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(54) **SURFACE COATING PROCESS**

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See application file for complete search history.

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(57) **ABSTRACT**

A method of forming a film is provided. Nanoparticles are deposited on a surface of a substrate using a liquid deposition process. The nanoparticles are linked to each other and to the surface using linker molecules. A coating having a surface energy of less than 70 dyne/cm is deposited over the film to form a coated film. The coated film has an RMS surface roughness of 25 nm to 500 nm, a film coverage of 25% to 60%, a surface energy of less than 70 dyne/cm; and a durability of 10 to 5000 microNewtons. Depending on the particular environment in which the film is to be used, a durability of 10 to 500 microNewtons may be preferred. A film thickness 3 to 100 times the RMS surface roughness of the film is preferred.

25 Claims, 17 Drawing Sheets