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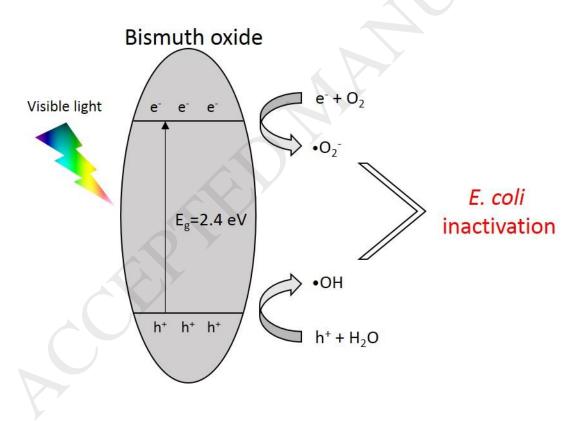
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Graphical abstract



Research paper highlights:

- Bismuth (complex) oxide and TiO₂ coatings were deposited by magnetron sputtering;
- Use of oscillating bowl enabled uniform coverage of 2mm glass beads;
- Bismuth oxide and tungstate showed high antimicrobial activity under visible light;
- Bismuth oxide prevented the adhesion of microorganisms to beads;

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