

## **291w Formation of Polymer-Carbon Nanocomposites Via in-Situ Polymerization**

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While carbon nanofiber reinforced polyimides exhibit considerable potential, a critical issue is dispersion of fibers and compatibility between fiber and polymer matrix. This paper will present method to form composites of fibers functionalized with reactive diamine groups through by in-situ polymerization or blending. The impact of functional group, composite formation method, and fiber loading on the mechanical and thermal properties of polyimide composites will be presented. Preliminary results indicate that composites reinforced with functionalized fibers exhibited increases in tensile moduli and glass transition temperature.