

A TECHNIQUE TO OBTAIN HIGH FILLED EPOXY COMPOSITES

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Abstract: Generally when large amounts of powders are used to fill epoxy resin their particles are aggregating leading to clusters which change the mechanical properties. The question is how to obtain uniform dispersions of filler's particles. The use of CNT or ferrite is changing the electro-magnetic properties of the polymer so it is necessary to increase their concentrations. This study was carried out taking into account the behavior of clay or talc when they are dispersed in epoxy. The use of clay or talc dispersion in epoxy as media to disperse CNT or ferrite allows their uniform dispersion even for large amounts, larger than the unit. Plates of composites were formed in order to test the method and to emphasize the effect of high filled epoxy on the composites' properties. Fabrics of carbon fiber and kevlar fiber were used to reinforce the plates. Various architectures of reinforcement layers were proposed.

Key words: fabric, filled epoxy, CNT, ferrite, clay