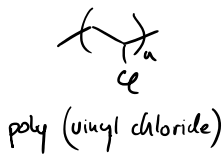
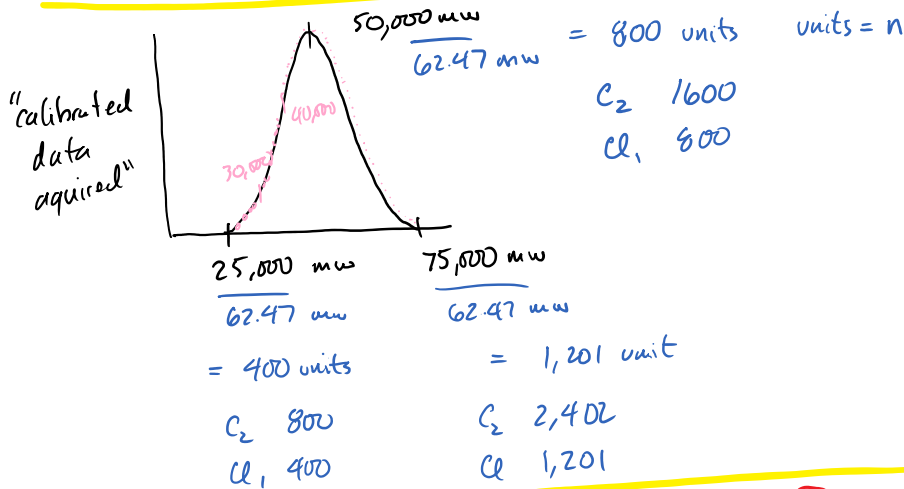
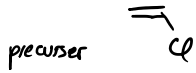


Polymers

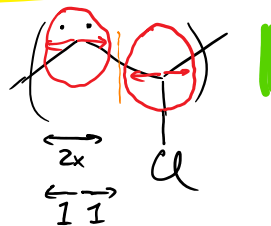


$$\begin{aligned}
 \text{C}_2 & 12.01 \times 2 = 24.02 \text{ mw} \\
 \text{H}_3 & 1.00 \times 3 = 3.00 \text{ mw} \\
 \text{Cl}_1 & 35.45 \times 1 = 35.45 \text{ mw} \\
 & \hline
 & 62.47 \text{ mw}
 \end{aligned}$$



for the 50,000 mw peak. radius 170 pm

$$\begin{aligned}
 C_{\text{radius}} &= 170 \text{ pm} \times 2 \times 1600 \\
 &= 544,000 \text{ pm (picometer)} \\
 &= 5.44 \times 10^{-5} \text{ cm (centimeters)} \\
 &= 544 \text{ nm}
 \end{aligned}$$



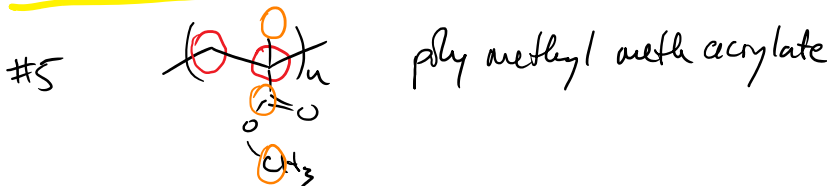
544,000 pm
the polymer

25,000 nm

272,000 pm

75,000 nm

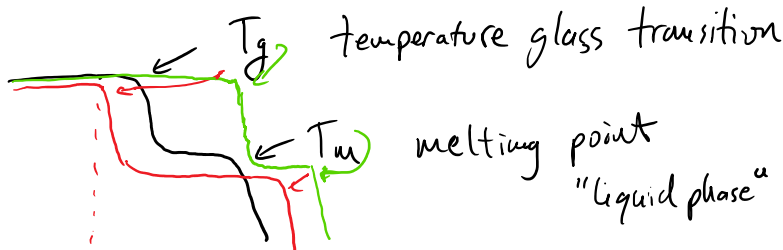
816,680 pm



"fires"

$\sim -50^\circ\text{C}$

"physical property"



if

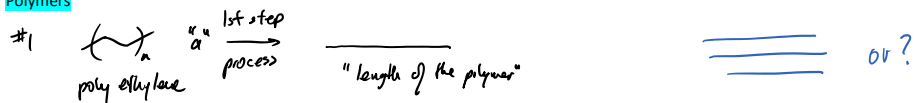
if

if

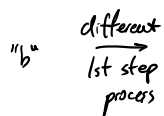
50°C T_g

100°C T_m

Polymers



shorter or longer?



