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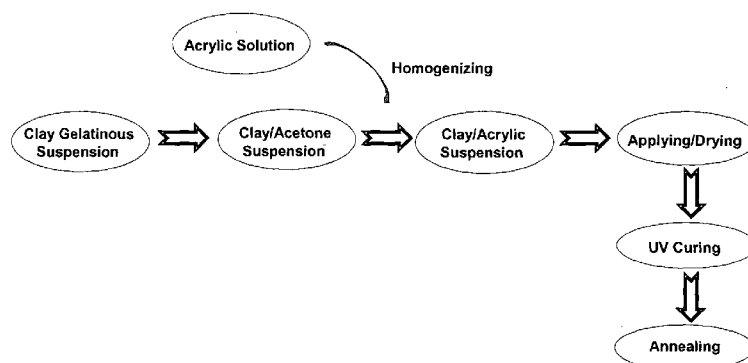
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(54) Title: A LAYERED SILICATE/POLYMER COMPOSITE AND A METHOD OF FORMING THE SAME

FIG. 1



(57) Abstract: The present invention relates to a method for forming a layered silicate/polymer composite, the composite comprising individual exfoliated silicate layers separated in a continuous polymer matrix, wherein the polymer is a hydrophobic polymer, the method comprising: exfoliating sheet silicate in water to form a silicate suspension; replacing the water in the silicate suspension by an organic solvent to form a silicate/organic solvent suspension; contacting the silicate/organic solvent suspension with a solution of a hydrophobic polymer precursor in an organic solvent to form a silicate/polymer precursor suspension; coating the silicate/polymer precursor suspension on a substrate; removing the organic solvents; curing the hydrophobic polymer precursor of the coating of the silicate/polymer precursor; and annealing the cured coating to form the layered silicate/polymer composite on the substrate.