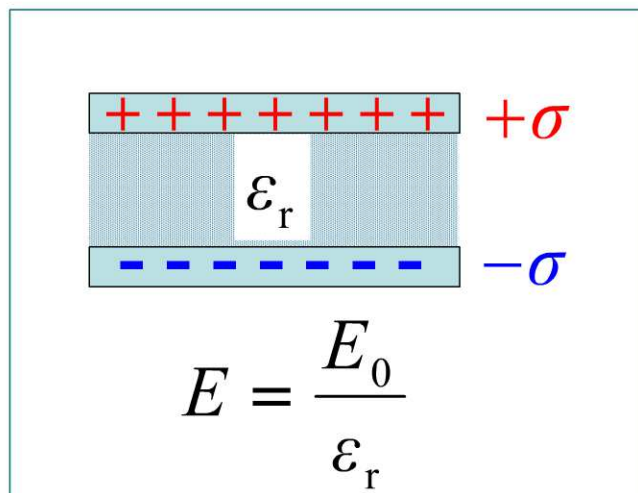
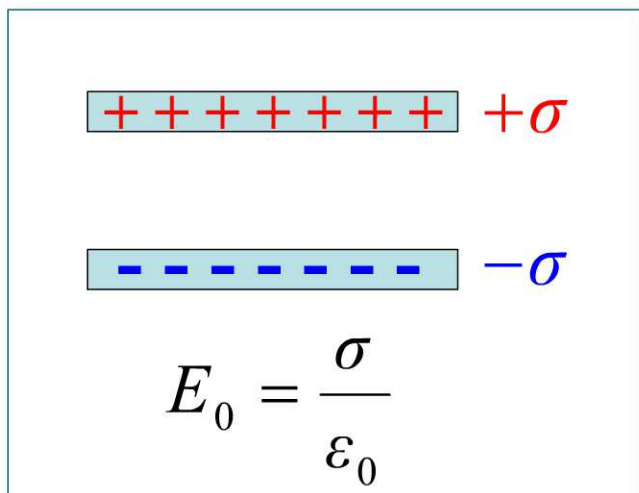