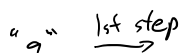
"change"

14

4 24

 $11 \frac{1}{3}^u$

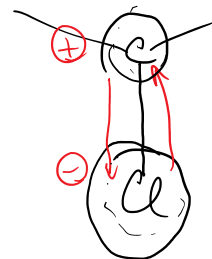
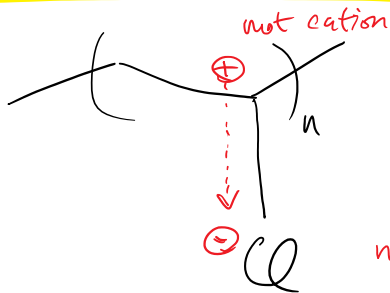
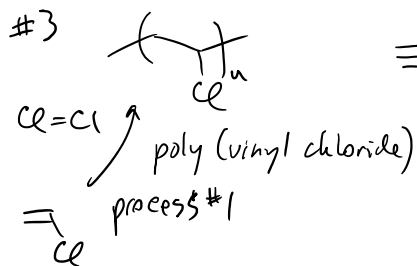
"bigger"



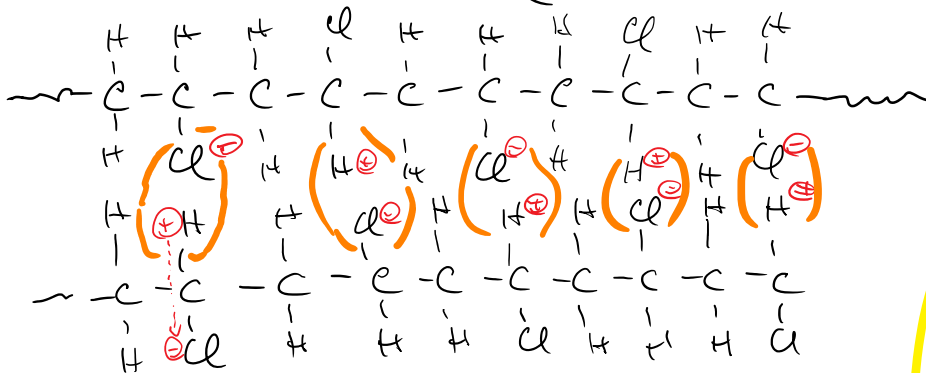
2nd
step →

"cross coupling"

also applies to #2 poly(propylene)



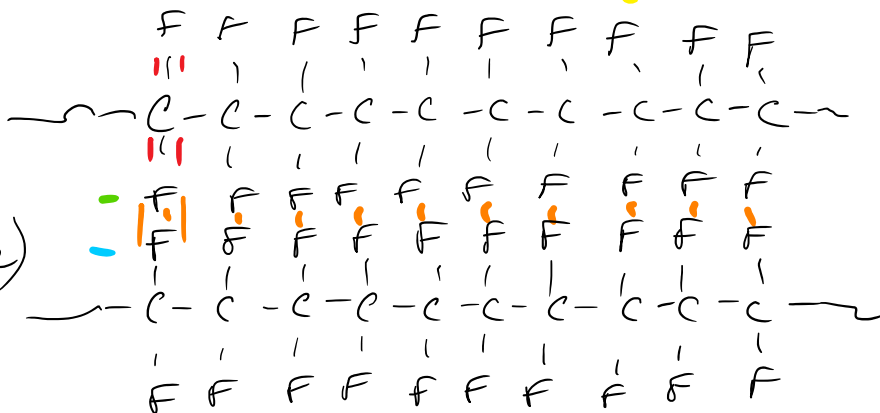
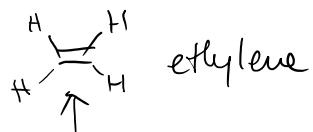
"Symmetric"



"Teflon"

poly (tetra fluoroethylene)

