

ADSORPSI LOGAM TEMBAGA (II) PADA LIMBAH CAIR ELEKTROPLATING DENGAN MENGGUNAKAN SERBUK GERGAJI KAYU TERSULFONASI

THE ADSORBSI CUPER (II) BY SULFONATED SAWDUST

K.A. Ridwan¹, A. Husaini¹, M. Nurimansyah²

¹Staf Pengajar dan ² Alumni, Jurusan Teknik Kimia Politeknik Negeri Sriwijaya
Jalan Srijaya Negara Bukit Besar, Palembang 30139
Email : k.aba@yahoo.com

ABSTRACT

The existence of heavy metals is one of the major problems in the world. Increasing concentration of heavy metals because toxic in the soil, air, and water. Many methods have been developed to decrease concentration of heavy metals from water, for example by precipitation, evaporation, electrochemical and resin's consumption. However, the method is not effective because it requires high cost to operate. Therefore, the research for that materials are cheap and available. Biomaterial is one of the are used to reduce heavy metals from water (biosorption), for example sawdust. In this research, sawdust that used as adsorbent ion copper (II) must be modified by adding a sulfonate group by sulfonation process. The parameters tested are the activation time (sulfonation) and contact time. The optimum conditions of adsorption of Copper (II) by sulfonated sawdust in a single solution occurred at the sulfonation time 120 minutes and adsorption's contact time 60 minutes, the efficiency adsorption is 99.27%. From that conditions, the sulfonated sawdust is tested on the adsorption of Copper (II) in electroplating wastewater. The efficiency adsorption of Copper (II) in electroplating wastewater is 39.03%. This is occurred because of the competition uptake's metals in the electroplating wastewater.

Keywords: Sawdust, Sulfonated, Copper, Electroplating, and Adsorption