

Heavy metal ion, pesticide and dye wastewaters cause severe ecological contamination with conventional treatment methods proving inadequate, unsuccessful or expensive to apply. Several biomaterials have recently been explored for the biosorption and biocoagulation-flocculation of pollutants from wastewaters. In the past 10 years, there has been an extensive research output on the use of biological materials such as agricultural wastes, chitosan, *Moringa Oleifera*, *Eichhornia crassipes*, bacteria, algae, Cactus plants etc. in environmental remediation. The present paper reviews the scattered information about the green technology involving *Opuntia ficus-indica* derived biomaterials in wastewater remediation. Its characterization, physicochemical compositions, its application in biosorption and flocculation of dyes, pesticides and metallic species focussing on equilibrium, kinetics and thermodynamic properties are reviewed. The main results obtained in the depollution of a variety of contaminated wastewaters using cladodes, fruit pulp and peels mucilage and electrolytes show very high and promising pollutant maximum sorption capacities and removal percentages in the range 125.4-1000 mg/g and 0.31-2251.56 mg/g for the biosorption of dyes and metallic species respectively and removal % ranges of 50-98.7%, 11-93.62% and 17-100% for turbidity, chemical oxygen demand and heavy metals respectively by coagulation-flocculation process. The biomaterials proved to be efficient in pollutant removal that there is need to explore the scaling up of the study from the laboratory scale to community pilot plants and eventually to industrial levels.