



US 20080295909A1

(19) **United States**

(12) **Patent Application Publication**
Locascio et al.

(10) **Pub. No.: US 2008/0295909 A1**

(43) **Pub. Date: Dec. 4, 2008**

(54) **MICROFLUIDIC DEVICE FOR PASSIVE SORTING AND STORAGE OF LIQUID PLUGS USING CAPILLARY FORCE**

Publication Classification

(51) **Int. Cl.**
F15C 1/06 (2006.01)
B01L 3/00 (2006.01)
B81B 1/00 (2006.01)

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(52) **U.S. Cl.** **137/833; 422/100; 422/101**

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(57) **ABSTRACT**

A three dimensional microfluidic device for passive sorting and storing of liquid plugs is provided with homogeneous surfaces from the exposure of a photopolymer through binary masking motifs, i.e., arrays of opaque pixels on a transparency mask. The device includes sub-millimeter three-dimensional relief microstructures to aid in the channeling of fluids. The microstructures have topographically modulated features smaller than 100 micrometers.

(21) Appl. No.: **12/127,328**

(22) Filed: **May 27, 2008**

Related U.S. Application Data

(60) Provisional application No. 60/939,939, filed on May 24, 2007.

