determined the binding constant.

Keywords: Anionic organic pollutants, Protonated polyaza macrocycles, Job's plot, Binding Constant, Benesi – Hildebrand method

Abstract No: TA 13

Removal of Selected Textile Dyes from Effluent Water Using Mineral Adsorbents and Activated Carbon

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Removal ability of the textile dyes, Methylene Blue, Rodamine B and Congo Red from water was investigated in this study. Static experiments were conducted using each dye with selected adsorbents, Kabok, Brick Clay, Granite Chips and activated carbon. In each experiment, 1.00 g of adsorbent was treated with 25.00 cm^3 of 2.6 x 10^{-5} mol dm^{-3} dye solutions. Absorbances of each solution were measured at their respective λ_{max} values at a time duration of 0 - 240 min and their average values are reported. The continuous flow experiments were carried out with best adsorbent for each dye identified by static experiments, using 2.6 x 10^{-5} mol dm^{-3} dye solutions. The flow rate of the column was kept as 10 mL/min. The experiment was conducted for 120 minutes.According to the static experiment results, the natural adsorbents, Kabok and Brick Clay showed the best percentage removal of Methylene Blue with 98.8% and 95.7% which was better compared with activated carbon, 83.3%. In contrast, Rodamine B was best removed by activated carbon with percentage removal of 82.5%. Among the inorganic mineral adsorbents, Brick Clay showed a percent removal of 64.1% for Rodamine B. Congo red was best removed by Brick Clay with 96.6% efficiency compared to 43.4% removal of activated carbon.The breakthrough curves of the continuous flow experiments show the potential of removing congo red and methylene blue using Brick Clay and Kabok respectively.

Keywords: Mineral adsorbents, wastewater, methylene blue, absorption

Abstract No: TA 14

Effect of biochar application on plant uptake of sulfamethoxazole in soil

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The purpose of this study was to assess the effect of cinnamon wood biochar (CWBC) in minimizing the plant uptake of sulfamethoxazole (SUL) from the contaminated soil. For this purpose, *Ipomoea aquatica* was grown in soil and 2.5% w/w CWBC amendment contaminated with 50 mg/kg of SUL for 4 weeks. The results suggest that the root uptake of SUL relatively higher than by shoot. The plant uptake of SUL was significantly reduced by 60% when 2.5% w/w of CWBC was added to the soil. The bioaccumulation factor of SUL in *Ipomoea aquatica* grown in soil was 158.38. This was decreased by 76% with the addition of 2.5% of CWBC to the soil. In contrast to the controlled experiment, the retention of SUL in CWBC amendment was increased by 65%. The present study suggested that the application of CWBC to the agricultural soil effectively decreased the plant uptake while increased SUL retention in soil. Thus, the application of biochar to the soil limits human exposure of SUL *via* food crops.

Keywords: Pharmaceutical and personal care products, biochar, immobilization, plant uptake