**Continuous Clarification Using an Improved Inclined Plate Settler Concept.**

Hannah Engelmaier1, Nikolaus Hammerschmidt1 , Christoph Dattenböck2, Alois Jungbauer1,3

*1 Austrian centre of industrial biotechnology, acib GmbH, Muthgasse 18, A-1190 Vienna, Austria; 2 Baxalta Innovations GmbH, Industriestraße 131, A-1220 Vienna; 3 University of Natural Resources and Life Sciences, Vienna (BOKU), Gregor-Mendel-Straße 33, A-1190 Vienna*

*\*Corresponding author: hannah.engelmaier@acib.at*

**Highlights**

* Truly continuous solid-liquid separation
* New concept inclined plate settler
* Stable, high product yield

**1. Introduction**

With market pressure increasing in the biotechnological and biopharmaceutical industry, the trend is going towards continuous processing [1]. While, continuous chromatography is being readily adopted [2,3], alternative unit operations e.g. flocculation and precipitation are being mostly neglected. These techniques suffer from the fact that there is a lack of efficient continuous solid-liquid separation techniques [4].

**2. Methods**

We tested our inclined plate settler system with suspensions with different settling behavior. In these tests, operation parameters were optimized to ensure high product yield. The product was simulated to be either, comprised by the solid or by the liquid phase. We also tested the applicability of the optimized conditions during scale-up from one to multiple plates. The solid-liquid separation performance was monitored by online sensors and was verified and complemented by offline measurements.

**3. Results and discussion**

Using an improved concept for inclined plate settler based solid-liquid separation we were able to demonstrate efficient solid-liquid separation. We have optimized the operation conditions and have obtained high product yield in all operation scenarios. The separation process was highly stable after an initial ramp-up phase.

**4. Conclusions**

We have developed a new plate settler concept that broadens the application range of inclined plate settlers for solid-liquid separation tasks. Thereby, we provide a possible solution to the bottleneck in continuous processing, being solid-liquid separation.

**References**

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