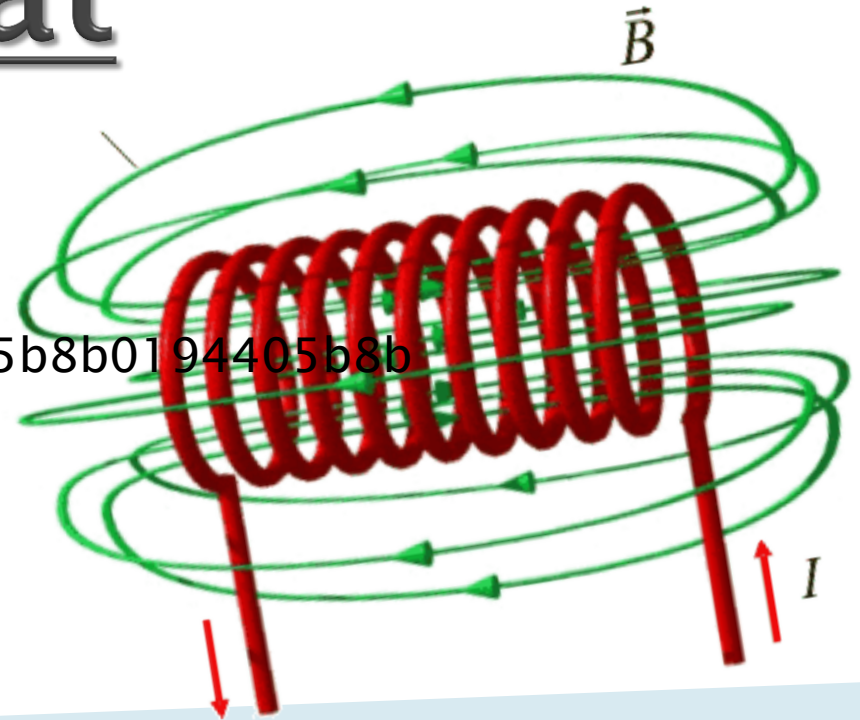


Induktivität

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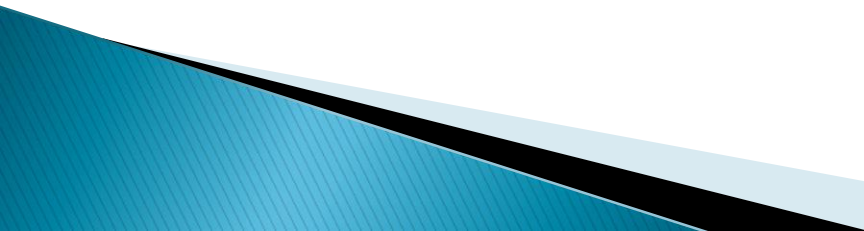
Aleksandar Andreev
Projektlabor Gruppe B2



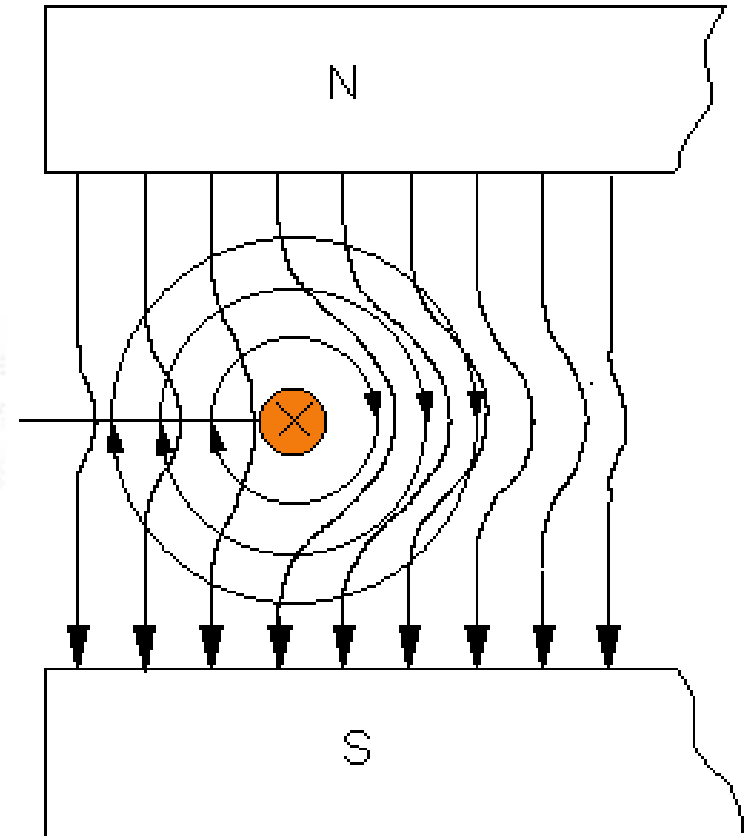
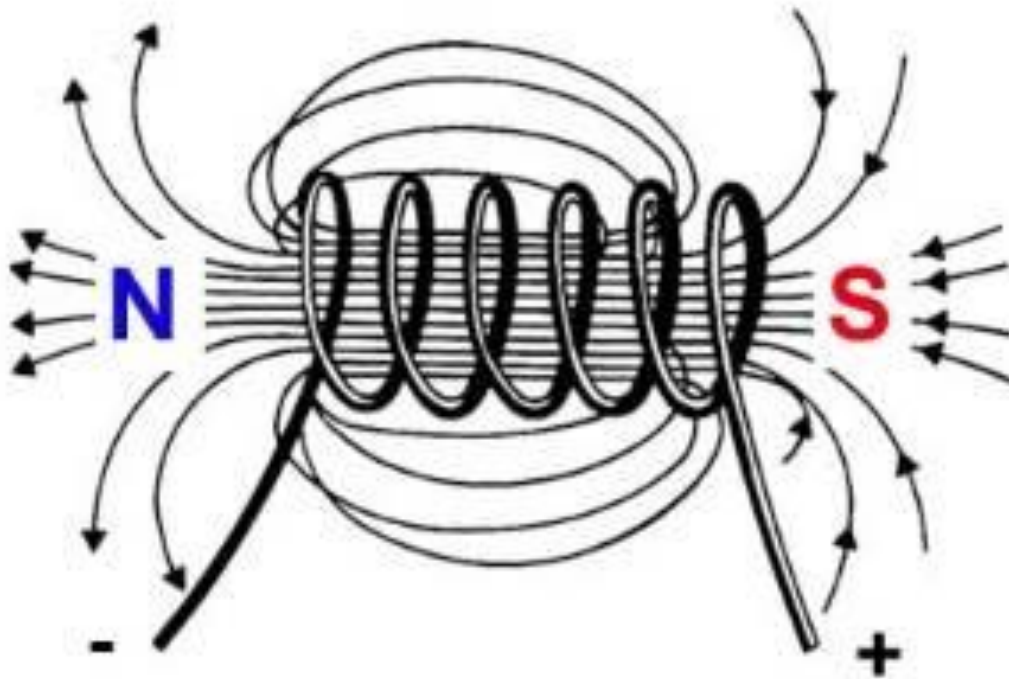
Gliederung

