

Kinetic Studies on Adsorption of Biobutanol Using Adsorbent Resin

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Adsorption of biobutanol using adsorbent resin is considered as one of the most energy-efficient recovery of butanol from a fermentation broth. To develop the adsorption process, kinetic studies on adsorption of butanol using poly (styrene-co-divinylbenzene) adsorbent resin were carried out in this work. In the experiment, a slurry adsorption process was used and the fermentation broth, containing acetone, ethanol, butanol, volatile fatty acids, etc., was fed into the adsorption process. According to published results, kinetic models for the adsorption of each compound were assumed to be represented in the form of the Langmuir equation and the kinetic parameters were estimated based on the experimental data. The developed kinetic models will significantly contribute to designing a pilot-scale slurry adsorption process.