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## Removal of Aluminum (III) from water using agriculture product

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This aim of this work was to reduce or remove high levels of aluminum in drinking water by Guava leaves as natural material. The study revealed that Guava leaves was able to effectively remove significant percentage of Aluminum. Using 0.5 gm sample size of ground Guava leaves could remove about 90% of Aluminum with an initial concentration of 100 ppm within 120 min. A significant increase in the removal of Al(III) with increase in the guava leaves and increases in temperature. There is a remarkable efficiency for Guava leaves in the range of metal concentration of 50 to 250 ppm. Time 120 minutes is the suitable contact time of adsorption. The optimum pH for the percentage adsorption of metal ions was found to be acidic, (pH=6) for Aluminum solution. It is obvious that 0.5 gm dose is the most efficient adsorbent dose, and the ideal temperature is 25-30°C. The thermodynamic parameters  $\Delta G^\circ$ ,  $\Delta H^\circ$  and  $\Delta S^\circ$  was also studied and found that the sorption was feasible, spontaneous and endothermic in nature and The positive value of entropy change suggested the increased randomness.

**Keywords:** Adsorption, Aluminum, Aqueous solution, guava leaves, pH pollution

### Biography

Mohamed A Eledkawy is a graduate of the Faculty of Science in 2009, and obtained a postgraduate diploma in petrochemicals applied studies Alexandria University in 2011. Now, he is about to complete an M.Sc. in inorganic chemistry (physical chemistry), Damanhour University. He worked as a chemist for the last six years in West Delta Electricity Production Company. He is responsible for Water treatment; clarification, purification flocculation, filtration.

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