↑ fluorinate

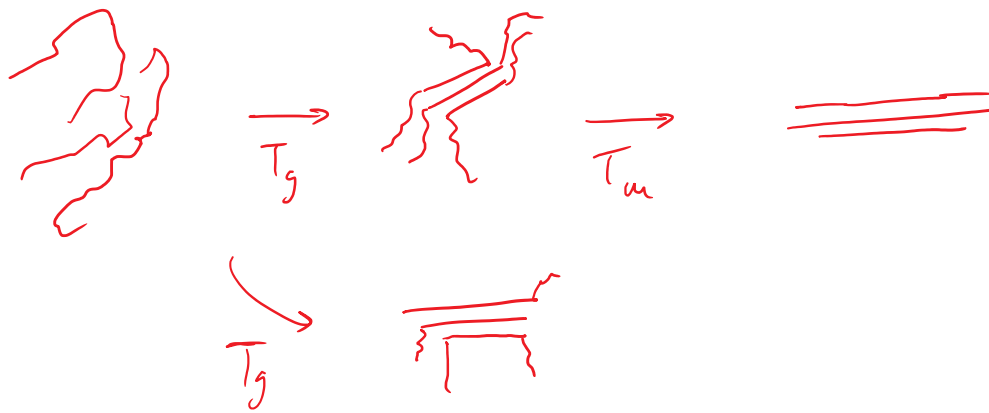
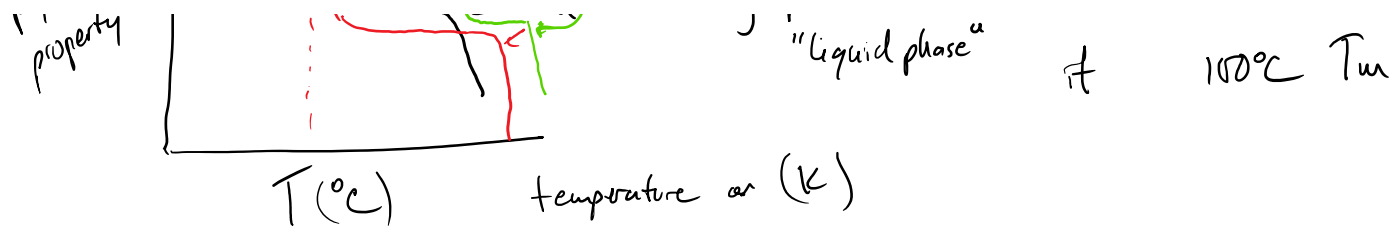


66

" soul structure "

oil → engine

"goal structure"



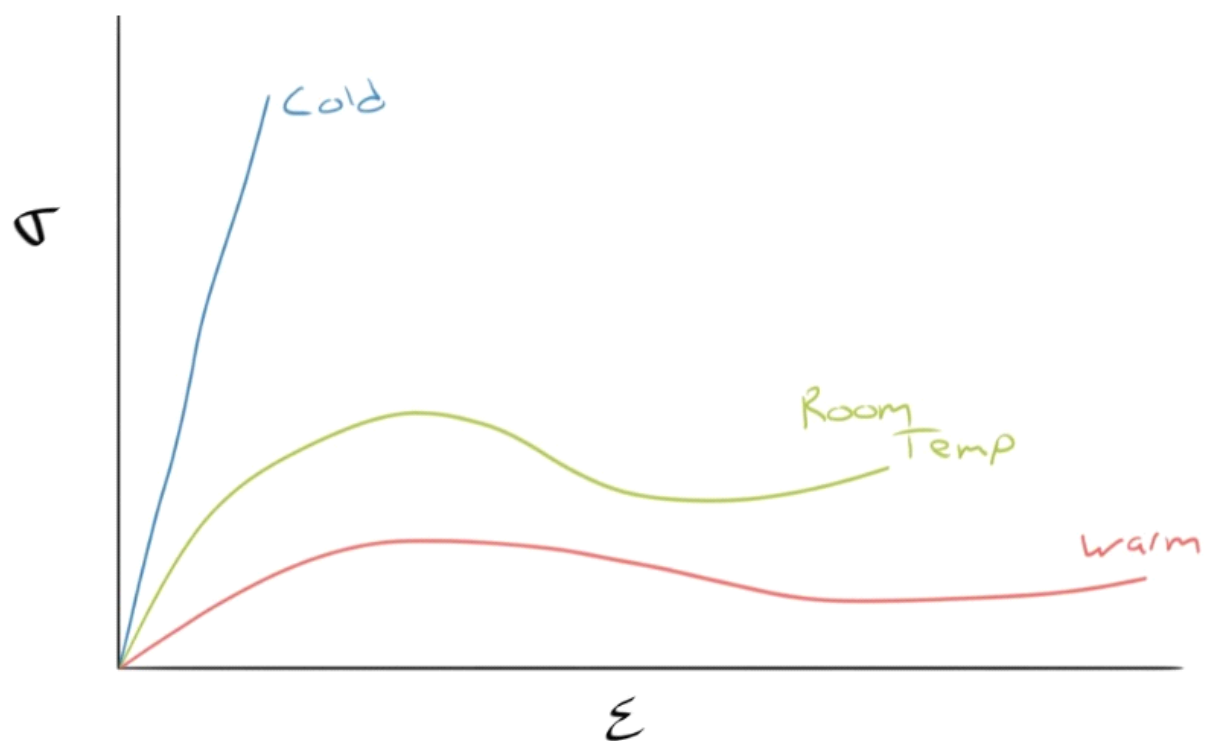


Figure 19. A stress-strain curve for a hypothetical plastic polymer at three temperatures. It is not uncommon for polymers to experience significant changes in mechanical properties with relatively small changes in temperature.