- ▶ Was ist Induktivität ?
 - Theorie
 - Wichtige Begriffe und Formeln

 - ▶ Anwendung in der Elektrotechnik
 - Bauteile
 - Elektrogeräte

 - ▶ Anwendung außerhalb der Elektrotechnik
 - Industrie
 - Andere
- 

Was ist induktivität ?



▶ H-Magnetische Feldstärke $\mathbf{H} = \mathbf{n} \cdot \frac{\mathbf{I}}{l}$

▶ B-Magnetische Flussdichte $\mathbf{B} = \mu_0 \cdot \mathbf{H}$

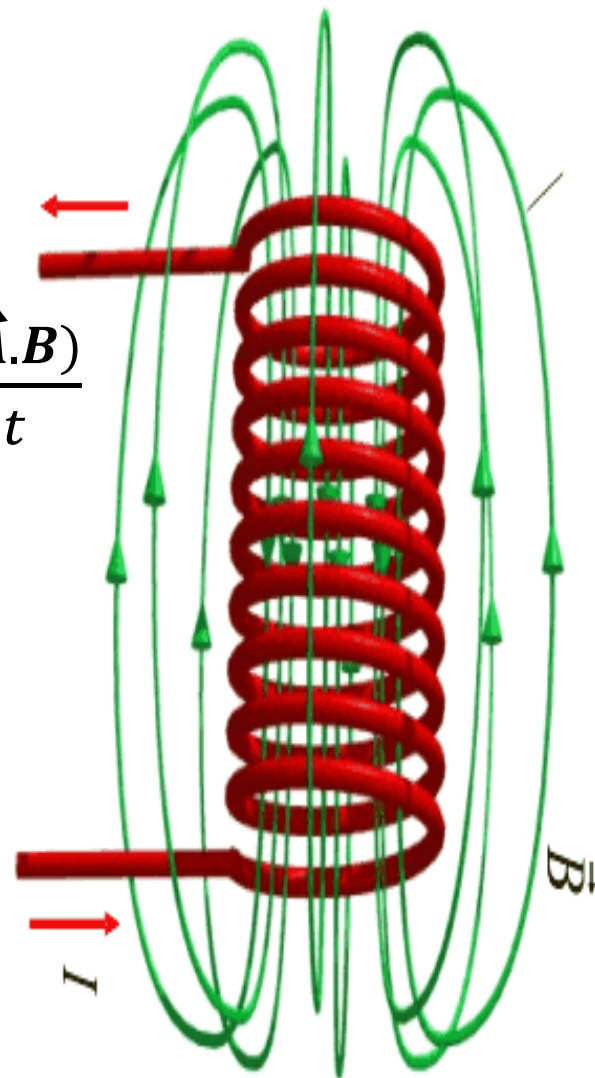
▶ E-Elektrische Feldstärke

▶ U_{ind} – Induzierte Spannung $U_{ind} = \frac{d(\mathbf{A} \cdot \mathbf{B})}{dt}$

