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Adsorption-Kinetics of Lead in Water

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ABSTRACT

Water quality is of utmost importance for mankind since it is directly linked with human welfare. Millions of people, all over the globe, particularly in developing countries, are losing their lives due to water-borne diseases. Polluted water is culprit in all these cases. Water pollution may be caused due to domestic waste, waste from different industries, fungicides and pesticides used in agriculture, etc. Therefore, assessing the quality of water samples collected from various habitats affected by municipal and industrial activities is most warranted. In developing countries the high cost of activated carbon, inhibits its large scale use as an adsorbent. Hence, we present the use of low-cost residential waste ash and market waste ash from Warangal Municipal Corporation (WMC) as heavy metal ion sorbents. These ashes were soaked in doubled distilled water and dried in the oven at above 500^0C for 24 h. This was done by several times. These dried ashes were found to be good adsorbents for the removal of lead. The kinetics of adsorption of lead was studied using Legergren's plots.

Keywords: Contents of lead, Adsorption, Isotherm, Kinetics, Solid waste ashes.