The replication of micro-riblets on ship hulls for drag reduction applications

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Desired higher ship speeds can be achieved using many performance enhancement techniques. One of the techniques is drag reduction of ships' hulls by imbuing their surfaces with hydrophobic properties This paper presents an alternative method of fabricating micro-riblets using laminate transfer molding to modify painting morphology for micro-riblets' replication on ships' hulls. A performance test of these micro-riblets is also performed. The results show that micro-riblets can be replicated from the pattern to the ships' hulls. The geometries of micro-riblets are verified, which shows good agreement with the pattern. The performance of the fabricated micro-riblets was verified to decrease drag on the ship. As a result, ships' speeds increased under similar propulsion power. The significant effect of micro-riblets is obtained with these higher speeds.