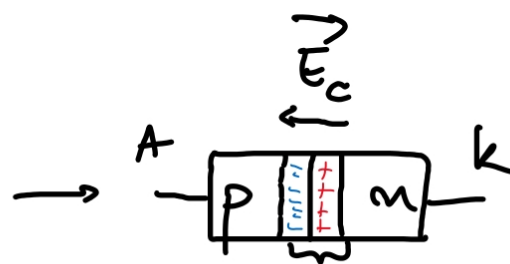
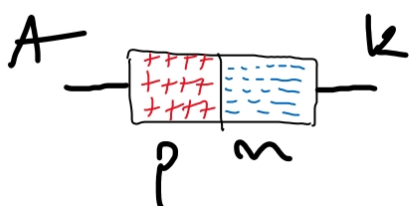


Laborator nr. 1 electronica II :

Sorin Dan Anghel

Dioda semiconductoră : (redresoare)

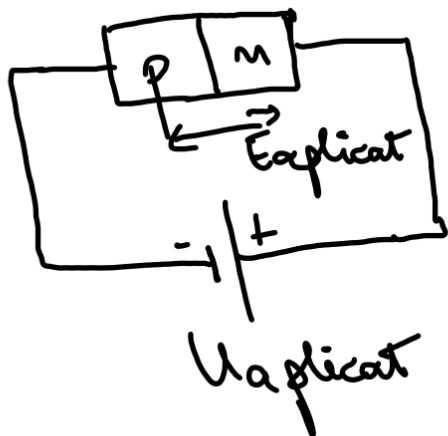
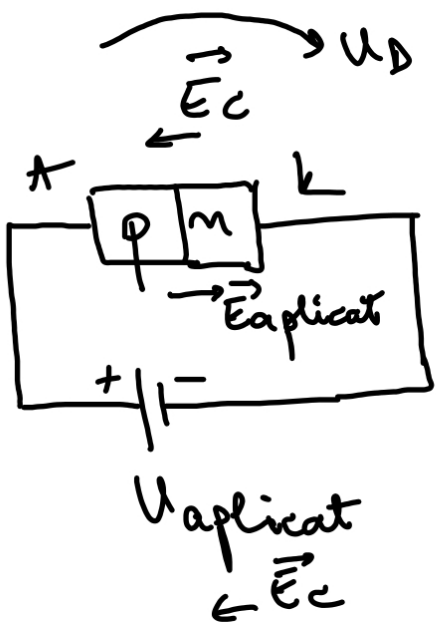
"Bazele electronicii analogice și digitale"



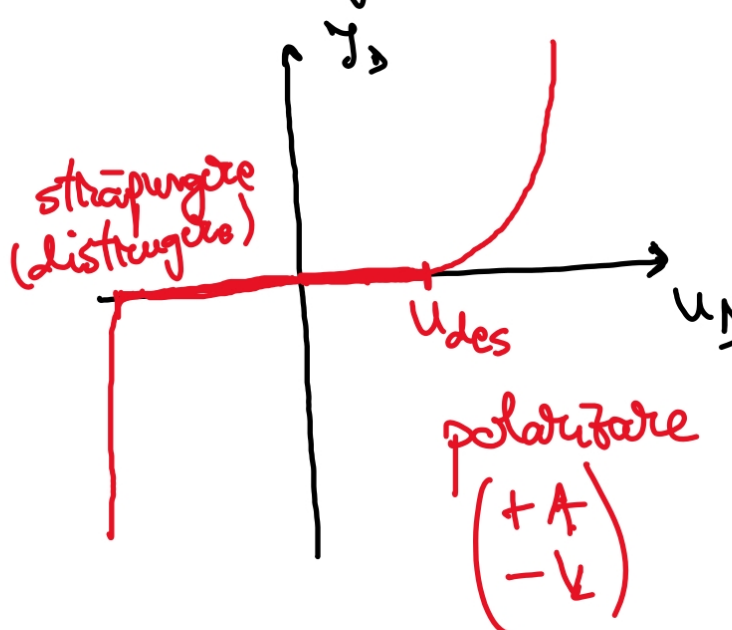
sarcina
spatială
(μm)

zona p: **goluri** ca
zona n: **electroni**

ca purtători majoritari
ca purtători majoritari.



