STUDY OF ACCUMULATION AND RECUPERATION OF LANTHANUM AND NEODYMIUM IONS BY COLUMN BIOSORPTION WITH *Sargassum* sp. BIOMASS.

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Biosorption is based on metallic ions removal from aqueous solutions due to interactions among the metals and active sites present on cellular envelope. Biosorption has been recognized as potential alternative on heavy metals removal from wastewaters produced by anthropogenic action. Rare earths (RE) metals are essentials for manufacturing lasers, superconductors, catalysts, phosphorus, permanent magnets, and electronic information storage. The high prices of RE is resulted from expensive and complexes separation and purification processes from RE metals mixtures because their chemical similarities; the process involve several paths of solvent extraction and/or ion-exchange. Some few countries dominate RE separation processes, which present a considerable both geopolitic and economic importance. The objective of this work was to evaluate the potentiality of *Sargassum* sp. biomass for utilization in lanthanum and neodymium biosorption. The results showed that the maximum biosorption capacity values for lanthanum and neodymium were similar in batch and columns experiments; thus the change in the type operational process did not affect the biosorption capacity. Desorption assays present distinct recuperation percentage to metals studied, indicating a possible partition of both RE; the concentration factors of that metals in desorbent solution were expressive (20 times). Breakthrough curves showed that occur effectively a differential elution among the metals indicating a real possibility of separation.

Keywords: biosorption, rare earth metals, *Sargassum* sp.