

## Kap 24 Kondensator (Kapasitans)

Kapasitans  $C = \frac{Q}{V}$

Seriekobling  $\frac{1}{C} = \sum_i \frac{1}{C_i}$   $\frac{1}{C} = \frac{1}{C_1} + \frac{1}{C_2} + \dots$

Parallellkobling  $C = \sum_i C_i$   $C = C_1 + C_2$

Energi  $W = \frac{1}{C} \int_0^Q q dq = \frac{Q^2}{2C} = \frac{CV^2}{2} = \frac{QV}{2}$

Energitetthet  $u = \frac{1}{2} \epsilon_0 E^2$

Potensialforskjell i et elektrisk felt  $V_{ab} = Ed$

Elektrisk felt i en platekondensator  $E = \frac{\sigma}{\epsilon_0}$

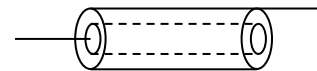
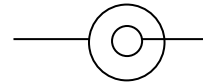
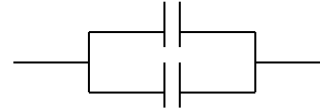
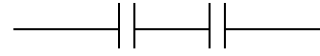
Kapasitans :

Platekondensator  $C = \frac{\epsilon_0 A}{d}$

Kulekondensator  $C = 4\pi\epsilon_0 \frac{r_a r_b}{r_b - r_a}$

Sylinderkondensator  $C = \frac{2\pi\epsilon_0 L}{\ln\left(\frac{r_b}{r_a}\right)}$

Permittivitet for dielektrikum  $\epsilon = K\epsilon_0$



$r_a$  indre radius  
 $r_b$  ytre radius