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### **A new portable reactor for photoelectrocatalytic system on organic compound rhodamine B degradation**

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The aim of this research was to design reactors of Ultra Violet Black Light Blue (UV-BLB) and Ultra Violet Light Emitting diode (UV-LED)-based portable photoelectrocatalytic. This reactor was used to test the performance of the TiO<sub>2</sub>/Ti electrode in degrading organic compound of Rhodamine B (RhB). Synthesis of TiO<sub>2</sub>/Ti was conducted by anodizing. Furthermore, the degradation test of compound of RhB photoelectrocatalytic was done using reactors of UV-BLB and UV-LED. Characterization results of TiO<sub>2</sub>/Ti using X-Ray Diffraction (XRD) showed the formation of anatase TiO<sub>2</sub> crystals. While the characterization results of surface morphology of TiO<sub>2</sub>/Ti using Scanning Electron Microscopy (SEM) showed nano tube structures. Performance test of the reactor by measuring the photocurrent response showed TiO<sub>2</sub>/Ti electrode were more active when using light irradiation of UV-BLB compared to UV-LED. Degradation of RhB using TiO<sub>2</sub>/Ti electrodes by light irradiation of UV-BLB had better activity than UV-LED.

#### **Biography**

Maulidiyah has completed her PhD at the University of Indonesia, Jakarta. She is the Head of Organic Laboratory at the Universitas Halu Oleo, Kendari, Indonesia. She has published more than 15 papers in reputed journals and is working as a Lecturer at Universitas Halu Oleo, Province of Southeast Sulawesi, Indonesia.

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