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(54) **Title:** NANOTUBE DISPERSANTS AND DISPERSANT FREE NANOTUBE FILMS THEREFROM

(57) **Abstract:** A degradable polymeric nanotube (NT) dispersant comprises a multiplicity of NT associative groups that are connected to a polymer backbone by a linking group where there are cleavable groups within the polymer backbone and/or the linking groups such that on a directed change of conditions, bond breaking of the cleavable groups results in residues from the degradable polymeric NT dispersant in a manner where the associative groups are uncoupled from other associative groups, rendering the associative groups monomelic in nature. The degradable polymeric nanotube (NT) dispersant can be combined with carbon NTs to form a NT dispersion that can be deposited to form a NT film, or other structure, by air brushing, electrostatic spraying, ultrasonic spraying, ink-jet printing, roll-to-roll coating, or dip coating. The deposition can render a NT film that is of a uniform thickness or is patterned with various thicknesses. Upon deposition of the film, the degradable polymeric nanotube (NT) dispersant can be cleaved and the cleavage residues removed from the film to yield a film where contact between NTs is unencumbered by dispersants, resulting in highly conductive NT films.

