

Development of biosorbents using surface modification and immobilization methods for dye biosorption

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The main aim of this work was to enhance the biosorption capacity of *Corynebacterium glutamicum* for the remediation of dye bearing wastewaters. Amine groups were responsible for accommodating the negatively charged Reactive Red 4 (RR4) via electrostatic interaction. Meanwhile, the carboxyl groups on the surface of *C. glutamicum* were found to electrostatically interact with positively charged Basic Blue 3 (BB3). Thus, increasing the amine or carboxyl groups of *C. glutamicum* through various surface modifications resulted that dye biosorption capacity could increase at most four times comparing with that of raw biomass. Moreover, in order to apply developed biosorbents in column system, immobilized biomass was prepared and investigated.