

Removal of Some Metal Ions from Aqueous Solution and Water using Dry Palm Leaflets and It's Dehydrated Carbon

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In this project, the ability of dried date palm leaflets and dehydrated carbon that prepared from it was proved to remove some light and heavy metal ions from aqueous solution and well water. Removal of metals ions was determined by means of two concepts that are being taught throughout science curriculum in Oman. The concentration of removal Cu^{2+} from 0.1M CuSO_4 solution was indicated using standard solution (0.02-0.08M) prepared from 0.1M CuSO_4 by dilution. In this experiment removal of Cu^{2+} by dehydrated carbon was found to be 80% in (10 min.), while this percentage was reached in (20 min) using dry leaflet. On the other hand, the amount of removal Ca^{2+} from CaCl_2 solution was determined using method that detects this ion from its precipitate (CaSO_4). The ability of dehydrated carbon to remove Ca^{2+} in three hours was found to be 60%, so it has high ability to remove Ca^{2+} from its aqueous. In addition , the atomic absorption spectrometry(AAS) from SQU was used for the analysis of Mg^{2+} , Al^{3+} , Zn^{2+} , Cd^{2+} , Ni^{2+} ions from sample of well water. The Mg^{2+} was the largest amount to be removed and the dehydrated carbon was found to remove the lowest concentration like Ni^{2+} . In conclusion, both dry leaflets and dehydrated carbon have high ability to remove metal ion in simple way which is friendly to environment.