Fabrication of nano-scale superhydrophobic surfaces on silicon substrates using direct laser interference patterns(DLIP)

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Abstract

The scale of the structure is a key parameter of the superhydrophobic surfaces. In this work, DLIP are used to fabricate nanostructures on silicon substrates that have been processed with microstructures to make multiscale superhydrophobic surfaces. By adjusting several key process parameters, the depth, spacing, and other geometric shapes of the prepared nanostructures are controlled, and finally the manufacture of multi-scale structures with fixed specifications is realized. In this work, we use DLIP as a fabrication method for nanostructures in multi-scale structures. This method has the advantages of repeatable large-area processing, fast processing speed, high processing accuracy, and controllable structure.

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