

# Continuous Lyophilization Roll-to-Roll Manufacturing and Metrology System

**A new roll-to-roll freeze drying metrology system optimizes continuous processing to accelerate production and enhance quality control with increased data gathering for pharmaceuticals and food products.**

Batch processing is a popular mechanism to freeze dry pharmaceuticals and food products. However, there is an increasing interest in the pharmaceutical industry to switch from batch to continuous freeze drying processes due to a need for pristine physical and chemical data regarding the process.

A Purdue University researcher has developed a new roll-to-roll freeze drying metrology system that addresses issues with current batch processes. This technology helps accelerate the process and quality control by optimizing the roll to roll freeze drying system. It can also access the physio-chemical changes that take place during freeze drying.

## **Advantages:**

- Accelerates freeze drying process
- Increases data gathering

## **Potential Applications:**

- Pharmaceuticals
- Food products
- Continuous freeze drying processes

**TRL: 3**

## **Intellectual Property:**

Provisional-Patent, 2016-10-10, United States | PCT-Patent, 2017-10-10, WO  
| NATL-Patent, 2019-04-01, United States | DIV-Patent, 2021-11-15, United

## **Technology ID**

2017-CAKM-67672

## **Category**

Biotechnology & Life  
Sciences/Bioprocessing &  
Biomanufacturing  
Agriculture, Nutrition, &  
AgTech/Food Safety &  
Traceability  
Pharmaceuticals/Biopharmaceuti

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