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[\[Image PDF \(458K\)\]](#) [\[References\]](#)**Inhibition of Biofilm Formation using Newly Developed Coating Materials with Self-cleaning Properties**

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Abstract:

The purpose of this study was to evaluate the inhibition of biofilm formation on newly developed coating materials with self-cleaning properties. A series of experimental coating materials containing fluoroalkylated acrylic acid oligomer (FAAO) were applied to resin composite substrates. The surfaces of the coating materials were analyzed by X-ray photoelectron spectroscopy (XPS) and contact angle measurement. Biofilm formation on the surface was assessed using *Streptococcus mutans* biofilms inside an oral simulator *in vitro*. The results indicated that an increase in the concentration of FAAO in the coating materials enhanced surface hydrophilicity and oil-repellency. Biofilm assays demonstrated that the amount of biofilm retained on the coating materials gradually decreased when the concentration of FAAO increased in the materials. It was concluded that the coating materials incorporated with FAAO possessed self-cleaning properties and displayed signs

of inhibiting biofilm formation on their surfaces.

Key words:

[Coating material](#), [Fluoroalkylated acrylic acid oligomer](#), [Biofilm](#)

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