

## **Preparation of photoelectrochemical cell of ITO/Cu<sub>2</sub>O/PVC-LiClO<sub>4</sub>/graphite using Cu<sub>2</sub>O films as an active layer**

### **Abstract**

Cuprous oxide (Cu<sub>2</sub>O) thin films were successfully grown on indium tin oxide (ITO) coated glass by sol-gel spin coating using diethanolamine (DEA) as a solubility agent. The films were annealed at 350 °C in 5% H<sub>2</sub> + 95% N<sub>2</sub> atmosphere. The films were characterized by X-ray diffraction (XRD) and field emission scanning electron microscopy (FESEM). Based on the SEM micrograph of the as obtained film, the film shows better coverage with the four sided pyramidal shape grain size of 108 nm. The prepared Cu<sub>2</sub>O thin film was used as an active electrode for photoelectrochemical cell of ITO/Cu<sub>2</sub>O/PVC-LiClO<sub>4</sub>/graphite. The photovoltaic cell was tested using current-voltage characteristic under light illumination of 100 mW/cm<sup>2</sup>.

**Keywords;** Cu<sub>2</sub>O Thin Film, Graphite, Indium Tin Oxide (ITO), Photoelectrochemical Cell, PVC-LiClO<sub>4</sub>