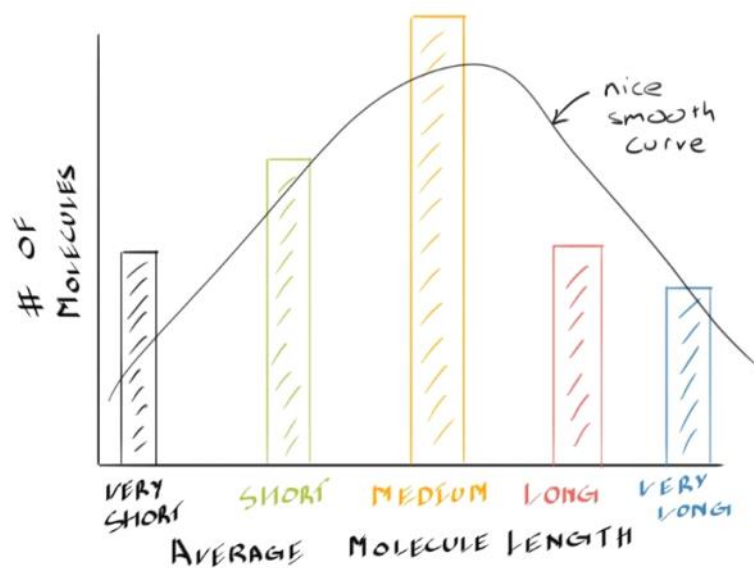
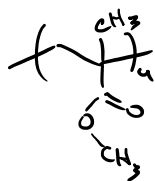


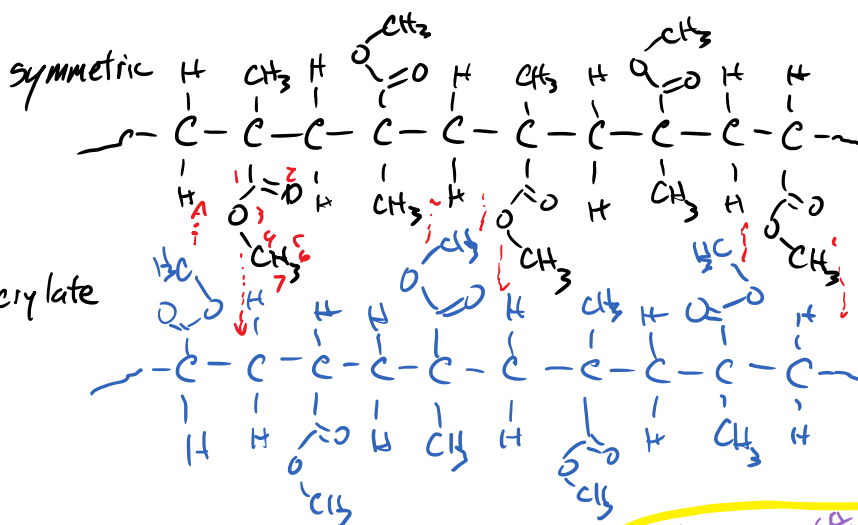
Figure 13. The molecular weight distribution for the hypothetical polymer sample in Figure 12. Our grouping into only five length groupings is very coarse and the actual distribution would be smooth, as shown by the nice smooth curve.

