

The operation performance of an expanded bed contactor characterised by mechanical stirring

ABSTRACT

The performance of an expanded bed contactor (UpFront i.d. 20 mm) characterised by mechanical stirring flow distribution in the adsorption of intracellular proteins from concentrated unclarified yeast extract was investigated. High density pellicular adsorbent (UpFront steel-agarose; $\rho = 2.65 \text{ g ml}^{-1}$) derivatized with selective ligand chemistries (Cibacron Blue 3GA) was adopted in this study. The adsorption of glyceraldehyde 3-phosphate dehydrogenase (G3PDH) from bakers yeast was chosen as a demonstration of this approach. It was demonstrated that a high biomass throughput adsorption operation (25 % ww/v of yeast extract) was achieved in this contactor design.

Keyword: Expanded bed contactor; Mechanical stirring; Flow distribution; Yeast extract; G3PDH