Short Communication

One Step Preparation of Superhydrophobic Surface on Copper Substrate with Anti-Corrosion and Anti-Icing Performance

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Copper stearate coating was fabricated on a copper substrate through a simple solution immersion method at room temperature. The surface exhibited grass-like structure, which endowed it with superhydrophobicity and the water contact angle was about 152.3°. Electrochemical measurement revealed that this superhydrophobic surface (SHS) showed better corrosion resistance than bare copper surface and the inhibition efficiency of this SHS was about 95.91%. Moreover, the SHS demonstrated the reduction in adhesion between ice and surface, thus allowing for easy removal of ice. This method may provide a simple way to design SHS with corrosion resistance and anti-icing performance on metal surfaces.

Keywords: Copper stearate coating; Corrosion resistance; Electrochemical measurement; Anti-icing

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