



Purified paper was prepared from UHT milk packaging waste and firstly applied as a novel electrochemical sensor by chemical modification using alkali treatment, whereas 0.25–1 g of aluminum foil was dissolved into solvent. The purified paper was then immersed into aluminum solution. The existence of aluminum was found on purified cellulose paper. The mapping experiment was reported the aluminum was uniformly distributed onto purified cellulose. It was thermally stable up to 200 °C. The surface roughness of conductive paper was found to be 20–30 micron. A significant conductivity enhancement of purified cellulose was caused by the presence of aluminum. 1 g of aluminum in solution provided the excellent electrochemical conductivity measured by both cyclic voltammetry and electrochemical impedance spectroscopy, verifying that this material might be an alternative candidate as a novel paper-based electrode in electrochemical sensor.