▶ $U_{ind} = \underline{n^2 \cdot \frac{A}{l} \cdot \mu_0} \cdot \frac{dI}{dt}$

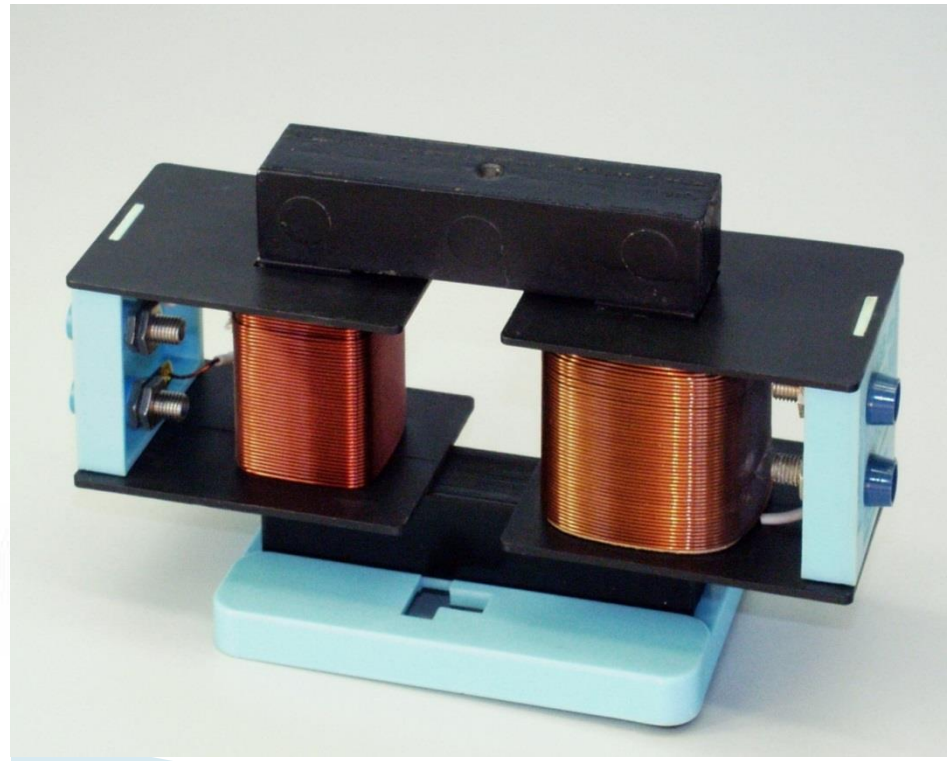
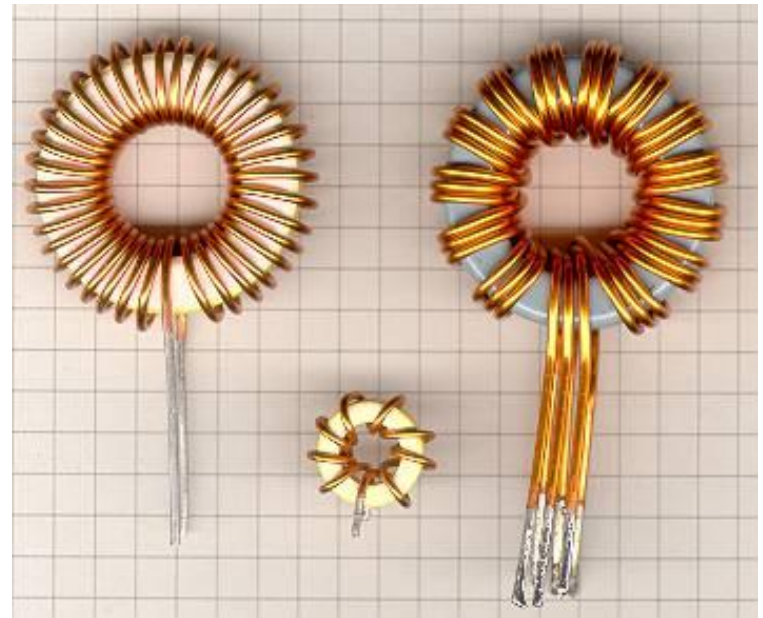
▶ L-Induktivität

