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| **Research Title** | The Degradation Efficiency Study of Paraquat by Photocatalytic Process |
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This research paper obtained a simplified sol-gel preparation technique for a hybrid activated carbon/titanium dioxide (AC/$TiO_2$) photocatalyst. Scanning electron microscopy (SEM), X-ray diffraction (XRD), Brunauer-Emmett-Teller (BET) analysis and Iodine number were utilized to examine the surface properties of the AC/$TiO_2$ photocatalyst. The results showed that the prepared AC/$TiO_2$ had good physical properties as photocatalyst for photocatalytic process.

The photocatalytic activity of the AC/$TiO_2$ photocatalyst was evaluated by the degradation of paraquat in synthetic wastewater with UVA light intensities equal 35 $\mu W/cm^2$. The results indicated that the photocatalytic process with the AC/$TiO_2$ photocatalyst under UVA light source could degrade paraquat in synthetic wastewater with various initial concentrations of paraquat including 10, 50, 100 and 150 mg/L. The degradation efficiencies in corresponding with the teted initial conditions were 98.55%, 99.75%, 99.47% and 96.43%, respectively. The overall results showed that the prepared AC/$TiO_2$ were suitable for photocatalyst under UVA irradiation.