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Super-hydrophobic polymer coating materials based on PS/SiO₂

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Super-hydrophobic coating materials used in high technology have been shown to be of high relevance in several technological applications such as polymers and composites, anti-corrosion metals, glass and ceramic water repellent, among others. Super-hydrophobic surfaces, hydrophobic fabrics, water-repellent materials and super-hydrophobicity are among the most widely used terms in the scientific literature. In this work, super-hydrophobic nano-composites were obtained which were based on polystyrene core-shell particles (PS/SiO₂). The angle of contact between the drop of water and surfaces of the materials (polymers, metals and ceramics), was measured by the inclination of the drop, giving an indication of the wettability of surfaces coated with the PS/SiO₂ composites (polymers, metals and ceramics). The influence of the drying temperature and percentage of SiO₂ on the wettability of the nano-composite coating were investigated. The behavior of the wet surface of the composite PS/SiO₂ obtained depends, crucially, on the drying temperature and the proportion of SiO₂ nanoparticles relative to polystyrene.

Biography

I C de Sousa is a student at Federal University of Campina Grande - PB/Brazil, under the supervision of Prof. Ariosvaldo A B Sobrinho.

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