一 电介质对电场的影响 相对电容率



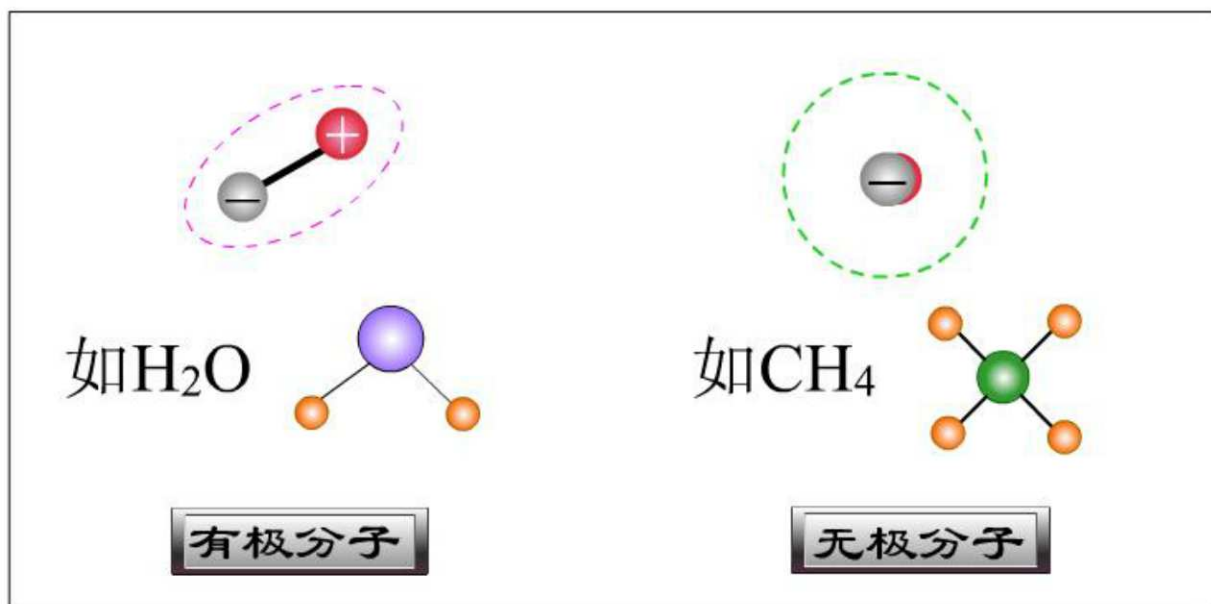
相对电容率 $\epsilon_r > 1$

电容率 $\epsilon = \epsilon_0 \epsilon_r$



二 电介质的极化

电介质 { 无极分子：（氢、甲烷、石蜡等）
有极分子：（水、有机玻璃等）



三 电极化强度

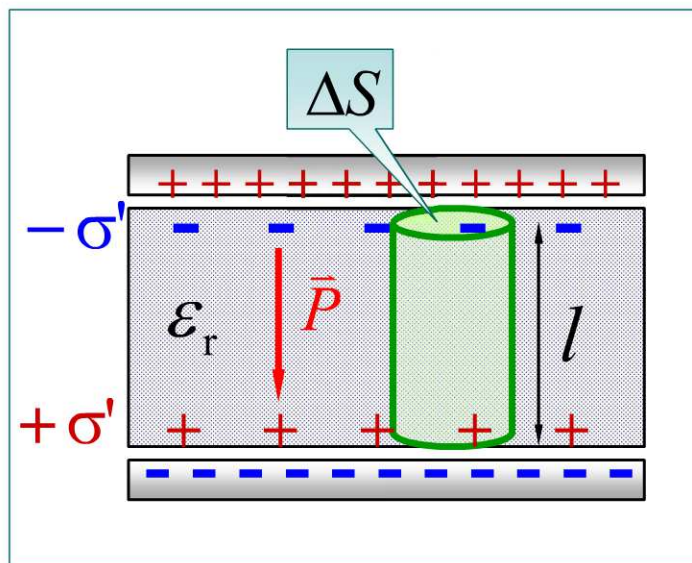
$$\bar{P} = \frac{\sum \bar{p}}{\Delta V}$$

\bar{p} : 分子电偶极矩

\bar{P} : 电极化强度

σ' : 极化电荷面密度

$$P = \frac{\sum p}{\Delta V} = \frac{\sigma' \Delta S l}{\Delta S l} = \sigma'$$



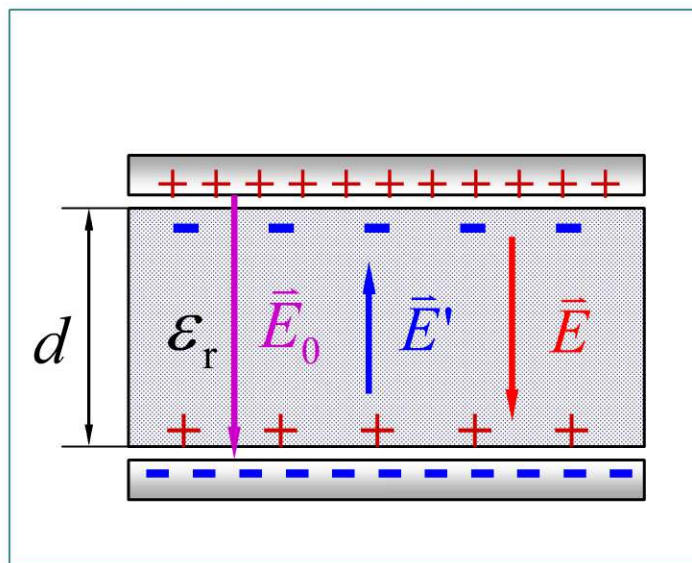
四 极化电荷与自由电荷的关系

$$E = E_0 - E' = \frac{E_0}{\epsilon_r}$$

$$E' = \frac{\epsilon_r - 1}{\epsilon_r} E_0$$

$$\sigma' = \frac{\epsilon_r - 1}{\epsilon_r} \sigma_0$$

$$Q' = \frac{\epsilon_r - 1}{\epsilon_r} Q_0$$



$$\sigma' = \frac{\epsilon_r - 1}{\epsilon_r} \sigma_0$$

$$\vec{P} = (\epsilon_r - 1)\epsilon_0 \vec{E}$$

$\chi = \epsilon_r - 1$ 电极化率

$$\vec{P} = \chi \epsilon_0 \vec{E}$$

$$E_0 = \sigma_0 / \epsilon_0$$

$$E = E_0 / \epsilon_r$$

$$P = \sigma'$$

