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Equilibrium, Kinetic and Thermodynamic Studies of Lead Adsorption from Aqueous solution onto Activated Carbon Prepared from SilybumMarianum

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Abstract:In this study, SilybumMarianum leaves an agricultural waste was used to prepared low-cost activated carbon (AC) and test has efficiency to adsorb lead ions from aqueous solution by batch experiments under different condition of adsorbent weight, contact time, pH and initial lead concentration. Kinetic data obeyed to Ho-McKay pseudo second order equation. Freundlich and Langmuir isotherms were used to test the equilibrium data and the results shows better fit with a Langmuir equation with maximum adsorption capacity 76.34 mg/g. Thermodynamic parameter shows the adsorption of lead onto preparedAC was spontaneous and exothermic.

Keywords: Lead, SilybumMarianum, Adsorption, kinetic, Thermodynamic.

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