

The noble method for superhydrophobic thin film coating

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A very simple and cost-effective method for fabrication of SiO_x-incorporated diamond-like carbon (DLC) thin films at a preparation temperature of less than 200°C was developed. Since DLC coating can be prepared not under vacuum but atmospheric conditions without any carrier gas flow, not only wafers but also powderic substrates can be used for DLC coating. Formation of DLC coating could result in appearance of superhydrophobic behaviors, which was sustained in a wide range of pH (1~14). DLC-coated surfaces selectively interacted with toluene in a toluene/water mixture. These results imply that our preparation method of the DLC coating can be useful in many application fields such as creating self-cleaning surfaces, and water and air purification filters.

Keywords: superhydrophobicity, hydrophobic, Diamond-like carbon, DLC coating