

Study on Hydrophilicity of Anodic Aluminum Oxide Templates with TiO₂-NTs

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Abstract : This paper aims to discuss the hydrophilicity about the anodic aluminum oxide (AAO) template with titania nanotubes (NTs). The AAO templates with pore size diameters of 20-250 nm were generated by anodizing 6061 aluminum alloy substrates in acid solution of sulfuric acid (H₂SO₄), oxalic acid (COOH)₂, and phosphoric acid (H₃PO₄), respectively. TiO₂-NTs were grown on AAO templates by the sol-gel deposition process successfully. The water contact angle on AAO/TiO₂-NTs surface was lower compared to the water contact angle on AAO surface. So, the characteristic of hydrophilicity was significantly associated with the AAO pore size and what kinds of materials were immersed variables.

Keywords : AAO, nanotube, sol-gel, anodization, hydrophilicity

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