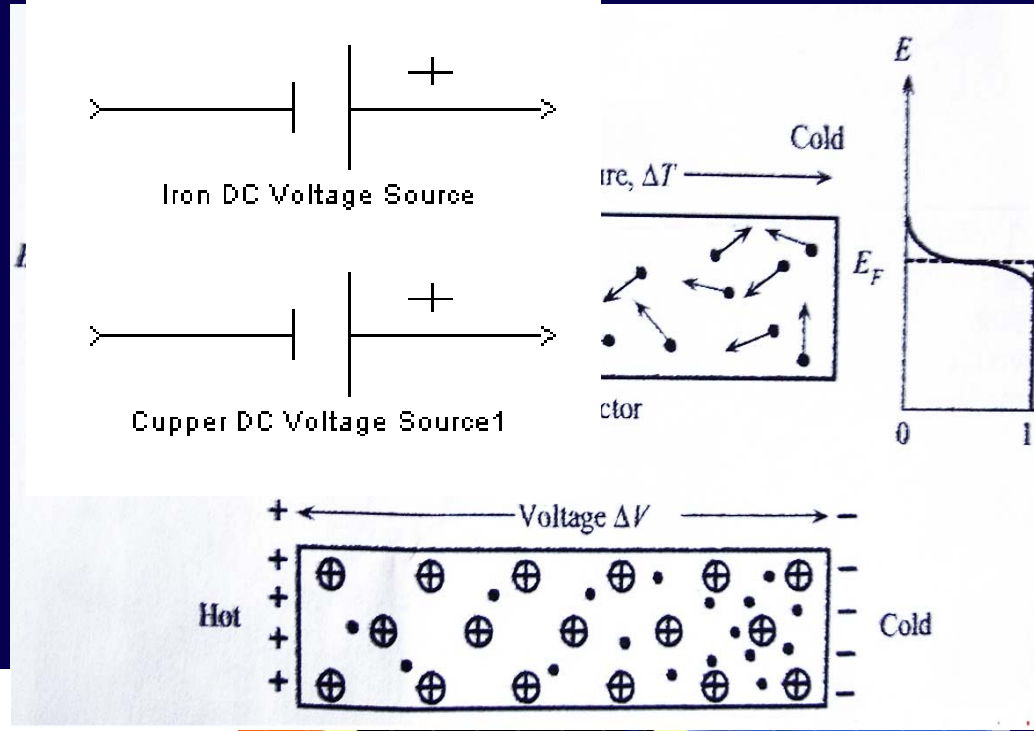




6- Seebeck Effect

Development - The Seebeck Effect

- The Thompson Effect
- Seebeck coefficient
- Metal dependence
 - Normal conduction metals
 - Abnormal conduction metals
 - Semiconductors