$$\mathbf{L} = n^2 \cdot \frac{A}{l} \cdot \mu_0 \quad [\mathbf{L}] = \text{H}$$

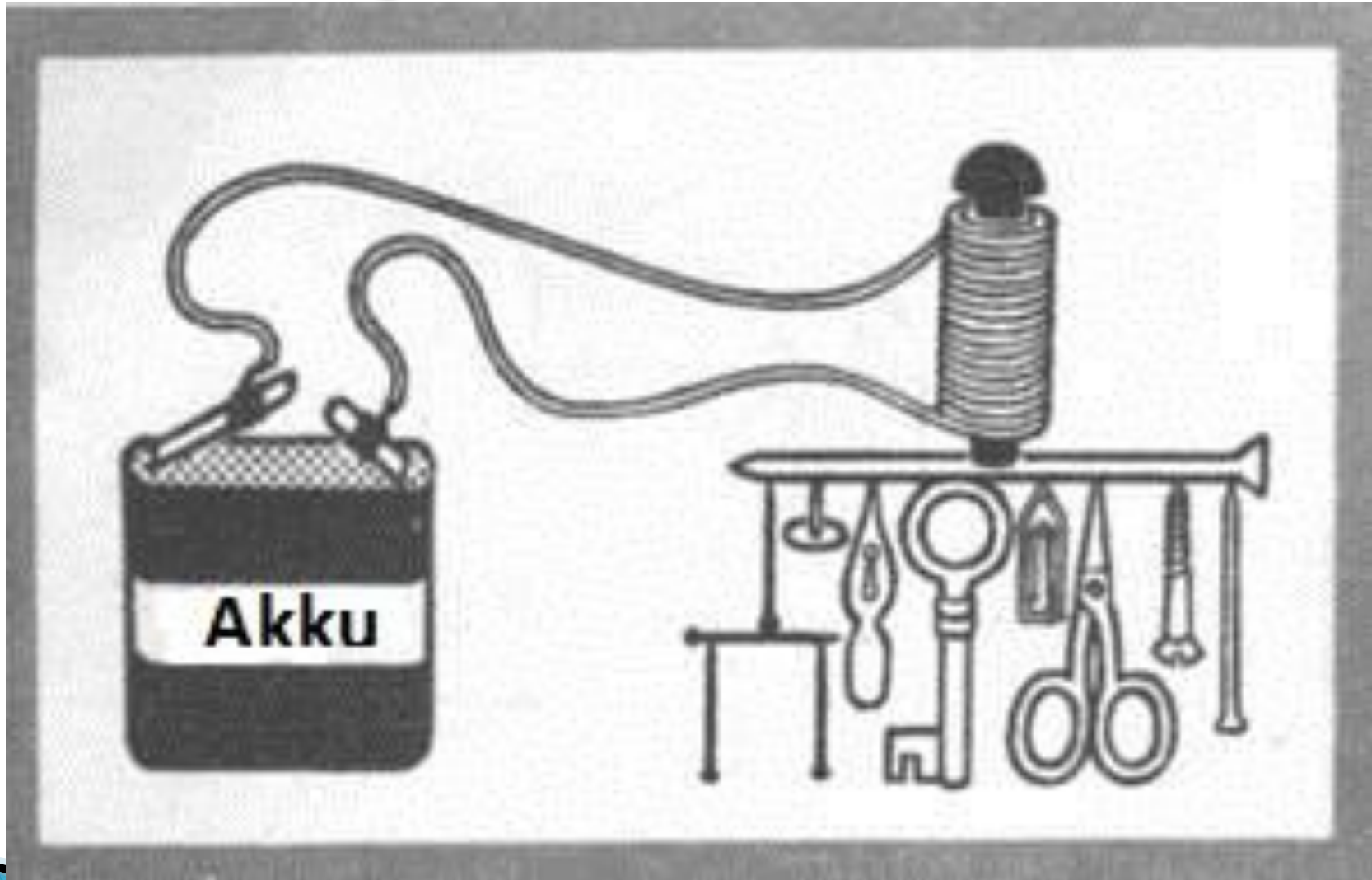


Anwendung in der Elektrotechnik

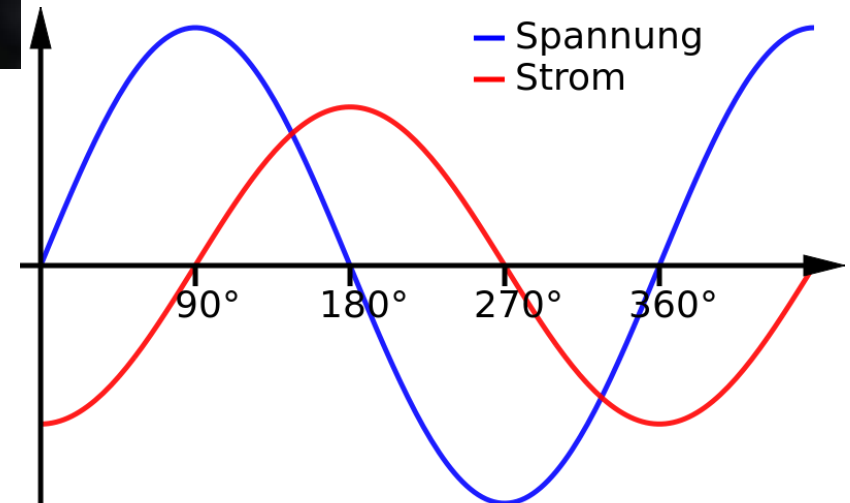
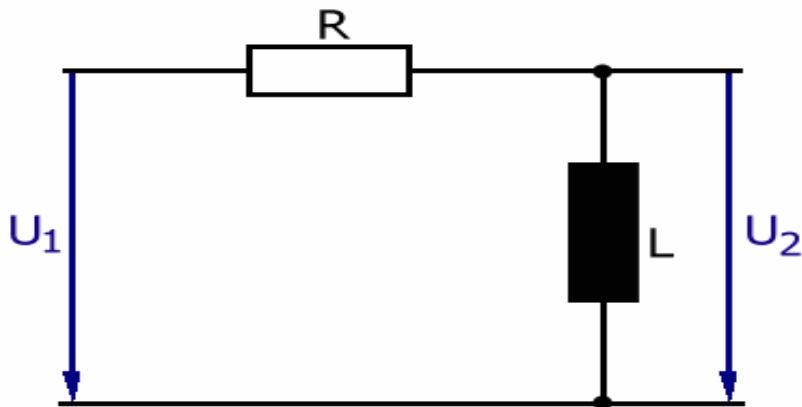
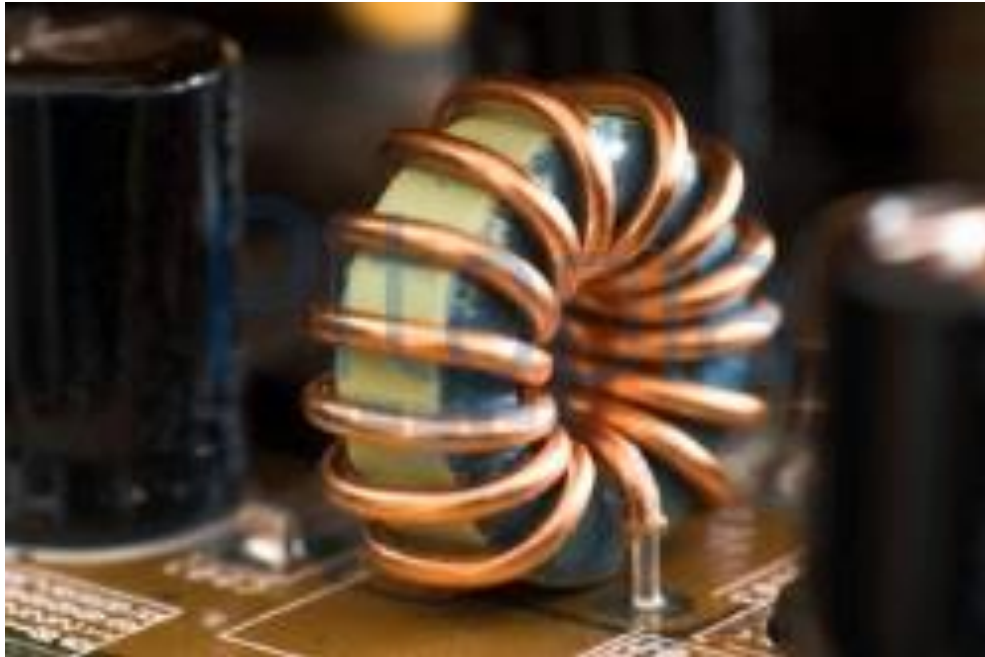
- ▶ Kreisringspule
- ▶ Transformatoren
- ▶ Relais
- ▶ Elektromotoren
- ▶ Lautsprecher
- ▶ Elektromagnet



