291t Biomedical Applications of Layer-by-Layer Assembled Carbon Nanotube/Polyelectrolye Multilayer Composites

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Layer-by-layer (LBL) assembled carbon nanotube (CNT) composites are a class of nanomaterial fabricated from chemically modified CNTs and polyelectrolyte polymers. Characterized by alternating adsorption of complementary materials, LBL assembly produces thin CNT composite films that exhibit high structural homogeneity and interconnectivity and possesses exceptional mechanical properties. Such CNT thin films have attracted research interest in developing light-weight and ultra-strong materials. Beside high strength and flexibility, CNTs' good electrical conductivity, chemical stability, and affability for chemical functionalization also make LBL assembled CNT composites very attractive for biomedical applications. We report here the biocompatibility of these composites with several mammalian cell lines and their potential biomedical applications.