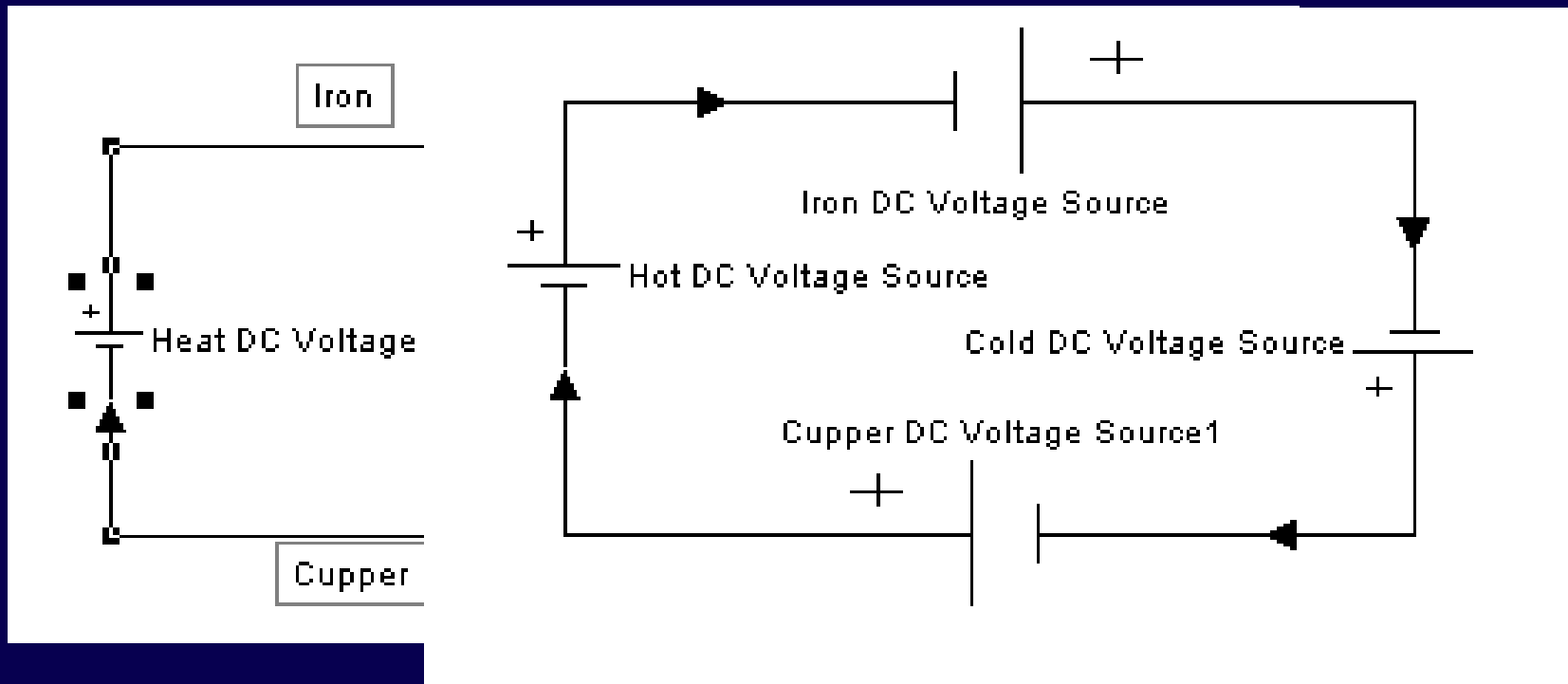
$$S = \frac{dV}{dT}$$



6- Seebeck Effect

Development - The Seebeck Effect

- The Peltier Effect
- The complete Effect

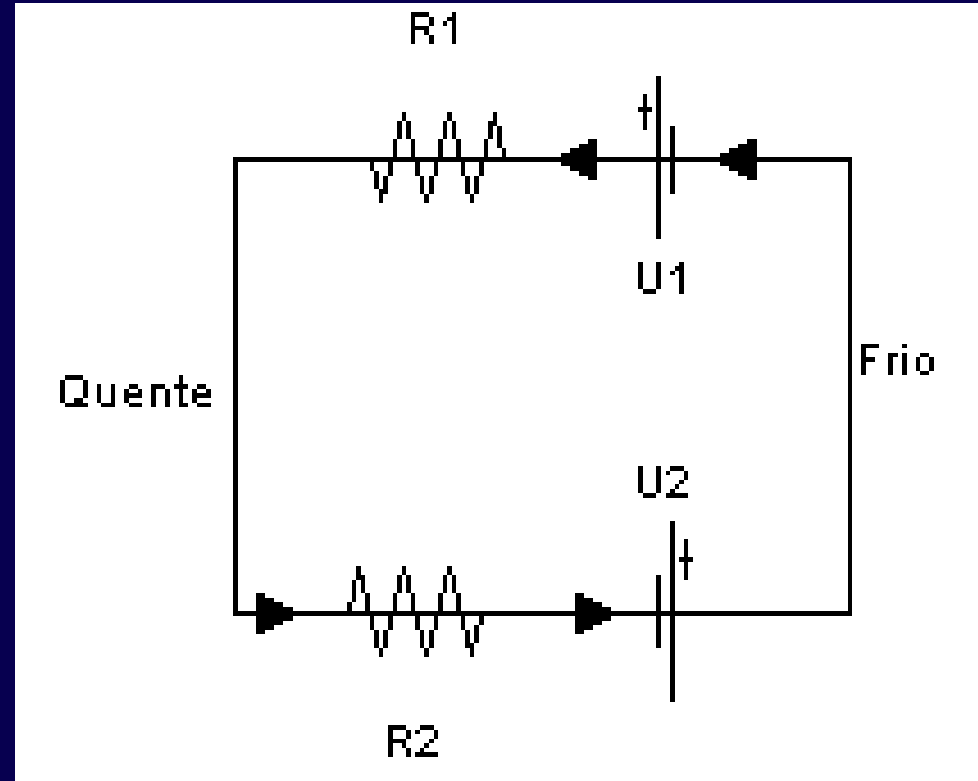




6- Seebeck Effect

Development - Thermoelectric Circuit

- **Maximum Current**
- **Maximize Voltage**
 - Coefficients
 - Thermocouple
 - Temperature
- **Minimum resistance**
 - The material



