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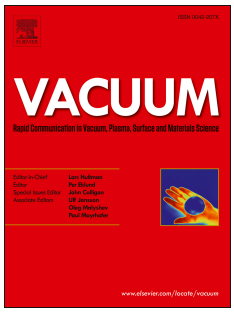

Photocatalytic visible-light active bismuth tungstate coatings deposited by reactive magnetron sputtering

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Photocatalytic visible-light active bismuth tungstate coatings deposited by reactive magnetron sputtering

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Abstract

Photocatalytic bismuth tungstate thin films with visible-light activity were deposited via reactive pulsed DC magnetron sputtering onto soda-lime glass substrates. Varying the power delivered to the bismuth and tungsten targets allowed control over the Bi/W ratio in the coatings, and therefore the structural and optical properties of the coatings. As-deposited coatings were characterised with amorphous microstructures and were annealed at 673K to develop crystallinity. The visible light photocatalytic activity of the coatings, which was analysed using the methylene blue degradation test, was found to be superior to that of a commercial titania-based photocatalytic product. \

Keywords

Bismuth tungstate; magnetron sputtering; photocatalytic coatings; visible light activity; methylene blue.