INVESTIGATION AS KINETICAL OF CADMIUM (II) IONS REMOVAL FROM AQUEOUS SOLUTION BY COAL ASH

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In recent years, rapid increase in population, insufficiency of energy and nourishment, disorderly urbanization, unplanned and unconscious industrialization, people’s excess consumption desire, rapidly developing technological progress with rattling rate and war between countries and preparation for war operation create environmental pollution. Technological progresses which take an important part in solving the above problems, submit alternative products for the furtherance of humanity welfare but at the same time in qualitative and quantitative aspects considerably different wastes are formed. Such solid and liquid wastes treatment can not be applied at sufficient level with existent conventional treatment progresses. Furthermore, an effective treatment costs related foundings a lot. On this account, at the present day, a great many of industrial foundings as textiles, tanneries, pharmaceuticals, paper, plastics electroplating and cosmetics do scientific research geared to low-cost and have easy practical application treatment methods. Foundings have dyes in their wastewater take an important role in auctioning environmental pollution and demolishing ecological balance. In case of insufficient treatment, discharging such wastes to receiving environment, lakes, rivers, seas, and oceans, is fairly toxic to aquatic organisms and water users. On this account, heavy metal pollution is an important environmental problem. Presence of the toxic concentrations of heavy metal in industrial wastewater creates important environmental problems. For removal heavy metal from industrial wastes, using of biosorbents prepared from herbal wastes is preferred to expensive physical and chemical processes.

In this our study, coal ash used as adsorbent. At the first stage, adsorbent prepared by washing deionized water of coal ash. At the second stage, the adsorption of Cd (II) ions by prepared adsorbent from aqueous solution are investigated as dependent on pH, initial adsorbate concentration, adsorbent dose, and adsorbent -adsorbate equilibrium contact time. At the third stage, kinetic parameters as rate constant, activation energy are determined by doing kinetic studies at different studies. The exact concentration of Cd ion and filterable metal concentrations were determined by AAS (ATI UNICAM 929 atomic absorption spectrophotometer) [1-3].

References