

# CRYSTALLINITY STORAGE MODULUS



Does crystallinity affect storage modulus? Regarding elastic properties, a clear cut correlation has been demonstrated between crystallinity and storage modulus. When restricting on the crystallinity range 50-80%, the elastic modulus is generally supposed obeying a quasi-linear relationship with the crystallinity.



Does crystallinity affect storage moduli in poly (4-methyl-1-pentene)? Crystallinity and temperature dependent modulus in poly (4-methyl-1-pentene) were investigated over a wide temperature range covering glass transition of the amorphous phase. It turns out that the storage moduli of different samples decrease with the increase of crystallinity below  $T_g$ .



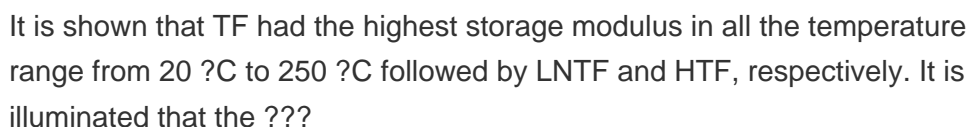
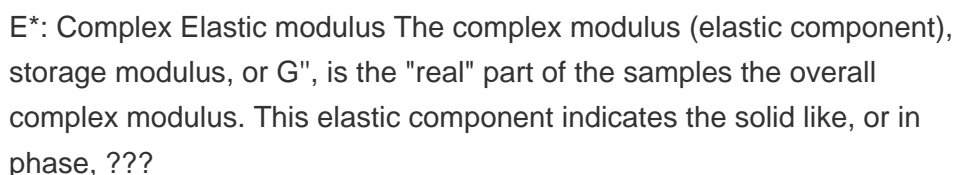
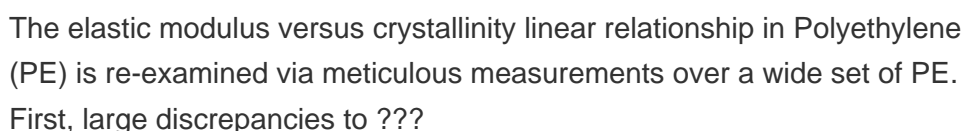
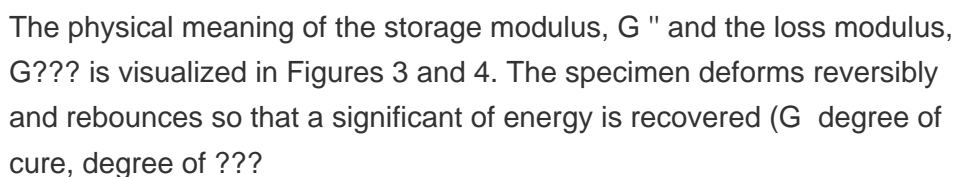
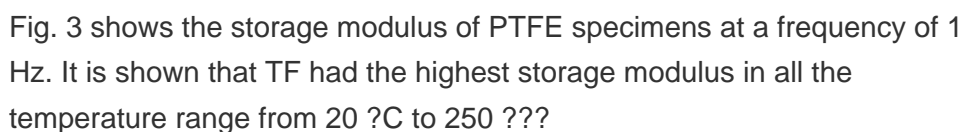
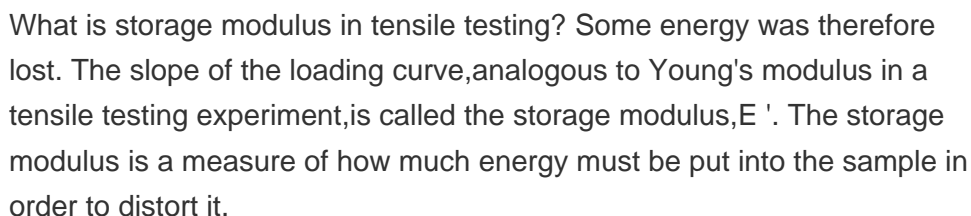
What is the relationship between elastic modulus and crystallinity? The elastic modulus of a set of polyethylenes having various microstructures has been measured at ambient temperature in the same experimental conditions. The linear PE materials have been found to exhibit a quite linear relationship between the modulus and the crystallinity degree.



Do crystalline and amorphous phases have the same storage moduli? The storage moduli of different samples are the same regardless of crystallinity at around 45 °C where the densities of crystalline and amorphous phases are identical. A model considering parallelly arranged crystalline skeleton and amorphous network allows a decomposition of the measured modulus into moduli of both phases.



What is a storage modulus? The storage modulus is a measure of how much energy must be put into the sample in order to distort it. The difference between the loading and unloading curves is called the loss modulus,  $E''$ . It measures energy lost during that cycling strain. Why would energy be lost in this experiment? In a polymer, it has to do chiefly with chain flow.

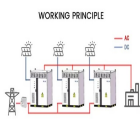


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The crystallinity and storage modulus of samples increased with the nano - TiO<sub>2</sub> content increasing. ,. Thus, acetanilide ???



In this paper the effect of crystallinity and crystalline forms (ratio of the less ordered ????? and the more ordered ?? crystalline forms) of injection moulded Poly(Lactic Acid) (PLA) was ???