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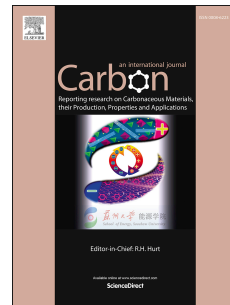
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Quantitative determination of size and properties of interphase in carbon nanotube based multiscale composites

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KEYWORDS: carbon fiber, steel and brass wire, carbon nanotube, multiscale composite, interphase, interfacial shear strength

ABSTRACT

Experimental investigations are carried out to quantify the effect of filler composition, filler diameter and carbon nanotube (CNT) grafting on the properties of interphase in epoxy matrix composites. To this end, epoxy is reinforced with stainless steel (SS) wire, brass wire(s) and carbon fiber (CF) before and after CNT growth on their surface. Surface morphology, elemental composition and thickness of interphase in unsized (ar) and CNT grafted composites is studied using scanning electron microscopy (SEM) and energy dispersive X-ray spectroscopy (EDS). The size and mechanical properties of the interphase

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