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Superhydrophobic/hydrophobic coatings with fluorinated and non-fluorinated diatomaceous earth particles

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Superhydrophobic/hydrophobic coatings were made using Fluorinated (FS) and Non-Fluorinated (NFS) Silane treated Diatomaceous Earth (DE) with different polymeric resins/binders. These coatings have been characterized with contact angle measurements, scanning electron microscopy and thermogravimetric analysis. Contact angles greater than 150° were attainable if the particles were sufficiently coated with fluorinated and non-fluorinated coupling agents and also if there were enough particles in the coatings. The critical particle loadings depended on the resin/binder system used. The behavior of these surfaces mimics that from, for example, the lotus leaf as they had low surface energies and also appropriate nano-micro structures.

Biography

Helanka J Perera has completed her PhD from Oklahoma State University, USA and is currently an Chemistry Assistant Professor in Maths and Natural Science Department at Abu Dhabi Women's College, UAE. Her research interests are in material science, surface modification on micro and nanomaterials, superhydrophobicity, hydrophobicity, polymer and surface characterization.

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