

عنوان مقاله:

A novel continuous bioproduct purification process by application of multi-fluidised bed adsorption

محل انتشار:

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نویسندگان:

Mohsen Jahanshahi - Centre for Formulation Engineering, School of Chemical Engineering, The University of Birmingham

Andrew Lyddiatt - Centre for Formulation Engineering, School of Chemical Engineering, The University of Birmingham

خلاصه مقاله:

Liquid Fluidised bed adsorption (FBA) is a technique that combines solid-liquid separation and product adsorption in a single step. However, the application of a multi-fluidised bed system (MFBS), where each bed is sequentially operated on-line to achieve a prerequisite dynamic capacity of adsorbed product and then taken off-line for adsorbent washing and desorption, would facilitate continuous processing of a productive batch. Unbroken, repetitive operation of this cycle would decrease the adsorbent inventory and increase the maximum batch size. We report application of a pellicular adsorbent, to the direct recovery of an intracellular enzyme in fluidised bed adsorption processes. Productive performance is directly compared for similar volumes of adsorbent and feedstock deployed in (i) the discontinuous application of single FBA and (ii) continuous MFBS. The bed switching inherent in MFBS facilitated an enzyme productivity greater than single bed unit FBA which required unproductive periods of adsorption, washing and regeneration. The generic application of MFBS to the rapid recovery of bioproducts in continuous operations will be ...discussed

کلمات کلیدی:

Bioproduct purification; pellicular adsorbent; multi-fluidised bed adsorption; continuous process

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