

A NOVEL COMPOSITE HAVING SUPER HYDROPHOBIC PROPERTY

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Substitution compound of hydrogen atom of hydrocarbon by fluorine atom decreases its surface energy because of the strong covalency and small polarizability of the C-F bond. A typical hydrophobic material is polytetrafluoroethylene (Teflon).

The surface energy of material depends on the character of terminal group of the material, and decreases in order $-\text{CH}_2- > -\text{CH}_3 > -\text{CF}_2- > -\text{CF}_3$ and, the critical surface tension of $-\text{CF}_3$ is 6 dyn/cm.

Lately, we obtained a new result which the surface energy of solid surface is proportional to the surface fluorine atomic ratio on the surface. A contact angle of water on the surface of a new composite, which are made of highly fluorinated polymer and nickel was over 170° (for example Nickel plating : 67° , Teflon : 110°).

In this report , the preparation and surface property of new super hydrophobic metal-composite will be discusses.