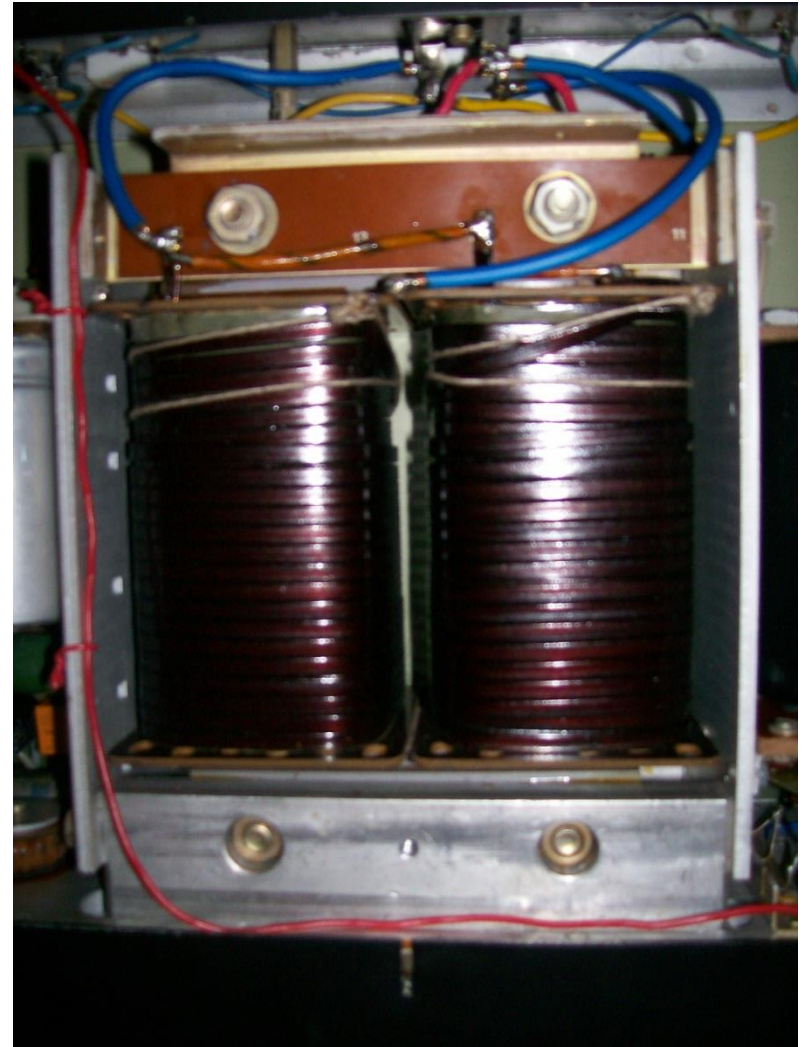
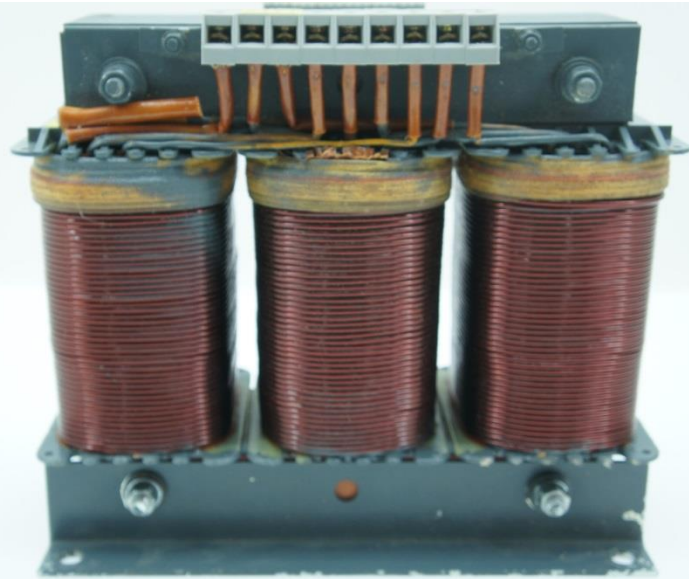
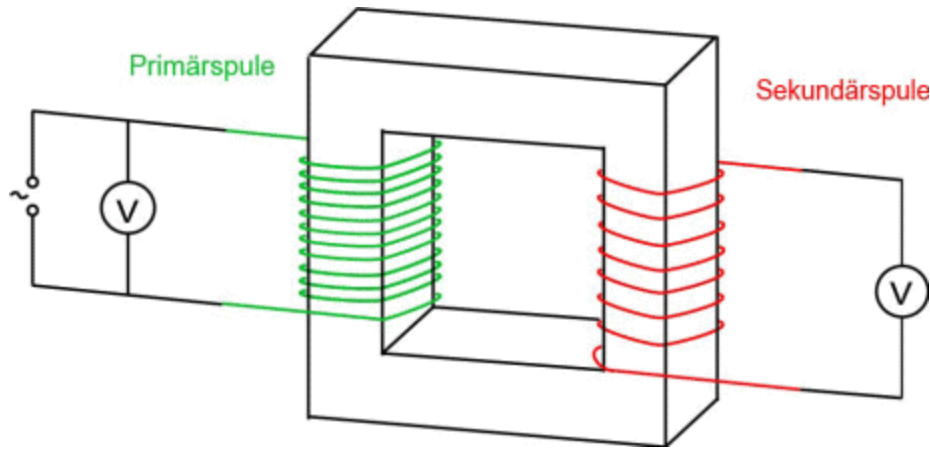
Elektromagnet



