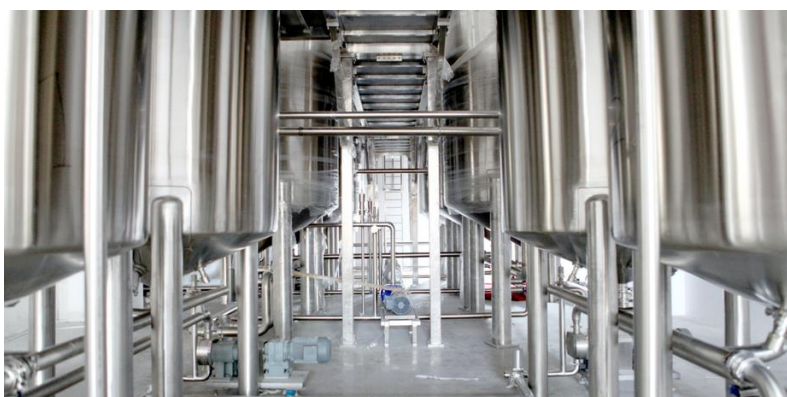




NovaUCD

Technology Licensing Opportunity

A New Low-Cost and Scalable Liquid-Liquid Phase Separator for Flow Chemistry and Continuous Processing



Overview:

Continuous flow synthesis in the pharmaceutical industry and in fine chemical production often encounters bottlenecks in production due to purification and isolation of intermediates and end products. Continuous liquid-liquid extraction is a common method of purification used but requires subsequent separation of the immiscible solvents which relies on density differences and can be slow to occur for many solvent systems for a variety of reasons.

Technology Overview:

These challenges are overcome by the use of a low-cost, modular, robust, and easily customisable continuous liquid-liquid phase separator which has been developed by University College Dublin researchers. The separator uses a tubular membrane and annular channels to allow high fluidic throughputs while maintaining rapid, surface wetting dominated, phase separation. Accurate control of the annular gap promotes separation via surface tension instead of gravity and results in faster and more compact separators.

The system can greatly increase the capacity of current batch vessels as no space is required for the extraction solvent, which can be introduced inline during re-circulation and removed before returning solution to the batch vessel. Additionally, impurities or unwanted reagents can be removed within extraction solvent by the membrane separator.

Key Features/Advantages:

- A low-cost, scalable and robust system.
- Speed of separation and easily customisable system for specific application.
- Ability to separate liquids with similar densities.
- Requires less space than traditional technologies.
- Compatibility with standard process equipment such as heat exchanges.

Value Proposition:

A novel low-cost scalable device that rapidly separates immiscible or partially miscible mixture of liquid phases.

Market:

Research Facilities; CDMO;
Specialist separation companies.

Lead Inventor:

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