



US 20130011210A1

(19) **United States**

(12) **Patent Application Publication**

Toner et al.

(10) **Pub. No.: US 2013/0011210 A1**

(43) **Pub. Date: Jan. 10, 2013**

(54) **SYSTEMS AND METHODS FOR PARTICLE FOCUSING IN MICROCHANNELS**

filed on Apr. 17, 2007, provisional application No. 60/999,131, filed on Oct. 16, 2007.

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Publication Classification

(51) **Int. Cl.**
B65G 53/30 (2006.01)
(52) **U.S. Cl.** **406/86**

(21) Appl. No.: **13/619,309**

(57) **ABSTRACT**

(22) Filed: **Sep. 14, 2012**

Various systems, methods, and devices are provided for focusing particles suspended within a moving fluid into one or more localized stream lines. The system can include a substrate and at least one channel provided on the substrate having an inlet and an outlet. The system can further include a fluid moving along the channel in a laminar flow having suspended particles and a pumping element driving the laminar flow of the fluid. The fluid, the channel, and the pumping element can be configured to cause inertial forces to act on the particles and to focus the particles into one or more stream lines.

Related U.S. Application Data

(62) Division of application No. 13/480,862, filed on May 25, 2012, which is a division of application No. 12/103,885, filed on Apr. 16, 2008, now Pat. No. 8,186,913.

(60) Provisional application No. 60/923,609, filed on Apr. 16, 2007, provisional application No. 60/923,837,