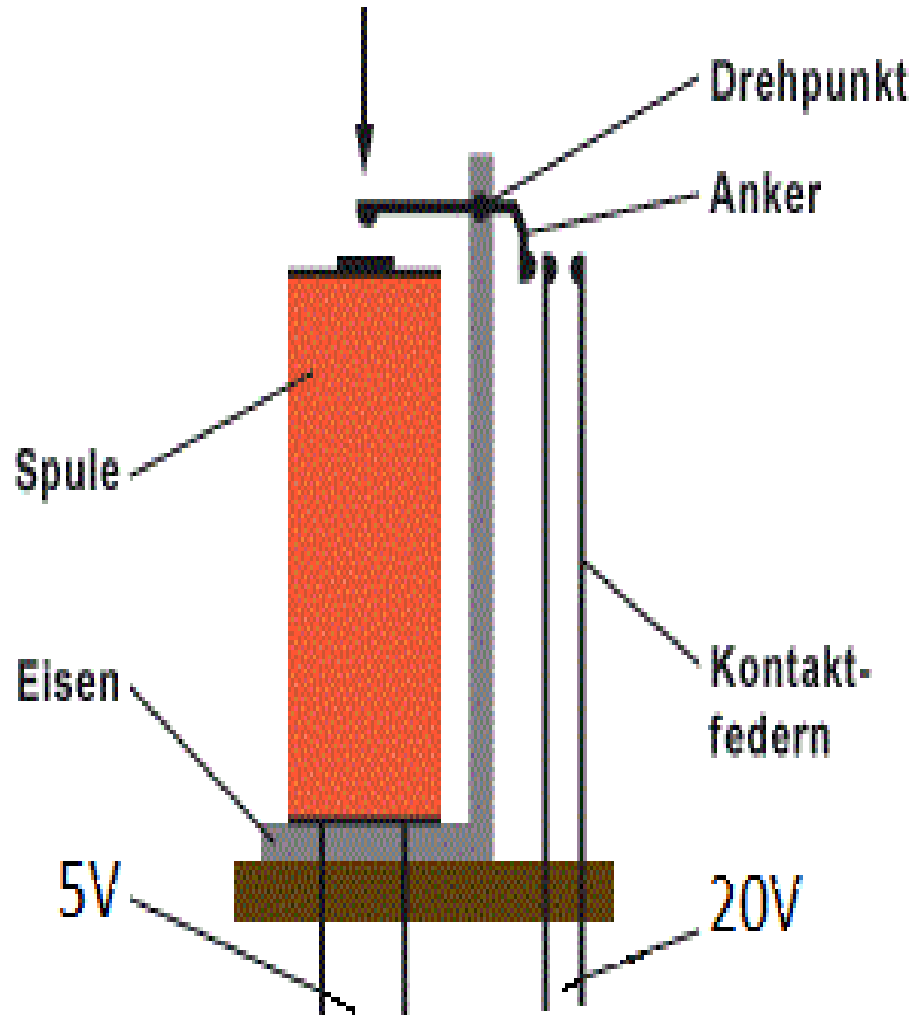
Kreisringspule



Transformatoren

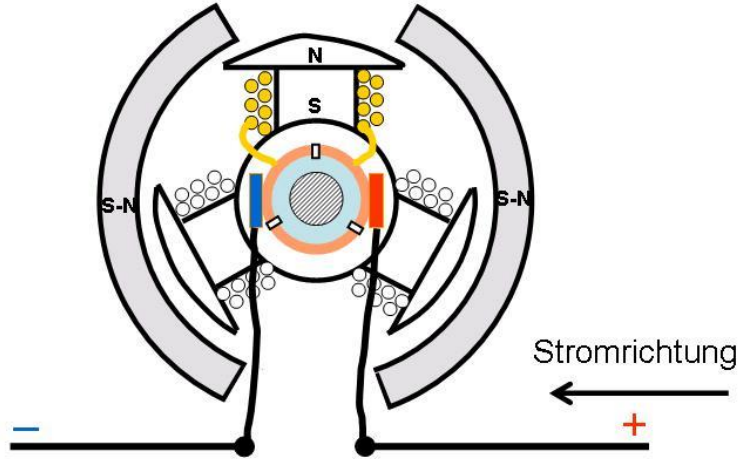


