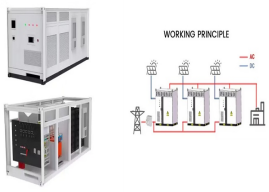
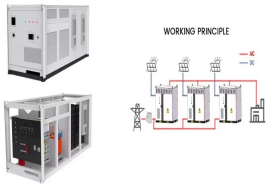
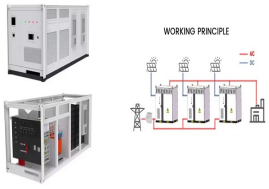
REASON FOR REDUCTION OF STORAGE MODULUS



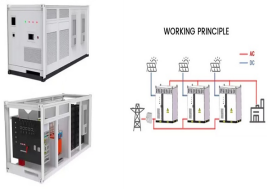
How does storage modulus affect material removal? The developed media behave like an elastic solid as because of G'>G" at different temperatures with a varying frequency that is best suitable for the finishing process. Storage modulus is solely responsible for the maximum material removal because it decides the radial force exerted by abrasive grain on the work surface.



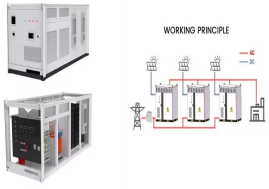
What is a storage modulus? The storage modulus is a measure of how much energy must be put into the sample in order to distort it. The difference between the loading and unloading curves is called the loss modulus,E ". It measures energy lost during that cycling strain. Why would energy be lost in this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



What is the difference between loss modulus and storage modulus? At lower frequency,the storage modulus is lesser than the loss modulus; it means viscous property of the media dominates the elastic property. As the frequency increases,the storage modulus increases; it shows the abrasive media has the capacity to store more energy,and it crosses loss modulus at a point called cross-over point.



How does heat affect loss modulus? Therefore though the material is less stiff/hard,more force is dissipated as heat,increasing the loss modulus. Much less energy is stored since the molecules can move with the force giving a rapid decline in storage modulus.



What is loss modulus? Loss modulus could be understood as a representation of energy dissipated mostly in form of heat when the material is under a stress/strain. As material enters and progress to the rubber-like state, the amount of energy dissipated decrease, meaning more of this energy is stored.

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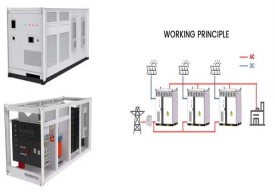
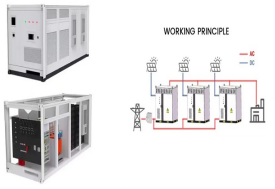
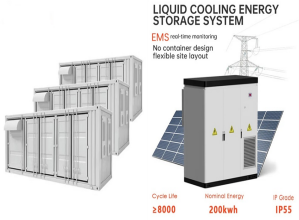


What is storage modulus (E) in DMA? Generally,storage modulus (E') in DMA relates to Younga??s modulusand represents how flimsy or stiff material is. It is also considered as the tendency of a material to store energy .



The storage modulus (G In the case of neat PLA, a sharp reduction occurred at around 50a??70 ?C, which represents the onset of glass transition temperature (T g). After a a?|



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Studies conducted by Davies and Fletcher (1995), Kar et al. (2009a, 2009b), and Sankar et al. (2011) describe the improvement in the storage modulus and reduction in the free space between the polymer chains a?|

E=/ /, , Ea?? , E, /(Tangential modulus, E t)a?? a?|

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Whilst I understand Storage modulus and Young's modulus are not the same thing, I would have expected them to display similar relationship in terms of an increase or decrease in the a?|

Below the crossover point, storage modulus dominates over loss modulus, thus giving a value of tan I' < 1. In Figure 4.6, TGA curves for Eudragit L100-55 revealed a reduction of mass of a?|

storage modulus,a??,,, i 1/4 ?

,a?? i 1/4 ?,i 1/4 ? a?? i 1/4 ? a?|