In this work Nile tilapia fish scales as green wastes and environmentally-friendly was modified by using eco-friendly and low price chemicals to the removal and preconcentration of Mn (II), Fe (II) and Cd (II) ions from aqueous media. The main advantages of the proposed method are the low costs, high preconcentration factor, short analysis time and high capacity.

We discuss the characteristics of fish scales. Then, the study of chemical parameters such as pH, shaking time, capacity, interfering ions and hydrochemical parameters such as sample flow rate are undertaken in this chapter.

In this work Nile tilapia fish scales was modified by using eco-friendly and low price chemicals like acetic acid, sodium carbonate, ammonium hydroxide, sodium citrate or sodium acetate. The modified Nile tilapia fish scales applied to the removal of Mn (II), Fe (II) or Cd (II) from aqueous solution. Applications of the modified fish scales biosorbent for preconcentration of tested metal ions from various real samples. Finally, the thesis demonstrates the references utilized in this work and conclusions achieved from the whole work and the recommendations for future work that may be conducted in this area.