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## **TiO<sub>2</sub>-doped WO<sub>3</sub> coated on charcoal activated with increases photocatalytic and antibacterial properties synthesized by microwave-assisted sol-gel method**

TiO<sub>2</sub>-doped WO<sub>3</sub> coated on CA were prepared by microwave-assisted sol-gel method. The calcined at the temperature of 500 °C for 2 h with a heating rate of 10 °C/min were characterized by XRD, EDS and SEM. The photocatalytic and an antibacterial activity of TiO<sub>2</sub>-doped WO<sub>3</sub> coated on CA were investigated by means of degradation of a MB solution and against the bacteria E.coli respectively. The effects of WO<sub>3</sub> concentration were discussed. The 1mol%WO<sub>3</sub>-doped TiO<sub>2</sub> coated on CA seems to exhibit the higher photocatalytic and an antibacterial activity than other samples. The TiO<sub>2</sub>-doped WO<sub>3</sub> coated on CA are expected to be applied as a materials photocatalyst for the water purification.

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