

Design and Optimization of Novel Hybrid-Blower-and-Evaporator-Assisted Distillation for Recovery of 2,3-Butanediol From Fermentation Broth

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2,3-Butanediol (2,3-BDO) is a synthetic chemical compound that also can be produced by biomass fermentation, which is gaining share in the global market as an intermediate product for numerous applications, i.e. as liquid fuel or fuel additive. However, the recovery of 2,3-BDO from its fermentation broth remains a challenge due to its low concentration and its solubility in water and other components. Thus, a cost-effective recovery process is required to deliver the required purity of 2,3-BDO. This paper presents novel hybrid-blower-and-evaporator-assisted distillation for 2,3-BDO purification from a fermentation broth. The results show that the proposed HBED configuration can save 26.3% in terms of operating costs.

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