Relais

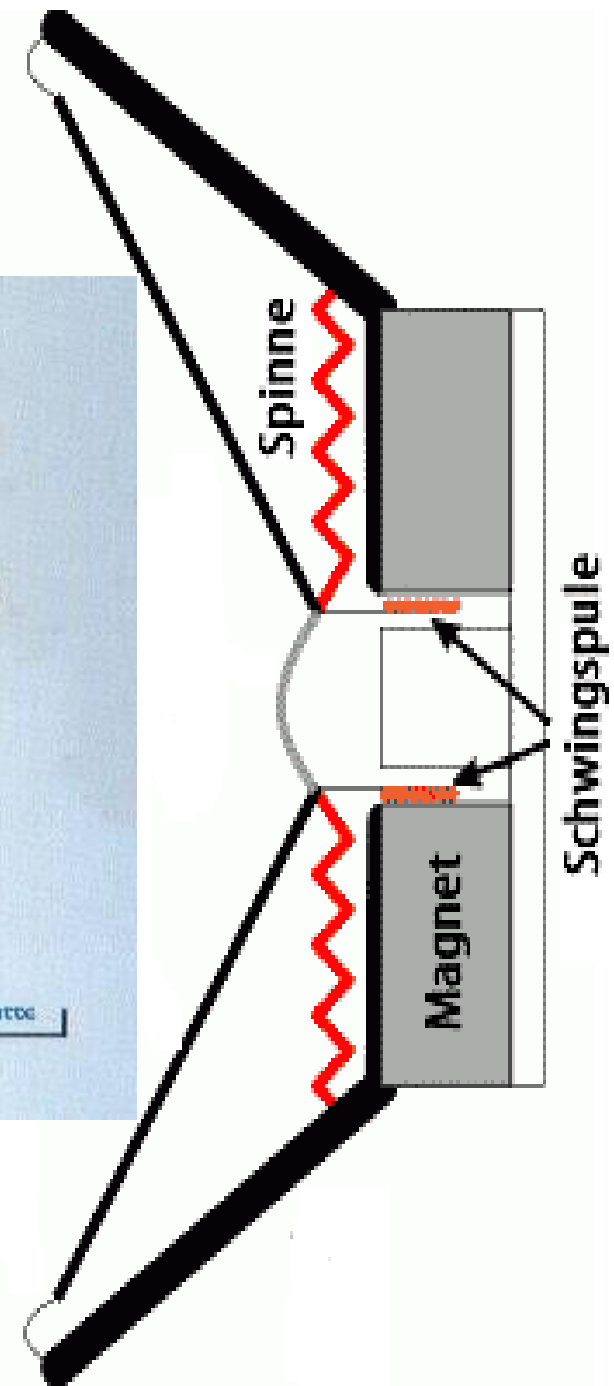
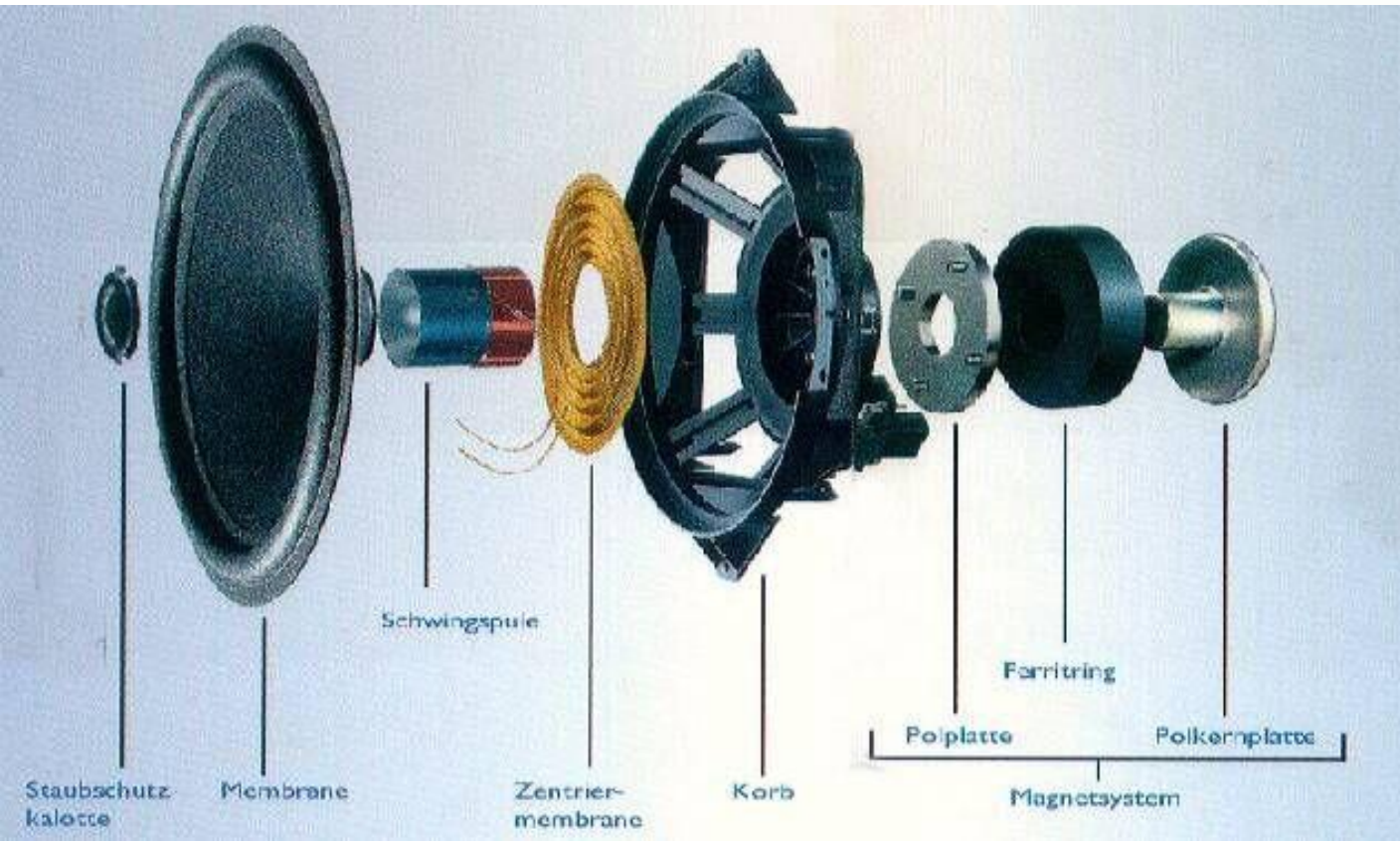


