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Anti-Fouling Control of Plug-Flow Crystallization via Heating and Cooling Cycle

A novel reactor system for pharmaceutical manufacturing eliminates encrustation in plug flow crystallization, increasing yield and product consistency for optimal patient dosage and continuous production.

Using a traditional plug flow crystallization method for the manufacture of an active pharmaceutical ingredient creates encrustation in the system, causing inefficient production. This encrustation blocks flow through the reactor resulting in an inconsistent product and necessitating frequent cleaning. Most importantly, the resulting pharmaceutical product will have inferior properties, resulting in inconsistent dosage in the patient. However, a perfected method of plug flow crystallization has the potential to increase manufacturing productivity and product quality.

Researchers from Purdue University have developed a reactor system that eliminates encrustation in plug flow crystallization platforms used in pharmaceutical manufacturing. This system eliminates down time for reactor cleaning, increases product yield, and yields a more consistent product. The more consistent active pharmaceutical ingredients produced using this plug flow system will ultimately provide an optimum dose for the patient's best means of recovery.

Advantages:

-Efficient manufacturing

-Higher production yield

-Allows for continuous pharmaceutical manufacturing

Potential Applications:

-Drug manufacturing

TRL: 5

Intellectual Property:

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Pharmaceuticals/Pharmaceutical Manufacturing & Methods

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