

## Removal of Basic Dye from Aqueous Solutions using Raw, Chemical Modified and Immobilized biomass of *Corynebacterium glutamicum* in Batch System

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*Corynebacterium glutamicum*, as a full-scale fermentation process waste, can be as a biosorbent for the removal of cationic dye, Basic Blue 3 (BB 3). However, chemical modification on the biomass surface can greatly improve the sorption capacity for basic dye. In this study, the powdered form *C. glutamicum*, regarded as the raw biomass, was modified by three chemicals, i.e. succinic anhydride (SA), citric acid (CA) and poly (amic acid) (PAA), which can introduce free carboxyl groups onto the biomass surface. Among of these chemicals modified biomass, PAA-modified biomass (PAAB) showed the best sorption capacity according to the data of isotherm at pH 7. In order to apply as a good industrial biosorbent, immobilization of PAAB using calcium alginate was carried out. Desorption experiments were carried out with various concentrations of organic acid (citric acid and acetic acid) as eluents. 2.0 M citric acid eluent showed the highest desorption efficiency (90.8%), confirming the technical feasibility of the biosorption process for industrial application.