

Research title Preparation of titanium dioxide (TiO₂) thin films to inhibit bacteria prepared by spray pyrolysis technique

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Abstract

In the present, titanium dioxide (TiO₂) is coated onto the materials (e.g. glass ceramic) to inhibit bacteria. TiO₂ has become a popular photocatalyst material for both air and water purification. It has been also shown to be very active for bacterial destruction even under UV light. The photocatalytic of TiO₂ involves the light-induced catalysis of reducing and oxidizing reactions on the surface of materials. The spray pyrolysis technique for material synthesis in thin-film configuration is an interesting option due to the use of inexpensive precursor materials and low-cost equipments suitable, which is for large-area coatings. In this research, TiO₂ thin films were deposited onto glass substrates using spray pyrolysis technique. Escherichia coli (E.coli) was used as testing bacteria.

Keywords: Titanium dioxide photocatalyst / Anti-bacterial / Spray pyrolysis technique