străpungere
(distruge)

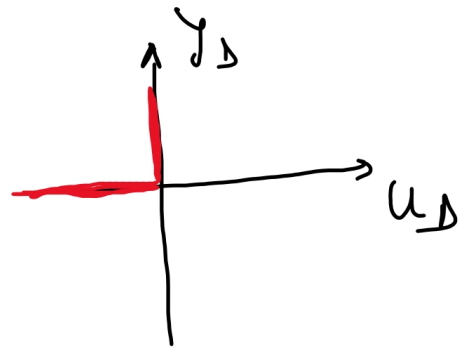
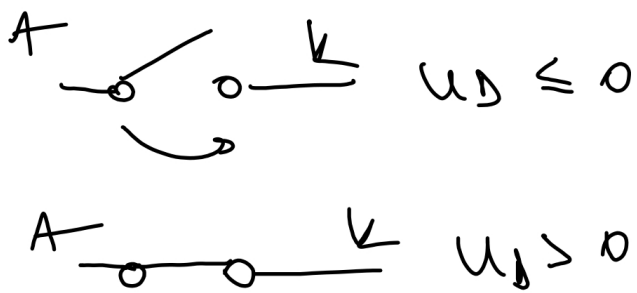


$$J_D = J_S \left(e^{\frac{eU_D}{k_B T}} - 1 \right)$$

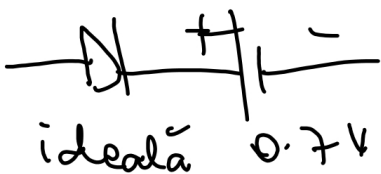
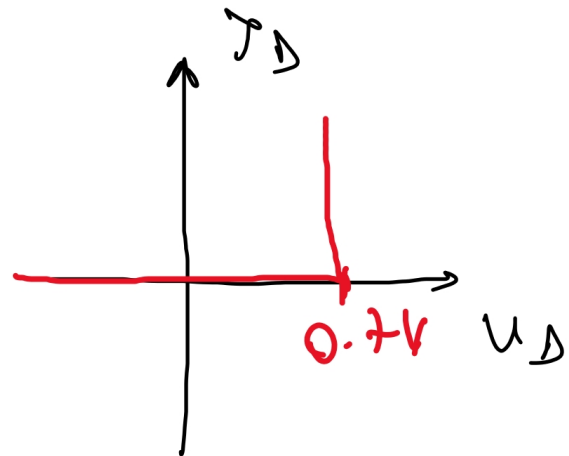
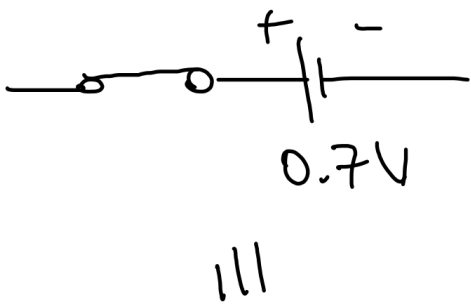
$$\frac{eU_D}{k_B T} \gg 1 \Rightarrow J_D \approx J_S e^{\frac{eU_D}{k_B T}}$$

3 modele idealizate ale diodei:

