



Al-Asmarya Islamic University
Faculty of Engineering
Chemical Engineering Department

**Adsorption of Copper(II) from Aqueous Solution by Activated Carbon
prepared from Orange Charcoal**

**Presented in partial fulfillment of the Requirements
for the Degree of B.Sc. in Chemical Engineering**

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ربيع الآخر 1443

November 2021

Abstract

Heavy metals are still being released into our environment in large quantities. It is even increasing in some parts of the world. Pollution of water resources caused by heavy metal disposal has been a growing global concern in recent decades. One of these poisonous metals is copper. In this study, we used Orange Charcoal prepared from orange trees wood, which can be found in local markets in Libya as a lot and low cost. to remove copper ions Cu^{+2} from aqueous solution was removed using Orange Charcoal as an adsorbent. The effects of concentration, contact time, PH, adsorbent dosage, and chemical activation by HCL and NaOH were all investigated in fixed bed column in this study. the equilibrium adsorption capacity of the adsorbents for Cu^{+2} was obtained by Langmuir isotherm. The results showed that Orange charcoal can be an effective adsorbent for copper(II) removal.