Elektromotoren & Generatoren

Gleichstrommotor



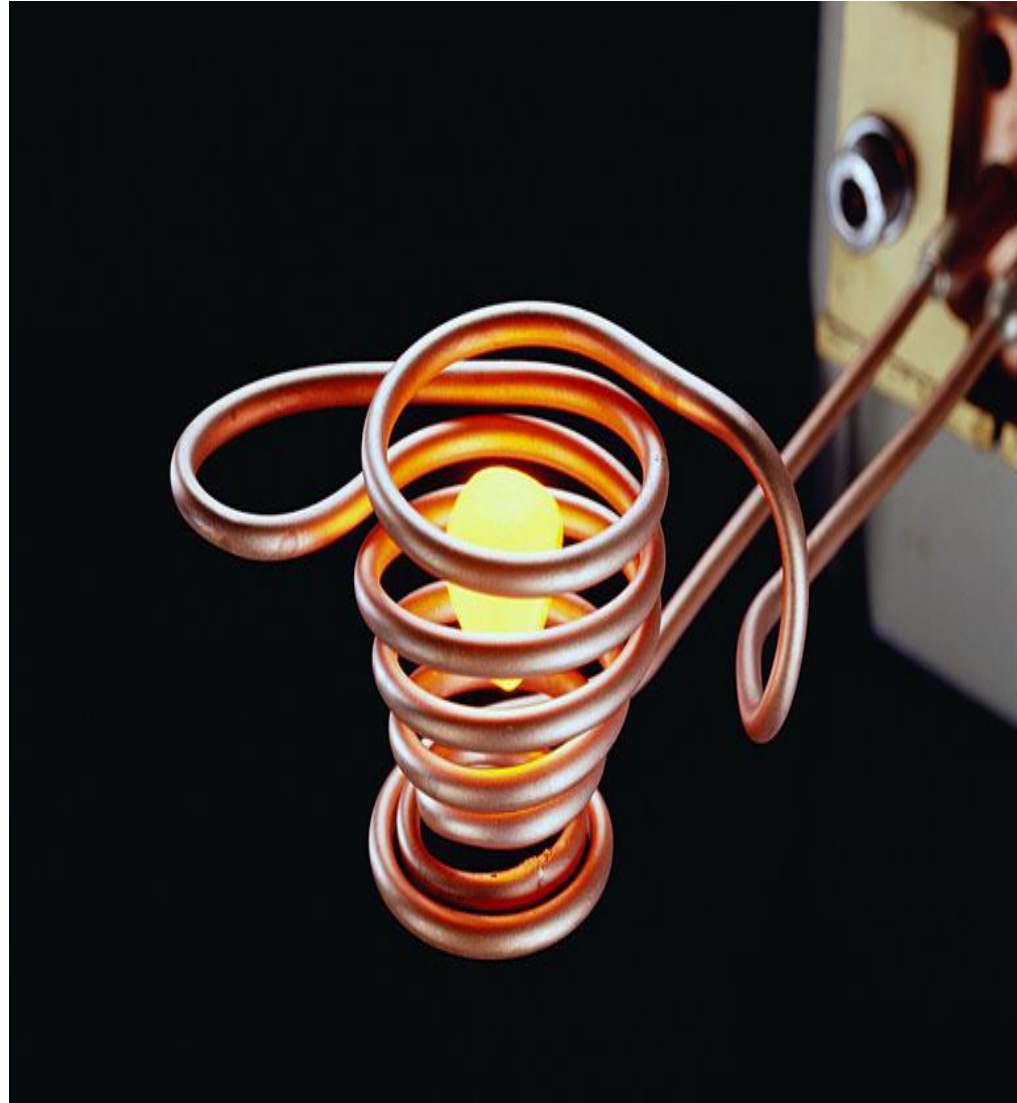
Lautsprecher



Anwendung auserhalb der Elektrotechnik



Induktive Erwärmung



Schmelzofen



Andere Anwendungen

- ▶ Induktionsplatten
- ▶ Ferritkerne



Quellen

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