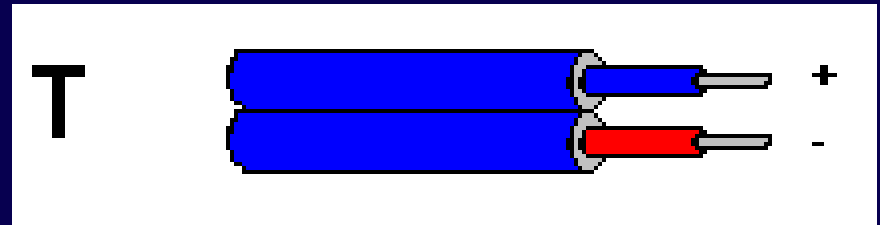
$$i = \frac{U_1 + U_2}{R_1 + R_2}$$



6- Seebeck Effect

Development - Thermocouple

➤ Uses on electronic



➤ Obtain the thermocouple for maximum voltage



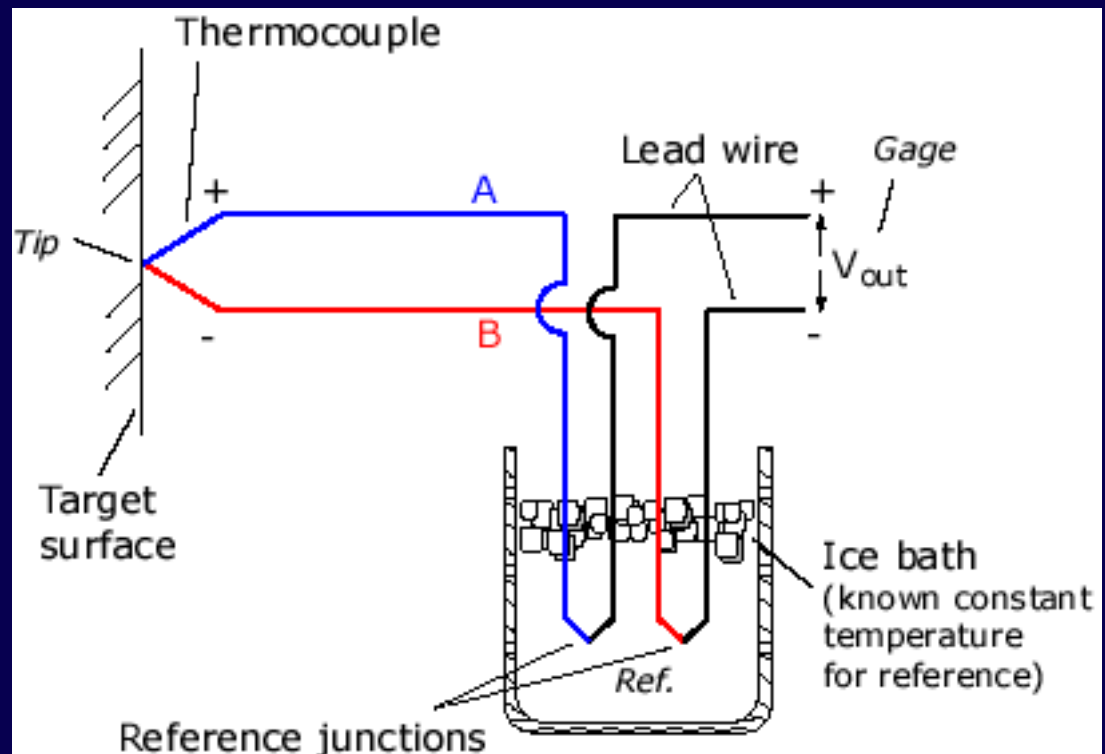
6- Seebeck Effect

Development - Experiment

➤ Observation of the effect

➤ The Data:

- Tables
- Graphics
- Photos
- Videos





6- Seebeck Effect

Development - The Deviation

- **The 'angle' of deviation**
 - **With the Field perpendicular**
 - **With the Field in the opposite direction**



6- Seebeck Effect

Final Considerations

- **The Maximum Deviation**
- **Experimental confirmation**