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## Proposing a sustainable strategy for the fabrication of robust anti-soiling coatings with enhanced antibacterial attributes for non-absorbent substrates

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Author(s): Nikolaos D Papadopoulos\* and Polyxeni Vourna

In this paper, we propose a convenient methodology for fabricating a generic structure toward developing a robust, easy-to-clean transparent coating with inherent antibacterial properties for smooth, non-absorbent surfaces, such as glass and plastics. A two-step coating comprising an organopolysilazane primer and an alkoxy silane topcoat, based on positively charged quaternary ammonium salts, is proposed. The proposed coating exhibits excellent antibacterial activity against Gram-positive and Gram-negative bacteria. The proposed coating exhibits excellent anti-soiling properties, as demonstrated by the results of the soiling test. The proposed coating exhibits excellent anti-soiling properties, as demonstrated by the results of the soiling test.

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