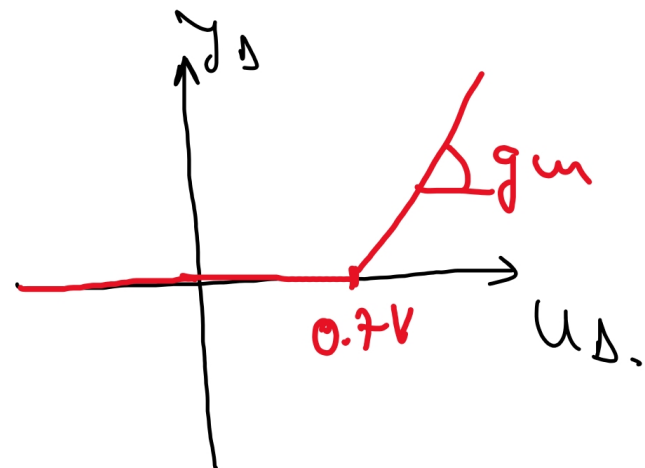
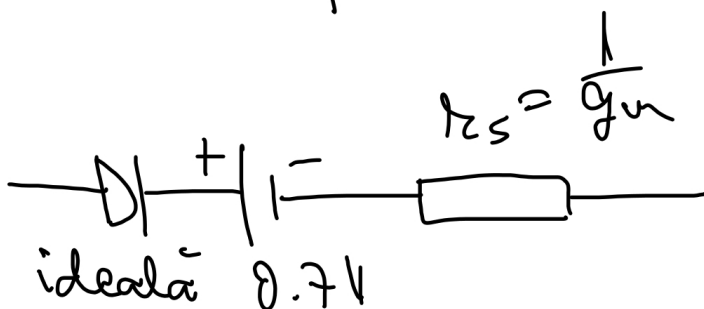
1. Dioda ideală:

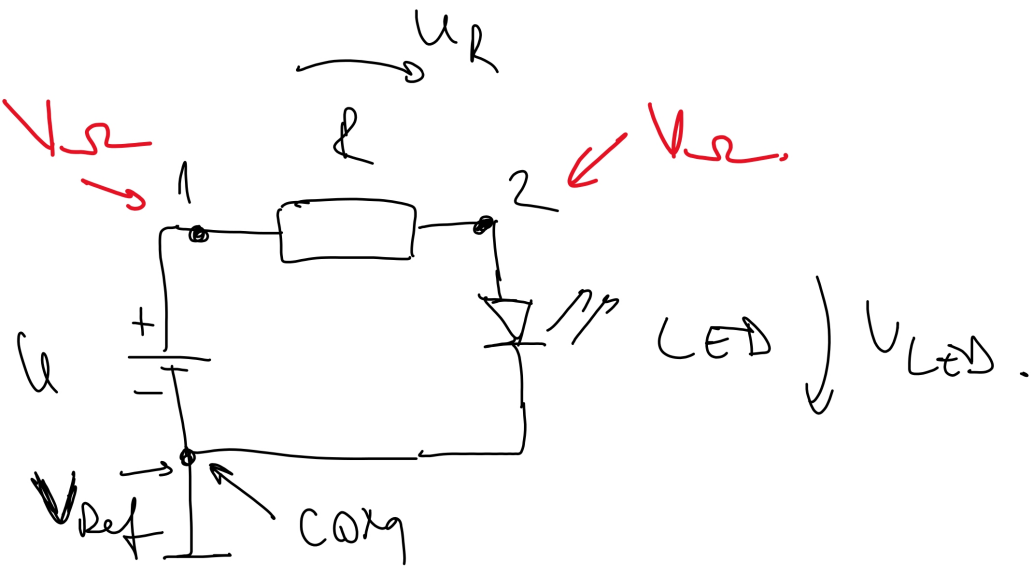


2. Dioda idealizată:



3. Model practic





$$\begin{aligned}
 U_R &= U_1 - U_2 = V_1 - \cancel{V_{ref}} - V_2 + \cancel{V_{ref}} = \\
 &= U_1 - U_2 \\
 U_1 &= U_1 - V_{ref} \\
 U_2 &= U_2 - V_{ref}
 \end{aligned}$$

Jaka $V_{ref} \rightarrow \perp \Rightarrow V_{ref} = 0$.

V_D (V)	I_D (mA)
0	0
0.1	0
0.45	$47 \cdot 10^{-3}$
0.38	0.523
0.63	1.372
0.69	4.311

\Rightarrow

