

Biomimetic Solid Separator

Tech ID: 21101 / UC Case 2010-699-0

ABSTRACT

Researchers at the University of California, Davis have invented an economical and effective device for the separation of difficult to remove fragile particles.

FULL DESCRIPTION

The efficiency of conventional separation methods such as centrifugation, filtration or sedimentation is generally poor. When the target solids are small, have a density similar to that of the fluid phase and are fragile, the energy consumed during separation is high. There is a need for new technology to address the deficiencies of conventional separation methods.

Researchers at the University of California, Davis have invented a new device for separating solids from liquid or air that is based on biomimetic concepts. This new device uses fluid dynamics principles to overcome some of the deficiencies of conventional methods and provides an economical and effective alternative for the separation of difficult to remove particles. Details of the device such as dimensions, shape and structures can be modified to achieve optimum performance with particles of different size and specific gravity. The device can be scaled up or down depending on the amount of fluid to be treated hence can be used in diverse settings.

APPLICATIONS

- ▶ Food & beverage manufacturing plants
- ▶ Toxicology studies
- ▶ Laboratories
- ▶ Waste water treatment plants
- ▶ Biochemical and chemical production
- ▶ Bioenergy
- ▶ Aquaculture facilities
- ▶ Air sampling and filtration
- ▶ Dust control devices

FEATURES/BENEFITS

- ▶ Low operational energy requirement
- ▶ In-expensive scalable device
- ▶ No clogging due to absence of membrane
- ▶ Capable of treating fragile particles
- ▶ Little or no device cleaning process required
- ▶ Device can either replace the existing filtrating system or can be used as a complementary device to filter fragile particles before or after other particle separation operations

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OTHER INFORMATION

KEYWORDS

solid separator, filtration,
 solid liquid separation,
 solid air separation

CATEGORIZED AS

- ▶ **Agriculture & Animal Science**
 - ▶ Devices
- ▶ **Biotechnology**
 - ▶ Industrial/ Energy
- ▶ **Environment**
 - ▶ Other
- ▶ **Engineering**
 - ▶ Other

RELATED CASES

2010-699-0

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	9,827,518	11/28/2017	2010-699

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