

ABSTRACT

An amphiphilic siloxane gel, comprising an active species which is one of or a mixture of several organic bases having quaternary ammonium salt groups or alkylphosphonium hydroxide groups. Raw materials for the gel further comprise cyclic siloxane and a lubricating liquid. The amphiphilic siloxane gel uses simple materials, is simple and feasible in terms of synthesis process, green and environmentally-friendly, has high yield and a low preparation cost, and is easy to promote; moreover, the amphiphilic siloxane gel has adjustable surface adhesion and mechanical performances, can effectively reduce the adsorption of marine fouling organisms, and shows good antibacterial performance due to the introduction of positive charge groups; and the gel can regulate the chemical balance of catalytic degradation by means of regulating and controlling the content of the active species and the swelling degree of the functional lubricating liquid so as to control the self-polishing rate of a coating, and has a wide application prospect in the aspect of marine organism fouling resistance.

FIG. 3