

**P 6. REMOVAL OF As(V) FROM WATER BY USING PRE-COATED RED MUD
MEMBRANES**

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ABSTRACT: The red mud pre-coated membranes were prepared through a simple deposition on the cellulose filter paper in-line filter holder by using a syringe. The red mud samples ball-milled for different times were characterized by using the measurements of surface area, pore volume and particle size distribution and XRD technique. The surface and cross-section of the prepared membrane were also monitored by FE-SEM technique. The experiments performed on 20 µg/L of As(V) solution indicated that the best membrane performance was obtained by using 5 mL of suspension (0.1 g red mud/ 50 mL water) prepared with 10 h of ball-milled red mud sample at solution pH of 3. The results also indicated that the flow rate had no effect on the removal performance of the membrane. Application to the fortified real water sample also reflected that the membrane was able to reduce As(V) concentration below the limit value set by WHO (10 µg/L) with no matrix effect of real sample. Overall results indicated that the red mud can be successfully used in the preparation of pre-coated membranes for the removal of pollutants from water in continuous adsorption system.

Keywords: *Pre-Coated Membrane, Red Mud, Arsenate, Water Treatment*

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