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The Statistical Significant of Adsorbents for Effective Zn(II) Ions Removal

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Abstract : The adsorption efficiency of various adsorbents for the removal of Zn(II) ions from the waste printing developer was studied in laboratory batch mode. The maximum adsorption efficiency of 94.1% was achieved with unfired clay pellets size (d≈15 mm). The obtained values of adsorption efficiency was subjected to the independent samples t-test in order to investigate the statistically significant differences of the investigated adsorbents for the effective removal of Zn(II) ions from the waste printing developer. The most statistically significant differences of adsorption efficiencies for Zn(II) ions removal were obtained between unfired clay pellets size (d≈15 mm) and activated carbon (|t|= 6.909), natural zeolite (|t|= 10.380), mixture of activated carbon and natural zeolite (|t|= 9.865), bentonite (|t|= 6.159), fired clay (|t|= 6.641), fired clay pellets size (d≈5 mm) (|t|= 6.678), fired clay pellets size (d≈8 mm) (|t|= 3.422), respectively.

Keywords : Adsorption efficiency, adsorbent, statistical analysis, zinc ion.
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