291h Functionalization of Carbon Nanofibers to Improve Their Dispersion in Both Epoxy Resin and Vinyl Ester Resin

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Polymer-carbon nanofiber composites have been investigated in detail because they combine desirable combined properties of inorganic materials and polymer. While these materials have great potential, there are difficulties incorporating nanofibers into polymer matrix due to mismatch between fiber surface and matrix. As a result, the composite materials do not exhibit expected properties. This poster will focus on a project aimed at improving properties of carbon nanofiber resin systems. Specifically, nanofibers were functionalized with reactive groups that can participate in curing reaction, which thus allows fibers to be covalently bound to the polymer matrix. This presentation will mainly focus on characterization of the functionalized carbon nanofiber and impact of surface functionalization on dispersion of carbon nanofiber within the polymer matrix. In addition, the impact of surface chemistry and fiber loading on composite properties will be discussed.