Polymers

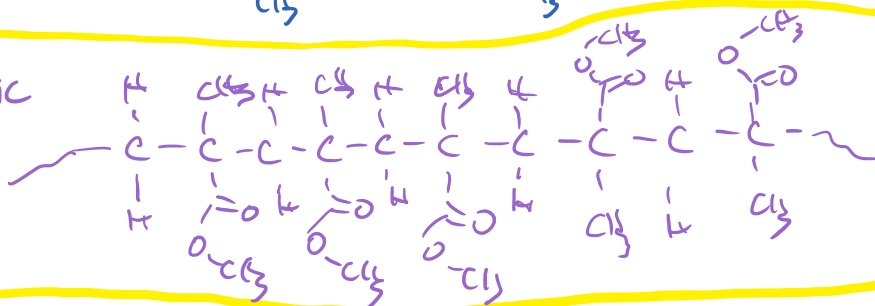
#5



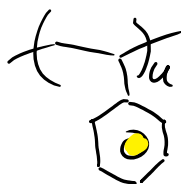
poly methyl methacrylate



asymmetric

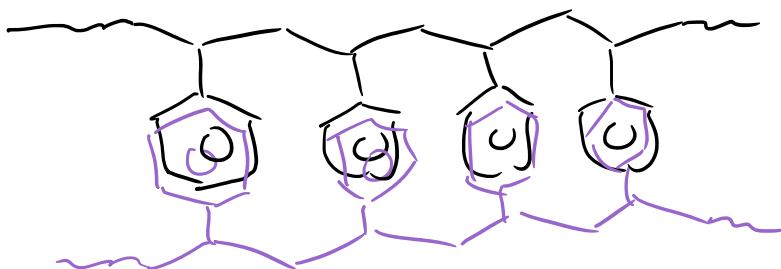
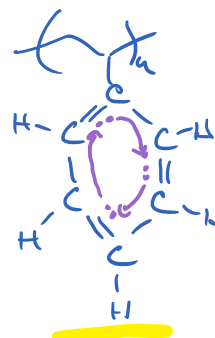
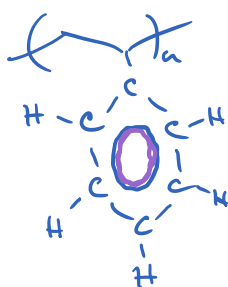
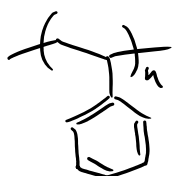


#6



- aromatic ring

poly(styrene)



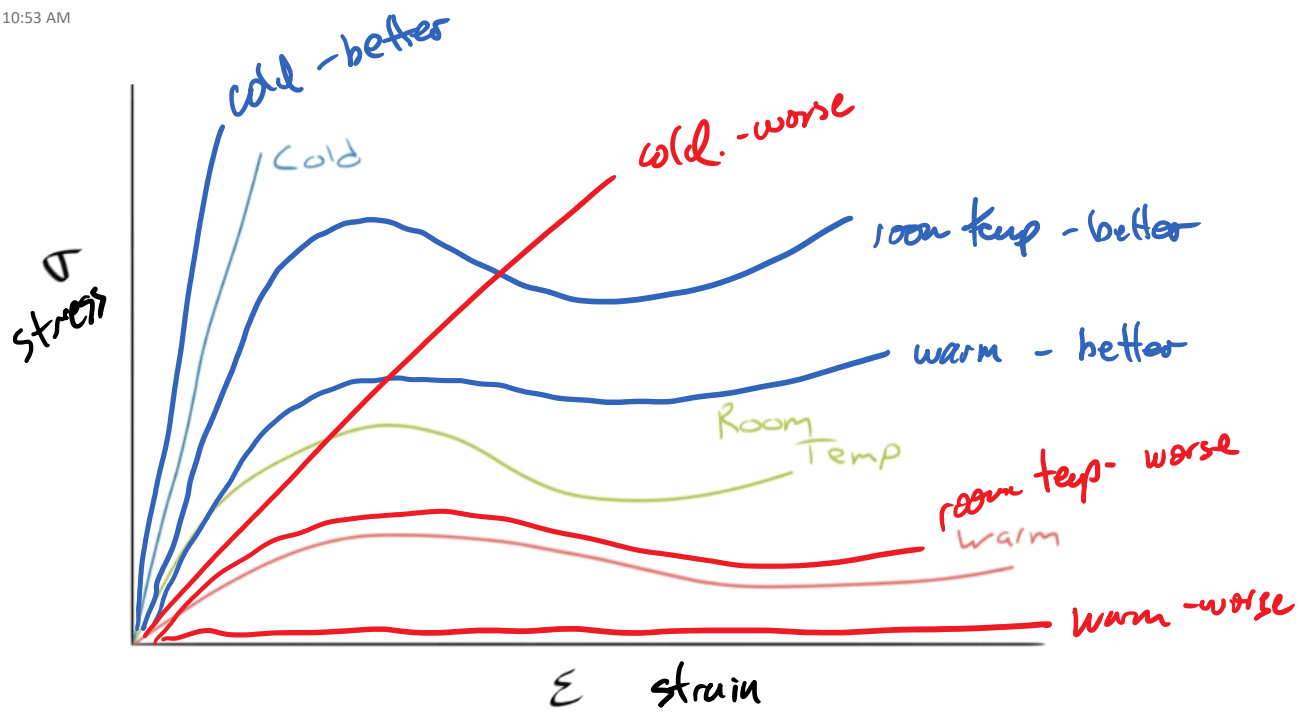


Figure 19. A stress-strain curve for a hypothetical plastic polymer at three temperatures. It is not uncommon for polymers to experience significant changes in mechanical properties with relatively small changes in temperature.