



“Gheorghe Asachi” Technical University of Iasi, Romania



EFFECT OF PRETREATMENT ON *Ceratophyllum demersum* FOR ENHANCED BIOSORPTION OF Cr(VI) AND Cd(II)

Pari Teymouri^{1,2}, Nemat Jaafarzadeh^{3,4}, Azar Mostoufi⁵,
Hoda Amiri⁶, Nadali Alavi^{3,4}, Mehri Dinarvand⁷, Mehdi Ahmadi^{3,4*}

¹Environmental Health Research Center, Kurdistan University of Medical Sciences, Sanandaj, Iran

²Department of Environmental Health Engineering, Kurdistan University of Medical Sciences, Sanandaj, Iran

³Environmental Technologies Research Center, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran

⁴Department of Environmental Health Engineering, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran

⁵Department of Medicinal Chemistry, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran

⁶Department of Environmental Health Engineering, Tehran University of Medical Sciences, Tehran, Iran

⁷Agriculture and Natural Resources Research Center, Ahvaz, Iran

Abstract

In this work, twenty different physical and chemical methods were used to study the effect of pretreatment on Cr(VI) and Cd(II) biosorption by an aquatic plant (*Ceratophyllum demersum*) biomass. The H₃PO₄ boiled biomass had the highest biosorption capacity (45 mg/g) for Cr(VI). The NaOH boiled biomass showed a higher biosorption capacity for Cd(II) (63 mg/g). Dunnett's test was carried out to compare the biosorption capacity of raw biomass with those pretreated by H₃PO₄ and NaOH, and the results showed the better performance of pretreated samples. To explore the surface characteristics and explain the differences in biosorption behavior; SEM, FT-IR and elemental analysis were performed for raw biomass and those pretreated by boiling in H₃PO₄ and NaOH. This work is of great meaning in protecting natural environment by drawing on natural biomass, and it is a combination of nature and modern industry.

Key words: biosorption, Cr(VI), Cd(II), *Ceratophyllum demersum*, pretreatment

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* Author to whom all correspondence should be addressed: e-mail: Ahmadi241@gmail.com; Phone:+989126779273; Fax:+986113388425