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Electrical double percolation and carbon nanotubes distribution in solution processed immiscible polymer blend

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Abstract: Carbon nanotubes (CNT) were dispersed in immiscible (50/50vol/vol) polycarbonate (PC)/polystyrene (PS) blend by solution processing. The microstructure, electrical properties and conduction mechanism of the blend were investigated as function of CNT content. Optical microscopy and transmission electron microscopy were used for microstructure analyses. At low nanofiller loadings, the PC/PS blend was found to exhibit a phase- separated morphology with a domain size in the range of tens of microns. The location of ...