**Removal of Zn(II) Ion from Aqueous Solutions by Gellan Gam-Chitosan Complex Adsorbent**

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| **Abstract**  In this study, the cross-linked gellan gum (GG) beads were kept in the chitosan (CS) solution for the formation of the polyelectrolyte complex, later the beads were purified and removed from the solution before the second crosslinking [1]. The potential of these complex beads to remove Zn(II) ions from wastewater was investigated. The analysis of FT-IR and SEM/EDX was performed to characterize the obtained polyelectrolyte complex. In the adsorption studies performed with the polyelectrolyte complex, the most appropriate pH value was 6. When the experimental conditions were applied at temperature: 25°C, pH: 6, the initial concentration of the solution: 200 ppm, and the adsorption time: 10 hours, the adsorption capacity was found to be approximately 42.05 mg/g. Kinetic studies demonstrated that the experimental results were consistent with the pseudo-second-order kinetic model. The Langmuir isotherm model was also found to be compatible with the equilibrium adsorption results. It has also been determined that the complex adsorbent can be used at least five times without a serious reduction in the adsorption capacity. As a result, the prepared polyelectrolyte complex may be a proper adsorbent for the adsorption of Zn(II) ions to treat wastewater containing a low metal concentration. |
| Keywords: Chitosan, Gellan gum, Polyelectrolyte complex, Zn(II) |

**References**

1. Zhang, W., Yun, M., Yu, Z., Chen, D. & Li, X. (2019). A novel Cu(II) ion-imprinted alginate-chitosan complex adsorbent for selective separation of Cu(II) from aqueous solution. *Polymer Bulletin*, *76*,1861-1876.