Superhydrophobic Textile

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There are some kinds of waterproof textiles in Colombia that are limited to the quantity and type of substances they repel, between 80 and 90 % allowing a few drops of liquid to be absorbed by the textile, since, the angle of contact that is generated between drop and surface is not enough to repel the liquid. Under the criteria previously described, a cotton - polyester textile is trying to be modified by adding two nanoparticles: graphene, making changes in Dip-Pad-Dry's technique and doing a later addition of nanofilaments of silicone, looking for the obtention of some superhydrophobic properties. First of all is to use Hummers's method for the graphite oxidation to graphene and later Dip-Pad-Dry's method to implement a water dispersion of graphene on the substratum [(Shateri-Khalilabad & Mohammad Esmail Yazdanshenas, 2013) (Fortunato, Lutz-Christian Gerhardt, & Stefan Seeger, 2008)] And a later treatment in order to obtain silicone nanofilaments adhered to the system cotton - polyester-graphene. Expecting to obtain a textile material which acquires properties of superhydrofobicity with these additional nanocharges and top to the acquaintances nowadays.

Awards Won: